National Park Service
U.S. Department of the Interior

Haleakalā National Park
Maui, Hawai‘i

Draft Commercial Services Plan Environmental Assessment May 2012

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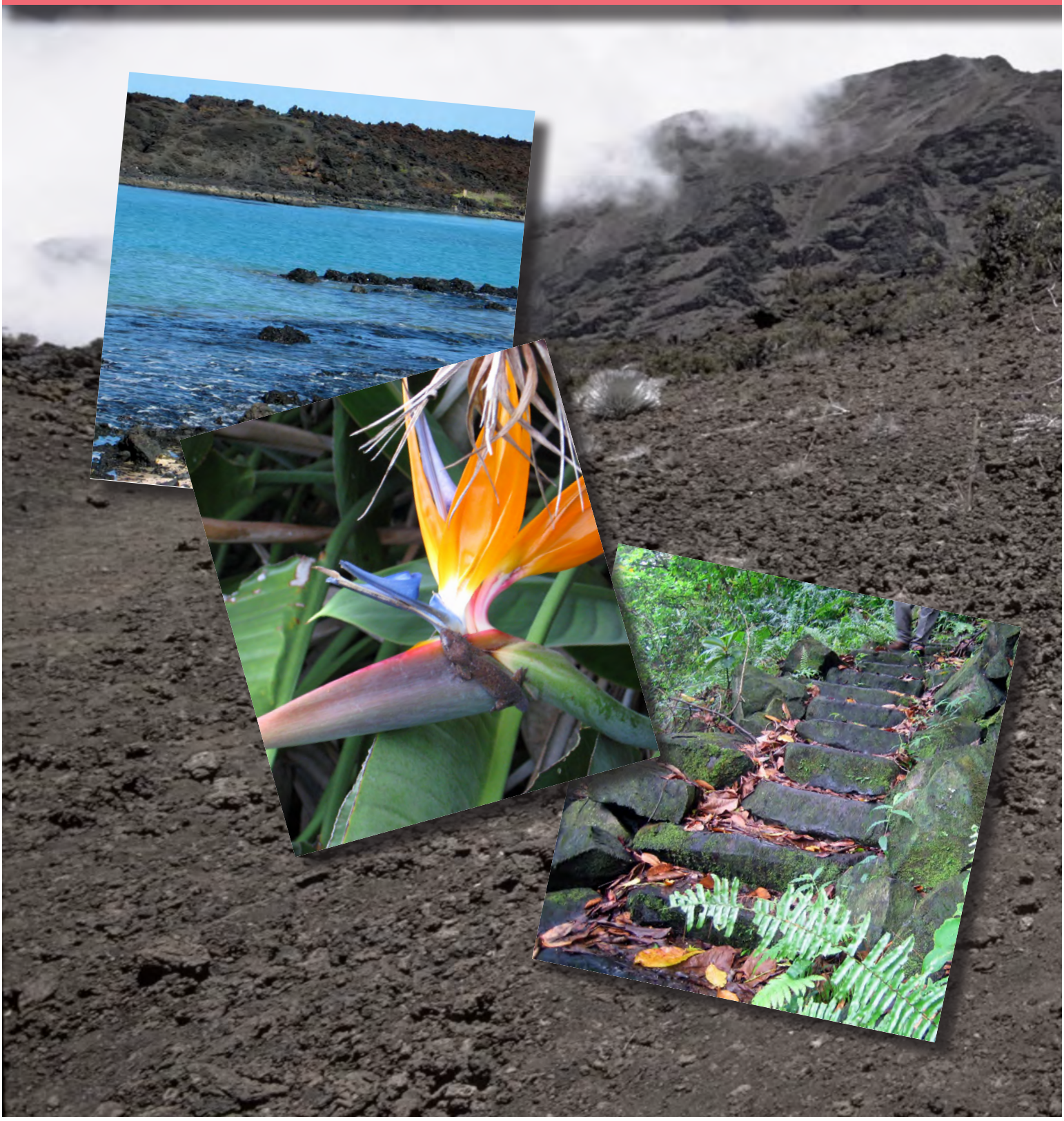

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A GUIDE TO THIS DOCUMENT

This *Haleakalā National Park Commercial Services Management Plan / Environmental Assessment* is organized in accordance with the Council on Environmental Quality's (CEQ) implementing regulations for the National Environmental Policy Act (NEPA), the National Park Service's (NPS) *Park Planning Program Standards*, and Director's Order 12 and Handbook: *Conservation Planning, Environmental Impact Analysis, and Decision-making*.

Chapter 1: Background sets the framework for the entire document. It describes what the plan is intended to do and why it is being prepared. The chapter gives guidance for the management alternatives that are being considered—guidance that is based on the park's legislation, its purpose, the significance of its resources, servicewide laws, policies, and regulations, and other park planning efforts. The chapter also details the issues and concerns that were raised during the scoping period and initial planning team efforts; the alternatives in the next chapter address these issues and concerns. This chapter concludes with a statement of the scope of the environmental assessment—specifically what impact topics are or are not analyzed in detail.

Chapter 2: Alternatives, Including the Preferred Alternative, begins by determining necessary and/or appropriate commercial services at Haleakalā National Park, and potential management actions that were incorporated into the alternatives. The chapter includes the continuation of current management practices and trends in the park (alternative A, no action). Three alternatives for managing commercial services in the park—the preferred alternative (alternative B), alternative C, and alternative D—are next presented. Mitigative measures proposed to minimize or eliminate the impacts of some proposed actions in the alternatives are then identified. The environmentally preferable alternative is identified next, followed by a discussion of alternatives or actions that were considered but dismissed from detailed evaluation. The chapter concludes with summary tables of the alternatives and the key environmental consequences of implementing those alternatives.

Chapter 3: The Affected Environment describes those areas and resources that would be affected by implementing the actions contained in the alternatives. It is organized according to the following topics: natural resources, cultural resources, wilderness character, visitor use and experience, public health and safety, socioeconomics, and park operations.

Chapter 4: Environmental Consequences analyzes the impacts of implementing the alternatives on topics described in "The Affected Environment" chapter. Methods that were used for assessing the impacts in terms of the intensity, type, and duration of impacts are outlined at the beginning of the chapter.

Chapter 5: Consultation and Coordination describes the history of public and agency coordination during the planning effort, including consultations, and any future compliance requirements. It also lists agencies and organizations that will be receiving copies of the document.

Appendixes, **Selected References**, and a list of **Preparers and Contributors** are found at the end of the document.

PURPOSE AND NEED FOR THE PLAN

PURPOSE OF THE PLAN

The National Park Service is proposing to implement a commercial services plan (CSP or plan) for the nonwilderness areas of Haleakalā National Park (park). The plan's primary purpose is to provide direction for management of commercial services in the park over the next 10 to 15 years. Commercial services involve the buying and selling of goods and services and are a business activity. They may take place within a unit of the National Park Service only under certain defined and limited circumstances. The commercial services plan provides details on how the park's commercial service providers will be managed to achieve overall park goals and meet desired resource conditions and visitor experiences. The plan will also determine the overall mix of commercial ground tour services in the park excluding wilderness. (Air tour services will be addressed in a separate air tour management plan, while commercial services in the wilderness area will be addressed in a separate wilderness stewardship plan. Thus, all references in the commercial services plan to tour services are to ground services in the park outside of wilderness.) This plan will (1) determine what levels and types of commercial tour services are appropriate and meet the eligibility criteria for authorization under available legal authorities (for example, whether "necessary and appropriate" if a concession contract); (2) determine whether those services are compatible with the park's mission of preserving and protecting its natural and cultural resources; and (3) determine how to ensure high quality experiences for visitors who participate in commercial tours.

NEED FOR THE PLAN

This plan is needed to determine that the commercial visitor services provided at the park are appropriate and meet the eligibility criteria for authorization under the available legal authorities. Actions considered by the commercial services plan may include new services and/or improvements to existing services to achieve future goals for the park. It is important to provide guidance for the future management of commercial visitor services within the park and to ensure continuity of services in support of quality visitor experiences.

An estimated 15%–30% of the park's visitors are currently accompanied by commercial services providers, but the percentage ranges as high as 50% of Haleakalā summit visitors during sunrise. Thus, the types and levels of commercial uses in the park affect park visitors, natural and cultural resources, and park operations.

Up until 2007, Haleakalā National Park experienced a dramatic increase in commercial service use, particularly at the park's two most developed and popular areas—the summit (and crater) and Kīpahulu. The resulting crowding and congestion have contributed to adverse impacts to visitor experience and to the park's natural and cultural resources. Soil degradation, excessive erosion, trampling of vegetation, and disturbance of endangered species, such as the Haleakalā silversword and Hawaiian petrel, have occurred in localized areas. Crowding and inappropriate behavior have contributed to a loss of *sense of place*, which is often the initial reason visitors come to the park; interference with traditional cultural uses; and increased negative perceptions of the park by Native Hawaiians. Commercial tours are believed to have contributed to these impacts in the

past. A plan is needed to provide direction on addressing adverse effects that may be occurring due to commercial services.

A commercial services plan is needed to provide a long-term solution to public health and safety and visitor protection issues created by the large number of commercial and private vehicles attempting to park at the Haleakalā summit to view the sunrise. These issues were addressed on an interim basis by the park's *Commercial Use at Sunrise Interim Operations Plan* (see appendix A). This interim plan was implemented in the fall of 2005 to better manage commercial service uses at the summit area during peak sunrise visitation hours.

In addition, a commercial services plan is needed to address past safety issues with regard to commercial bike tours in the park.

This document was prepared in accordance with and is consistent with

- The National Environmental Policy Act of 1969 (42 *United States Code* (USC) 4321 et seq.) and associated regulations from the Council on Environmental Quality (1978)
- NPS *Management Policies 2006* (in particular chapter 8 regarding appropriate uses of the park for purposes of the NPS Organic Act of 1916 (16 USC 1); section 10.2, Concessions; section 10.3, Commercial Use Authorizations; and section 4.9, Soundscapes)
- Director's Order 48: *Concession Management* and 16 USC 79 subchapters 3 15966
- Director's Order 12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision-making

SCOPE OF THE COMMERCIAL SERVICES PLAN

This commercial services plan addresses all areas in the park excluding wilderness where commercial visitor tour services are provided, and it replaces the 2005 Haleakalā interim operations plan (discussed in the "Relationships of Other Planning Efforts to this Plan" later in this chapter). For the purposes of this plan, a service is generally considered commercial if the provider receives compensation (through money, travel expenses, or the receipt of something that has monetary value). The types of commercial services addressed in this plan include, but are not limited to, bicycle riding, horseback tours, guided hiking, astronomy tours, and road-based vehicle tours. Among other issues, this plan addresses travel routes, vehicle types, number of trips, number of parking spaces available or assigned, and entities authorized to provide commercial services. The latter includes a concession contract and commercial use authorization (CUA) holders.

ACTIVITIES OF THE HAWAIʻI PACIFIC PARKS ASSOCIATION AND KĪPAHULU OHANA INC.

The plan does not address cooperating association agreements (under 16 USC sections 1-4, 6, 17j-2(e) and 43 USC section 1473a) and cooperative agreements for living exhibits and demonstrations (under 16 USC section 1a-2(g)) for the reasons discussed above. Currently, two such agreements are in force, the Kīpahulu Ohana agreement and the Hawaiʻi Natural History Association agreement (see the "Special Designations, Mandates and Administrative Commitments" section later in this chapter).

BRIEF DESCRIPTION OF THE PARK

Haleakalā National Park is located on the eastern side of the island of Maui, the second largest island in the Hawaiian chain (figure 1). The park preserves part of Haleakalā Volcano and Native Hawaiian ecosystems in perpetuity. It encompasses 33,222 acres, of which 24,719 acres are designated wilderness (74% of the park) (figure 2). The park extends from sea level to 10,023 feet in elevation. This elevation change within a few miles, coupled with the wide range of precipitation (40 to 400 inches annually), creates a widely diverse collection of vegetation zones, including beach and coastal communities, lowland and mountain rainforests, mountain cloud forests, montane bogs and dry forest remnants, mesic shrublands, subalpine grasslands and shrublands, and sparsely vegetated alpine aeolian cinder fields. The northern and eastern slopes of Haleakalā and the rainforests of the Kīpahulu Valley are one of the richest botanical regions in Hawai‘i. Surveys have documented 370 native species in the park, about 90% endemic to the Hawaiian Islands and 25% specific to Maui (NPS 1995a). The ecological diversity of the park is recognized by its designation as an International Biosphere Reserve.

FIGURE 1. ISLAND OF MAUI AND HALEAKALĀ NATIONAL PARK

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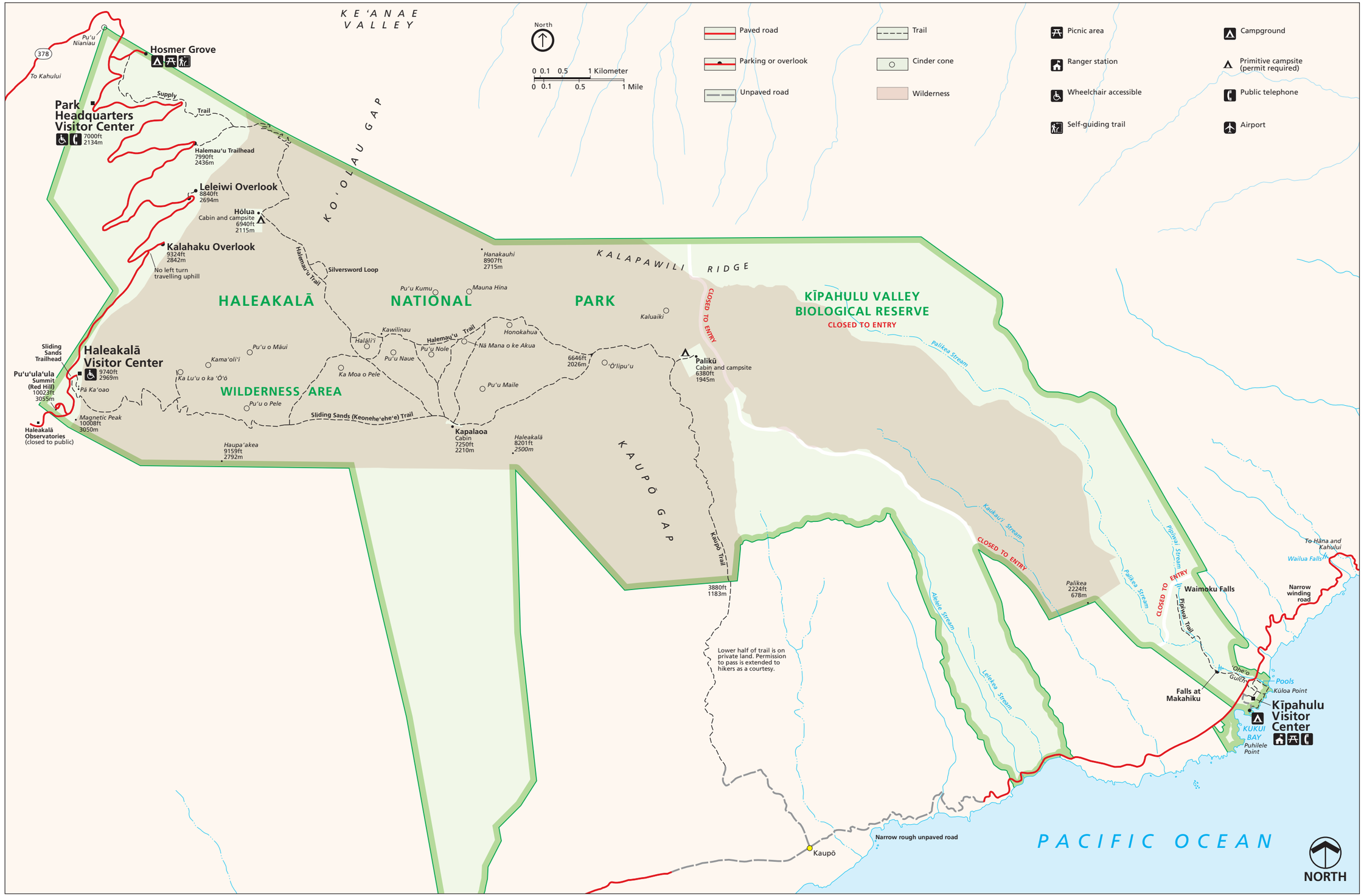

Figure 2. Haleakalā National Park

Haleakalā National Park
United States Department of the Interior • National Park Service

1

There are two primary visitor attractions within the park—the summit and the Kīpahulu coastal area (see figures 3 and 4). Each area has unique natural and cultural resources including a variety of fragile ecosystems, and many rare and endangered species. The summit area includes the outstanding volcanic landscape of the upper slopes of Haleakalā, and the Kīpahulu coastal area protects Kīpahulu Valley and the scenic stream system ending at ‘Ohe’o Gulch.

In addition to supporting a diversity of unique and sensitive natural resources, Haleakalā National Park is of special interest to Native Hawaiians and is considered a sacred place (NPS 2008e).

The park contains numerous significant Hawaiian archeological sites and features, as well as historic features that date to the arrival of missionaries on the island.

Approximately 1.2 million visitors annually come to Haleakalā National Park to experience the natural and cultural wonders the park was designated to protect; between 15% and 30% of these visitors come on commercial tours. The summit[1] of Haleakalā Volcano (Pu‘u‘ula‘ula or Red Hill) is the highest point on Maui and attracts people from around the world to view the sunrise, sunset, and night sky. From this rocky, sparsely vegetated vantage point, other islands of the Hawaiian chain can be seen.

Approximately 70% of all visitors surveyed at the summit and headquarters / visitor center attended the sunrise (University of Vermont 2005). In addition to these activities, guided hiking and horseback riding are available in the area, as are astronomy-oriented activities.

The Kīpahulu coastal area is set in a tropical rainforest, atop a seaside cliff. The setting provides visitors with hiking opportunities, activities oriented around cultural resources—people have interacted with the land here for hundreds of years—and the chance to experience the streams in ‘Ohe’o Gulch. Guided hiking and horseback trips are also provided at this end of the park.

The park wilderness includes 38.2 miles of trails that lead hikers and horseback riders through ecosystems that range from arid to lush. Two campgrounds and three public use historic cabins are located in developed enclaves within the designated wilderness area. These facilities are reserved on a first-come, first-served basis for the public.

Haleakalā was established on August 1, 1916, as part of Hawai‘i National Park. The park included lands on both the islands of Hawai‘i and Maui (39 *United States Statutes at Large* (Stat.) 432). The establishing legislation for the park directed that its resources be preserved from injury and be retained “in their natural condition as nearly as possible” (16 USC 394). The Maui portion of the park was established as a separate national park system unit in July 1961 (74 Stat. 881; 16 USC 396b).

1 The term *summit* in this plan refers to both the Haleakalā Visitor Center and Red Hill.

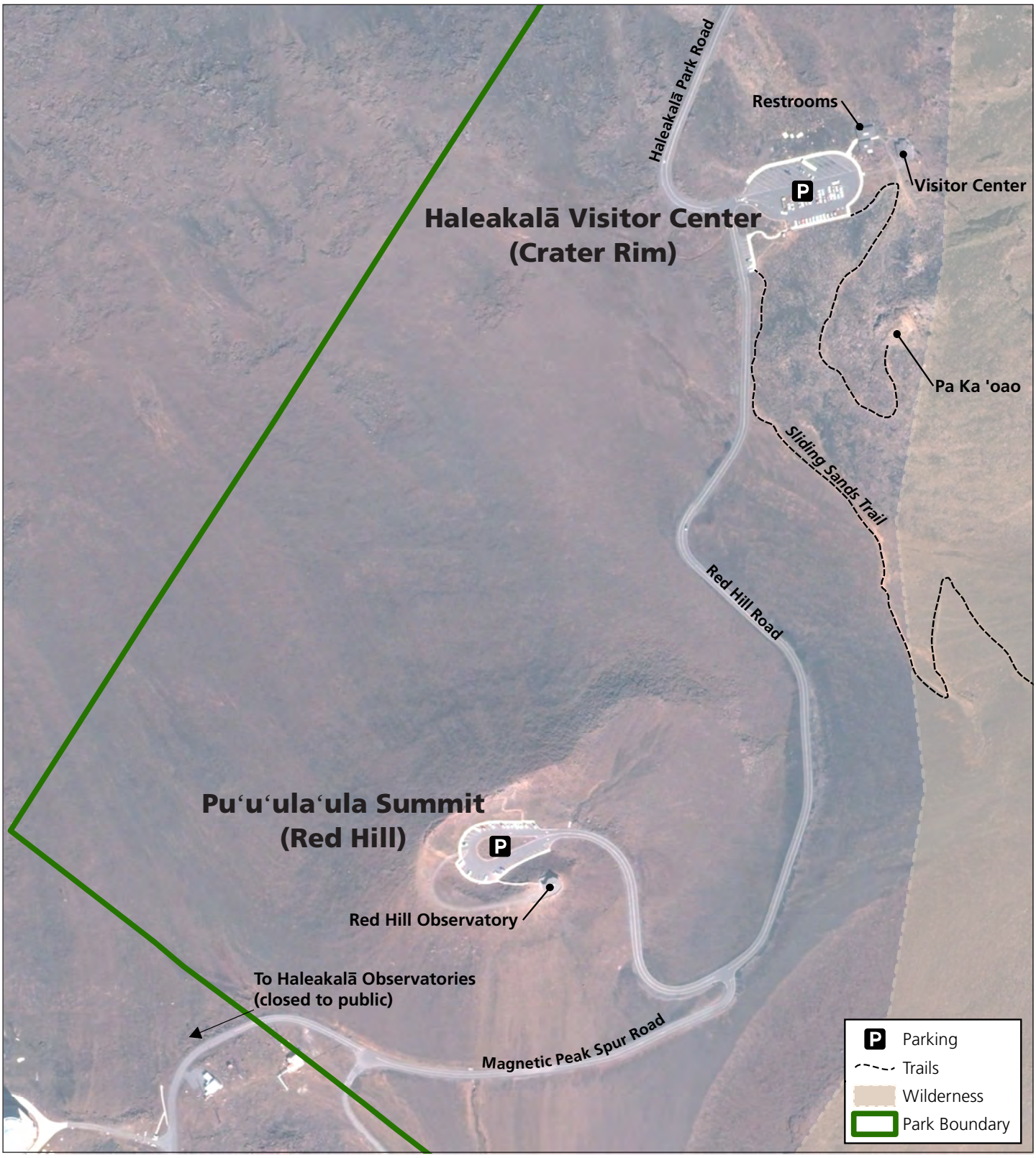

Figure 3. Haleakalā Summit Area

Haleakalā National Park

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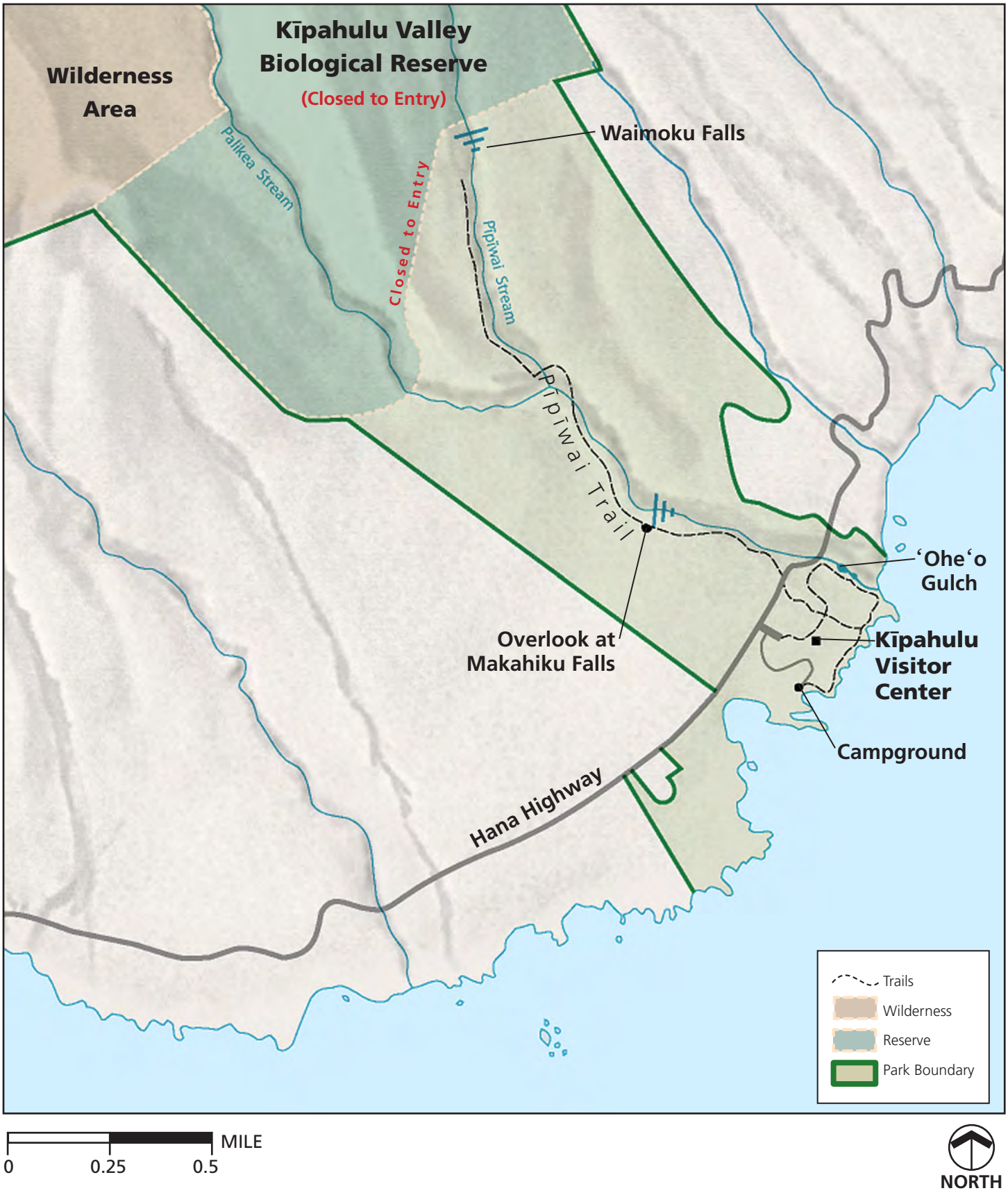

Figure 4. Kīpahulu

Haleakalā National Park

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GUIDANCE FOR THE PLANNING EFFORT

PARK PURPOSE, SIGNIFICANCE, AND MISSION STATEMENTS

A park's purpose, significance, and mission underlie all decisions made about a park. All management actions should help achieve and/or be consistent with these statements. The park's general management plan (NPS 1995) identified the park purpose, significance, and mission statements.

Park Purpose

Purpose statements are derived from a park's authorizing legislation and reaffirm the reasons for which the area was established as a unit of the national park system. Purpose statements provide the foundation for all decisions regarding the management and use of the park.

The 1916 law creating Hawai'i National Park, including Haleakalā, stated the park was established as a

> public park or pleasure ground for the benefit and enjoyment of the people of the United States . . . and to provide preservation from injury of all timber, birds, minerals deposits, and natural curiosities or wonders within said park, and their retention in their natural state as nearly as possible (39 Stat. 432; 16 USC 391).

The NPS Organic Act established the National Park Service. The purpose of the National Park Service is to promote and regulate the use of federal areas known as parks, monuments, and reservations. Thus, the purpose of Haleakalā National Park is also reflected in a key provision of the NPS Organic Act

> to conserve the scenery and the natural and historic objects and wild life therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations.

Significance of Park

Significance statements describe the distinguishing resources and characteristics that set a park apart in a regional, national, and sometimes international context. These statements assist managers with making decisions that preserve the resources and values necessary to accomplish the park's purpose.

The *Haleakalā National Park Statement for Management* (NPS 1997) identified the following significance statements for the park:

- represents highly diverse volcanic, geological, and biological habitat ranging from over 10,000 feet elevation (highest point on Maui, third-highest in the state) to sea level
- contains one of the few relatively intact remnants of a unique and disappearing Hawaiian biota found no other place in the world and designated as part of the biosphere reserve system
- includes the remote, pristine Haleakalā Wilderness acclaimed for its attributes of beauty, serenity, and tranquility and where visitors can temporarily retreat from civilized society
- contains abundant archeological and historical remains of the pre-European contact Hawaiian civilization
- is of religious and cultural importance to the Native Hawaiian community

- has many historical and cultural sites listed on the National Register of Historic Places
- is an important component in East Maui Watershed Partnership whose preservation is the objective of a multiorganizational effort
- is Maui's number one tourist destination, an integral part of the tourist-based economy of the island
- has a class I air quality designation
- provides outdoors recreational and educational opportunities unavailable elsewhere on Maui to the public

Park Mission

Mission statements describe the desired future conditions for a park that exist when the legislative intent is being met.

The mission of Haleakalā National Park is as follows:

> Haleakalā National Park is an International Biosphere Reserve that supports native ecosystems in a maturing volcanic landscape. As stewards of this park, we will incorporate Native Hawaiian protocols and generational knowledge for the perpetuation of cultural resources, and implement traditional and modern methods for the preservation of natural resources. With partnerships and the community, we will protect, manage, and interpret these unique resources for the education, experience, and inspiration of all peoples and future generations (NPS 2011b).

SPECIAL DESIGNATIONS, MANDATES, AND ADMINISTRATIVE COMMITMENTS

Several mandates, designations, and administrative commitments affect planning for and management of Haleakalā National Park.

In 1976, Congress enacted Public Law (PL) 94-567, which designated 24,719 acres of Haleakalā National Park as wilderness. As a result, the National Park Service is mandated to manage this area to protect its wilderness character.

In 1980, Haleakalā National Park was designated an International Biosphere Reserve. Biosphere reserves are an international conservation designation given by United Nations Educational, Scientific, and Cultural Organization (UNESCO) under its Programme on Man and the Biosphere (MAB). These reserves are intended to fulfill three basic functions: (1) to contribute to the conservation of important biological resources; (2) to foster economic and human development that is sustainable; and (3) to provide support for research, monitoring, education, and information exchange related to conservation and development issues.

The National Park Service has entered into a series of agreements with private, nonprofit organizations to provide living exhibits and interpretative programs in the park and to sell interpretative materials and products of on-site demonstrations. These activities are considered to be visitor services (36 *Code of Federal Regulations* (CFR) 51.1), but because of the nature of the products and services offered as well as of their provider, these activities are authorized by legal authorities that only are available for certain educational products and services provided by nonprofit organizations. These authorities include cooperating association agreements (under 16 USC 1-4, 6, 17j-2(e) and 43 USC 1473a) and general agreements for living exhibits and demonstrations

(under 16 USC 1a-2(g)). Currently there are two such agreements in effect, with the Kīpahulu ʻOhana and the Hawaiʻi Pacific Parks Association (HPPA).

Kīpahulu Ohana agreement: The National Park Service administers the site known as Kapahu Farm, a cultural resource, within the Kīpahulu area of Haleakalā National Park, and has and wishes to continue managing the farm in a manner that perpetuates and interprets traditional Native Hawaiian culture including agriculture, aquaculture, arts, crafts, traditional structures, medicine, ceremonial practices, and land management practices. The National Park Service has authorized a private nonprofit organization with expertise in Native Hawaiian cultural demonstrations and in traditional Native Hawaiian agriculture and aquaculture practices to provide living exhibits and interpretive programs at the Kapahu Farm. The National Park Service has entered into a series of agreements (the most recent of which is for the term 2012–2015 with the Kīpahulu ʻOhana to provide these services. The Kīpahulu ʻOhana is a nonprofit organization founded by Native Hawaiian residents from Kīpahulu. It is dedicated to the cultural sustainability of the Kīpahulu District on Maui by preserving and enhancing traditional Native Hawaiian cultural practices through educational programs and demonstrations concerning traditional agriculture and aquaculture features and practices, Native Hawaiian culture, and native Polynesian species of flora.

HPPA agreement: The Hawaiʻi Pacific Parks Association, a private nonprofit organization, has been authorized by the National Park Service to sell interpretive materials and conduct interpretive programs in the park. There have been a series of agreements with this organization. In addition, the association has been authorized through a concession contract to sell convenience items for the benefit of the visitor. The current concession contract runs from January 1, 2006, through December 31, 2015.

Due to their unique legal authority and limited application, cooperating association agreements and living exhibits, and demonstration agreements are not addressed by this commercial services plan. However, concession contracts are included.

GUIDANCE FOR COMMERCIAL SERVICES IN NATIONAL PARKS

General

National parks are special places, saved by the American people so that all may experience the country's natural and cultural heritage. The national parks movement of the mid-19th century was fueled by a determination to save beautiful and historic spots in America, in part to keep them from being populated with hotels, curio shops, and amusements. Overcommercialization and development can spoil the very character of the places visitors come to see. Yet, some kinds of commercial activities are appropriate in national parks (and sometimes necessary). They help visitors enjoy natural and cultural wonders to which they might not otherwise have access. Often commercial providers help protect park resources too.

Commercial services involve the buying and selling of goods and services and are a business activity. Within the national park system, there are two general categories of commercial services: (1) those offered to the public (as visitor services); and (2) those that provide a specific benefit to an identifiable beneficiary and to the government but not to the public at large. There are different legal prerequisites for and different legal conditions that apply to commercial services depending on the purpose and type of the activity involved. However, all commercial service legal authorizations share one common attribute—a fee or charge is assessed for the services involved (36 CFR 51.3).

Commercial services may take place within a unit of the National Park Service only under certain defined and limited circumstances. The national park system has been established and is preserved and managed for the benefit and inspiration of the people of the United States. The NPS Organic Act and the NPS General Authorities Act of 1970, as amended, (16 USC 1, 1a-1) mandate that park resources and values are to be conserved and are to be provided for enjoyment in such manner and means as will leave them unimpaired for the enjoyment of future generations unless a particular law directly and specifically provides otherwise.

Consistent with these fundamental principles regarding management of the national park system, it is unlawful to engage in or to solicit any business in an area of the national park system, except in accordance with the provisions of a permit, contract, or other written agreement with the United States unless specifically authorized under special regulations applicable to a park area (36 CFR 5.3).

Commercial activities may be authorized through a range of legal authorities using a variety of different permits, contracts, and other authorizations, depending on the type and location of the activity involved. Examples of authorizations used for visitor services (that is, accommodations, facilities, and services for public use and enjoyment of units of the national park system) include concession contracts and commercial use authorizations:

- Concession contracts may be used to authorize concessioners to provide accommodations, facilities, and services that the National Park Service has determined are necessary and appropriate for public use and enjoyment of a park unit and are consistent to the highest practicable degree with the preservation and conservation of the resources and values of that unit. Authorized accommodations, facilities, and services are provided for a fee or charge to the visitor by the concessioner, and the concessioner's rates and charges to the public are subject to approval by the National Park Service. The contracts must provide a reasonable opportunity for profit for concession operators. The concessioner pays the government, through the vehicle of a franchise fee, for the privilege of operating the concession business. In addition, the concessioner is required to maintain, as an expense of its business, the government-owned facilities and equipment that have been assigned to it for use in providing services to the visiting public. A public solicitation process is used (unless strictly limited exceptions apply) to award concession contracts. Lodges and restaurants within parks are operated under concession contracts.

- Commercial use authorizations may be used to authorize visitor services under somewhat different criteria than a concession contract. For a commercial use authorization, the visitor service must be determined by the National Park Service to have minimal impact on resources and values of the park unit and be consistent with the purpose for which the unit was established and with all applicable management plans and park policies and regulations. Additionally, the National Park Service is prohibited by law from issuing more commercial use authorizations than are consistent with the preservation and proper management of park resources and values. Only three types of operations are eligible for commercial use authorizations: (1) commercial operations generating not more than $25,000 annually from services originating and provided solely within the national park system unit; or (2) commercial operations originating or terminating outside of the boundaries of the national park system unit; or (3) uses by an appropriate children's camp, an outdoor club, or a nonprofit institution not deriving taxable income from the authorized use. A fee must be paid to the government for issuance of a commercial use authorization, at a minimum to cover associated management and administrative costs. The term of a commercial use authorization may not be more than two years in duration. An example of a commercial use authorization would be astronomy tours.

Services providing a specific benefit to an identifiable beneficiary and to the government but not to the public at large may be authorized, for example, by leases and special use permits:

- Leases may be granted by the National Park Service for the use of buildings, lands associated with such buildings, and historic land located within the boundaries of units of the national park system under certain conditions. A lease may be used only for activities consistent with the purposes of the park area; may not result in degradation of the purposes and values of that park area; and must be compatible with NPS programs. Leases may not authorize activities subject to authorization through a concession contract, commercial use authorization, or similar instrument. A public solicitation process is used to award leases other than for certain nonprofit or governmental use of the property contributing to the purposes and programs of the park area or for 60 days or less in duration. The lease must require payment of rent to the government equal to or higher than the property's fair market value rent, taking into account any restrictions the National Park Service may place on the use of the leased property and any requirements for its rehabilitation and maintenance.

- Special use permits may be used to authorize activities that provide a benefit to an individual or group rather than to the public at large and require some degree of management by the National Park Service to protect park resources and the public interest. Special use permits are, in effect, a license and, as such, are revocable. Additionally, special use permits may not violate or circumvent any relevant law and may not be issued for a visitor service or for activities subject to authorization by a lease. The National Park Service, depending on the circumstances, may recover costs related to special park uses or charge fees for the use of park lands and facilities. Special use permits typically are used to authorize activities such as rights-of-way, commercial filming, weddings, festivals, and other special events.

The National Park Service must determine what types and levels of commercial activities are permissible under applicable laws and regulations. At a minimum, all commercial activities must operate in a manner that is consistent with the mission of the park and should provide high quality visitor experience while protecting important natural, cultural, and scenic resources. Other requirements may also apply. For example, the NPS Concessions Management Improvement Act of 1998 limits the development of concession services to those that are necessary and appropriate for public use and enjoyment of the park unit and that are consistent to the highest practicable degree with the preservation and conservation of the resources and values of the unit. More information concerning the concepts of necessary and appropriate, and how they relate to the commercial services plan, is presented in chapter 2.

Laws, Regulations, and Policies

Numerous laws, regulations, and policies guide the management of commercial services in national park system units and the development and implementation of commercial services plans. Commercial services plans must comply with these laws, regulations, and policies and must be consistent with the management philosophies found in the park's general management plan. Examples of the primary legal and regulatory mandates are summarized below.

NPS Organic Act

In the NPS Organic Act, Congress directed the National Park Service to manage parks

> to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

Congress supplemented and clarified these provisions through enactment of the NPS General Authorities Act and through enactment of an amendment to the act, which states, in part,

> [t]he authorization of activities . . . shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress. (16 USC 1a-1).

The NPS Organic Act is silent as to the specifics of park management and leaves the National Park Service broad discretion in determining which management approaches best achieve the NPS Organic Act mandate. Simply put, the National Park Service is "empowered with the authority to determine what uses of park resources are proper and what proportion of the park resources is available for each use" (*Bicycle Trails Council*

of Marin v. Babbitt, 82 F.3d 1445, 1454 (9th Cir. 1996)).

While the National Park Service has management discretion to allow impacts within parks, that discretion is limited by the statutory requirement that the National Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. These congressional mandates ensure that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities to enjoy them. Consistent with the NPS Organic Act and other applicable laws, any commercial services, including motorized, bicycle, and horseback traffic, must be compatible with the park's natural resources, cultural resources, threatened and endangered species, and wilderness values.

NPS Concessions Management and Improvement Act of 1998

The 1988 Concessions Act (title IV, PL 105-391; 16 USC section 5901 note, 5951 et seq.) contains two separate types of authority for commercial visitor services in units of the national park system—concession contracts and commercial use authorizations. The 1988 Concessions Act mandates the uses of concession contracts for authorizing any visitor services except as provided through a commercial use authorization or as otherwise authorized by law. The 1998 Concessions Act also places significant limitations on the types and kinds of accommodations, facilities, and services that may be authorized by concession contracts. Such accommodations, facilities, and services must be "necessary and appropriate for public use and enjoyment" of the unit in which located and must be "consistent to the highest practicable degree with the preservation and conservation of the resources and values of the unit" (16 USC section 5951).

The 1998 Concessions Act also authorizes the use of a commercial use authorization for certain types of visitor services (16 USC section 5966). Commercial use authorizations must meet a different statutory criteria than that set in concession contracts. Commercial use authorizations may be issued for visitor services that have minimal impact on park resources and values and that are consistent with the purposes for which the park unit was established and with all applicable management plans and park policies and regulations.

Commercial use authorizations must also provide for the payment to the National Park Service of a reasonable fee to be used, at a minimum, to recover associated management and administrative costs. Commercial use authorizations, as a matter of statute, must require that authorized services be accomplished in a manner consistent to the highest practicable degree with the preservation and conservation of park resources and values. A further legal restriction is placed by 16 USC section 5996—no more commercial use authorizations may be issued than are consistent with the preservation and proper management of park resources and values. The term of a commercial use authorization may not exceed two years, and no preferential right of renewal or similar provisions for renewal may be provided. (Commercial use authorizations are discussed in more detail later in this section.)

The statute also states that a commercial use authorization may not provide for the construction of structures, fixtures, or improvements on federally owned lands within a park.

National Environmental Policy Act

The National Environmental Policy Act requires federal agencies to assess the environmental effects of a proposed action and engage the public in the analyses of environmental impacts before making decisions affecting the human environment. When the National Park Service considers taking a major federal action, it prepares an environmental assessment to assess the

impacts of the proposed action and to determine if an environmental impact statement must be prepared. The environmental assessment that is included in this document analyzes the environmental consequences of various alternatives for commercial services, including the NPS preferred alternative. If, based on the environmental assessment analysis and public comments, the National Park Service determines that the preferred alternative would not significantly affect the human environment, and then the National Park Service would prepare a "Finding of No Significant Impact" (FONSI). Conversely, if the proposed action would likely cause significant effects on the human environment, then the National Park Service prepares an environmental impact statement.

Code of Federal Regulations

The national park system has been established and is preserved and managed for the benefit and inspiration of the people of the United States. Congress has mandated that park resources and values are to be conserved and are to be provided for enjoyment in such manner and means as will leave them unimpaired for the enjoyment of future generations, unless a particular law directly and specifically provides otherwise.

To enforce these fundamental management principles, the National Park Service has adopted a number of regulations that apply to activities within NPS administered areas, including to business activities. These regulations are published in 36 CFR Parts 1–199 and are available at http://www.gpo.gov/fdsys/. The regulations include a number of general restrictions that may affect business activities, including for example a prohibition on engaging in business except in accordance with a permit, contract, or other written agreement unless specifically authorized under special regulations (36 CFR 5.3) and significant restrictions on the display and distribution of commercial notices or advertisements (in 36 CFR 5.1). In addition, the regulations set out a number of specific requirements for NPS concessioners, including applicable labor standards (in 36 CFR Part 8) and provisions for the solicitation, award, and administration of concession contracts (in 36 CFR Part 51).

For the purposes of this plan and environmental assessment, the term *bicycle* is as defined in 36 CFR 1.4:

> Bicycle means every device propelled solely by human power upon which a person or persons may ride on land, having one, two, or more wheels, except a manual wheelchair.

NPS Management Policies 2006

The NPS *Management Policies 2006* is the basic servicewide policy document of the National Park Service. It provides information on NPS policy and required and/or recommended actions covering park planning, natural and cultural resource management, wilderness management, use of the parks, and park facilities, among other topics. Section 10 addresses commercial visitor services authorized through concession contracts (section 10.2) and commercial use authorizations (section 10.3). The policies state (among other things)

> [p]ublic accommodations, facilities, and services must be consistent to highest practicable degree with the preservation and conservation of park resources and values.

NPS *Management Policies 2006* also provides several other directions of relevance to this commercial services plan. Section 6.4.4 addresses commercial services in wilderness. Sections 5.3.2 and 8.5 address use of national park system units by traditionally associated groups such as Native Hawaiians. Park managers are directed to protect sacred resources to the extent practicable and in a manner consistent with the goals of traditionally associated groups. To the extent feasible and allowable by law,

accommodations will also be made for access to and the use of sacred places when interest is expressed by Native Hawaiians.

Section 7.5.7 addresses sales by cultural demonstrators of self-made handicrafts (such as the items sold by Kīpahulu Ohana, Inc.). Section 8.12 provides guidance on leases for the use of park property.

Director's Order 32: Cooperating Associations

This interim director's order describes the policy and procedural requirements for relationships between the National Park Service and cooperating associations. It includes such topics as cooperating association agreements, association responsibilities, and sales and interpretive activities.

NPS Commercial Use Authorizations: Interim Guidelines

In 2005, the National Park Service issued interim guidelines regarding implementation of the statutory requirements for commercial use authorizations. (These guidelines are intended solely as guidance for employees of the National Park Service. They are not rulemaking and do not create or confer any legal rights, privileges, or benefits that may be enforced in any way by private parties.) Among other things, these guidelines provide for use of a competitive process if the number of commercial use authorizations to be issued for a particular type of commercial service is limited.

NPS GUIDELINES ON IMPAIRMENT OF NATIONAL PARK RESOURCES

In addition to determining the environmental consequences of implementing the agency preferred and other alternatives, NPS *Management Policies 2006,* 1.4 requires a determination that no implementation of any actions would impair a park's resources and values.

The fundamental purpose of the national park system, established by the NPS Organic Act and reaffirmed by the NPS General Authorities Act is conservation of park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on cultural and natural resources and park values. However, these laws also afford park managers discretion to allow impacts to occur when this is necessary and appropriate to fulfill the express purposes of the park. That discretion is constrained by the statutory requirement that the National Park Service must leave resources and values unimpaired unless a particular law directly and specifically provides otherwise.

The prohibited impairment is any impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values (NPS 2006c). Whether an impact has such a result depends on the particular resources that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question combined with other impacts.

As further noted in NPS *Management Policies 2006* section 1.4.7, in addition to the above potential environmental consequences, the NPS manager also takes into consideration consultations required under section 106 of the National Historic Preservation Act (NHPA), relevant scientific information, pertinent information from subject matter experts, and results of related civic engagement and public involvement activities.

The superintendent's determination of nonimpairment for the alternative selected following consideration of all public review comments will be provided as an attachment to the approved decision document (anticipated to be a "Finding of No Significant Impact").

PLANNING ISSUES, CONCERNS, AND IMPACT TOPICS

PLANNING ISSUES AND CONCERNS TO BE ADDRESSED

NPS staff, the public, commercial services providers, representatives from the state historic preservation office, and the park's Kūpuna (Hawaiian elders) groups identified several issues and concerns during scoping (early information gathering) for this plan. An *issue* is defined as an opportunity, conflict, or problem regarding the use or management of public lands. Comments were solicited at public meetings and through planning newsletters (see chapter 5 "Consultation and Coordination").

Comments received during scoping focused on impacts of commercial services on cultural and natural resources, Native Hawaiians, public health and safety, visitor use and experience, and park management activities. The alternatives in the commercial services plan address these issues within the context of the laws, NPS regulations and policies, and the park purpose, significance, mission goals, and special mandates.

Five major issues and concerns are addressed by this plan. It is important to keep in mind that many of the impacts discussed below can be attributed to commercial services patrons and to other park visitors. However, this plan focuses on only the impacts of commercial services.

Impacts to Natural Resources

Concerns were raised that commercial service uses have contributed to adverse impacts on natural resources in the nonwilderness portion of the park. These impacts are primarily occurring at the summit area and the Kīpahulu area. The horseback tours that take place in Kīpahulu have contributed to trail and road degradation and do not take place in the wilderness (NPS 2006b). There are also concerns that commercial tour groups may be contributing to erosion of soils, trampling of vegetation, the introduction of nonnative invasive species (plants and insects), and disturbance of threatened and endangered species and their habitat. Commercial tours also have contributed to degradation of natural soundscapes and an increase in trash production.

Impacts to Cultural Resources

All of Haleakalā volcano is considered sacred by Native Hawaiians. Concerns have been raised that high levels of commercial and noncommercial use in concentrated areas of the summit, as well as other park areas, will interfere with traditional cultural uses and increased negative perceptions of the park by Native Hawaiians. It was noted in the scoping meetings that the sense of quiet or silence is critical to maintain the essential nature of Haleakalā and for private traditional ceremonies. Native Hawaiians expressed concerns that maintaining the current level or increasing the noise level from motor vehicles, tours, and other human activities would inhibit most Hawaiians from continuing traditional practices. Opportunities for Native Hawaiian practitioners to conduct ceremonies in privacy and solitude would be further diminished.

Crowding and Visitor Conflicts

There are concerns that tour groups have contributed to crowding and congestion in high use areas, which has adversely affected visitor experience in the park. Conflicts have occurred between guided tour groups and individual visitors for parking spaces and for standing and viewing spaces. For example, parking lots are full and travel lanes become

congested in the summit area at peak sunrise visitation hours. Large crowds in the area are believed to have detracted from some visitor experience of the sunrise event as well as visitor understanding of this sacred place. In the Kīpahulu area, the quality of the visitor experience also has been greatly diminished by overcrowding. Tour vans and buses of various sizes vie for limited space in the parking area, often resulting in traffic congestion and frustration for noncommercial visitors.

Public Health and Safety

Certain activities can pose a danger to public health and safety. Prior to implementation in 2005 of the *Commercial Use at Sunrise: Interim Operations Plan*, demand for commercial as well as private vehicle parking was so intense that parking was occurring outside of marked stalls, in traffic lanes, on road shoulders, and in other locations. As a result, emergency access by ambulance, law enforcement, and fire vehicles was impeded. The resulting congestion at the Haleakalā summit during sunrise created additional public health and safety and visitor protection concerns involving overflow into critical habitat areas, off-trail areas, and potentially unsafe cliff areas. Prior to the October 2007 safety stand-down of commercially guided downhill bicycle tours in the park, serious accidents (including visitor fatalities) occurred during those commercial tours. Although these activities have been suspended, other commercially provided activities may expose visitors to environmental hazards or specific risks associated with the activity (e.g., recreating in high altitudes on the mountain; conducting activities in extreme weather conditions, including heavy rains, flooding, and high winds).

Insufficient/Inaccurate Information Provided by Some Commercial Services Providers

Although many commercial services providers take pride in providing accurate information to their clients, insufficient or inaccurate information is being given to visitors by some commercial services providers. These providers are supplying marketing information to the public that is not consistent with the park's message or NPS interpretive standards. Some patrons have not received information regarding the inclusion of this area in the national park system and the role and mission of the National Park Service in managing the area. Patrons of some providers also have not received adequate or correct information about the nature and importance of park resources, and about appropriate and safe behavior and use of park areas such as at the summit and the streams at Kīpahulu. As a result, some commercial services patrons are believed to have contributed to resource impacts and to impacts on the experience of other visitors.

PLANNING ISSUES AND CONCERNS NOT BEING ADDRESSED IN THIS PLAN

Commercial Air Tours

Commercial air tours, primarily by helicopters, have occurred since the 1980s. Ten air tour operators (seven helicopter operators and three fixed-wing operators) are permitted to fly aircraft over the park by the Federal Aviation Administration (FAA). Concerns have been expressed about noise impacts of these flights on the park's wilderness values, wildlife, ground visitor experiences, local communities, and Native Hawaiian traditional practices and properties. In 2000, Congress passed the National Park Air Tour Management Act (PL 106-181), which requires the National Park Service and Federal Aviation

Administration to develop an air tour management plan for each park that has commercial air tours within 0.5 mile of their boundary, such as Haleakalā National Park. Thus, the air tour management plan will address the concerns regarding air tours in the park and determine the appropriate number of flights and routes of air tours over the park. Work on the Haleakalā National Park air tour management plan began in February 2003 (E. Gordon, Haleakalā National Park, pers. comm., December 2, 2010).

Climate Change

Climate change is a concern for the Hawaiian Islands, including Haleakalā National Park. Average annual temperatures in the Pacific Islands have increased by about 0.5ºF (0.25ºC) over the last century. The islands are very likely to experience increasing air and ocean temperatures and changes in sea level, posing concerns for freshwater resources, public health and safety, ecosystems and biodiversity, and sea-level variability (http://classicinside.nps.gov/documents/USGCRP-Islands-2000.pdf). However, the full extent of the effects of climate change on resources and visitor experiences is not known.

This plan notes the need for NPS staff and commercial service providers to work together to address sustainability and climate change (see the previous section). However, climate change is a far-reaching, long-term issue that will affect Haleakalā National Park, its resources, visitors, and management, and is beyond the scope of this commercial services plan and its 10–15 year time frame. With specific regard to commercial services, the proportion of greenhouse gases resulting from commercial service providers in the park compared to the emission of greenhouse gases on Maui is believed to be small. No new facilities or new activities are being proposed in the alternatives in this plan that are believed would measurably increase the park's carbon footprint. Indeed, encouraging visitors to take tours rather than drive their own vehicles into the park should help reduce greenhouse gas emissions. Furthermore, by instituting new management directions for commercial services and reducing congestion at the summit at sunrise, the emission of greenhouses gases would be expected to decline. Overall, it is expected that the commercial services plan will have a negligible impact on greenhouse gases and climate change. Thus, climate change is not addressed in detail in this plan.

Impacts on Natural and Cultural Resources in Wilderness

Concerns were raised during scoping for this plan about impacts to natural and cultural resources from commercially guided hiking and horseback tours in the Haleakalā Wilderness area. No actions are being proposed in this plan that would affect natural and cultural resources in the wilderness area.

IMPACT TOPICS SELECTED FOR ANALYSIS

An important part of planning is seeking to understand the consequences of making one decision over another. To this end, NPS plans are typically accompanied by an environmental document. Environmental assessments, such as this document, identify the anticipated impacts of possible actions on resources and on park visitors and neighbors. Impacts are organized by topic, such as impacts on the visitor experience or impacts on vegetation. Impact topics serve to focus on the environmental analysis and to ensure the relevance of impact evaluation. Impact topics identified for the "Haleakalā National Park Commercial Services Plan / Environmental Assessment" were identified based on federal laws and other legal requirements, CEQ guidelines, NPS management policies, staff subject-matter expertise, and issues and concerns expressed

by the public and other agencies early in the planning process (see previous section). The planning team selected the impact topics for analysis based on the potential for each topic to be affected by the alternatives.

Impact topics are retained if there could be appreciable impacts from the actions of the alternatives considered. The following topics were selected for analysis. A brief rationale for selection of each impact topic is also provided. Chapter 4, "Environmental Consequences," contains a more detailed description of each impact topic to be affected by the actions described in the alternatives.

Natural Resources

Soils. Soil resources in national parks are managed in accordance with the NPS Organic Act of 1916 and NPS *Management Policies 2006*. This topic was retained because use of trails, parking lots, and viewing areas by commercial tour groups has contributed to erosion and soil compaction in some areas.

Vegetation. Vegetation in national parks is managed in accordance with the NPS Organic Act and NPS *Management Policies 2006*. This topic was retained due to the effects commercial activities may be having on the park's vegetation, such as trampling of vegetation and spread of invasive species along trails, parking lots, and viewing areas.

Special Status Species. The Endangered Species Act of 1973 (16 USC section 1531 et seq.) and its implementing regulations require an evaluation of the effects of proposed actions on all federally listed endangered and threatened species and their designated critical habitats with a potential to be affected by the action. Haleakalā National Park is home to and provides habitat for a variety of federally threatened, endangered, and candidate plants and animals. Fifty such species have been documented in the park (see appendix E). Actions considered in this plan could potentially affect four listed species: Haleakalā silversword, nohoanu, Hawaiian petrel, and Hawaiian goose.

- **Haleakalā silversword** (*Argyroxiphium sandwicense* ssp. *Macrocephalum*), a threatened plant, with designated critical habitat, was retained for full evaluation because commercial tour horses may browse or nibble the plant along the Sliding Sands Trail and visitors who approach the plant to observe or photograph may compact soils around the plant's shallow roots.
- **Nohoanu** (*Geranium multiflorum*)**,** an endangered plant, with designated critical habitat, was retained for full evaluation because it is found in proximity to areas near the crater that would be used by commercial service patrons.
- **Hawaiian goose,** or **Nēnē** (*Branta sandvicensis*), a threatened avian species, was retained for full evaluation because they are at risk of collision with commercial tour vehicles, feeding by commercial tour patrons, and the potential for disturbance of nests and goslings.
- **Hawaiian petrel or ʻuaʻu**, (*Pterodroma sandwichensis*) an endangered avian species, was retained for full evaluation because there is potential that commercial tours could affect these birds, such as lights from tour vehicles driving at night.

Forty-one federally listed endangered, threatened, or candidate species were dismissed from full analysis because they are not in areas that would be affected by commercial tours considered in this plan and there is no potential for impact to these species (see appendix E).

Five other species were not retained for analysis in this document because although these species may occur in areas affected by

tour groups, there is little or no information on the species and whether guided or unguided visitors are affecting them. These species are

- Hawaiian hoary bat (*Lasiurus cinereus semotus*), an endangered mammal
- Pacific Hawaiian damselfly (*Megalagrion pacificum*), a federal candidate insect species
- Koʻokoʻolau (*Bidens micrantha ssp.kalealaha*), an endangered plant
- Hawaiian red-flowered geranium (*Geranium multiflorum*), an endangered plant
- Hilo ischaemum (*Ischaemum byrone*), an endangered plant

The ongoing programmatic section 7 consultation between the National Park Service and U.S. Fish and Wildlife Service (USFWS) will address in more detail these species and include mitigation measures that would apply to all of the alternatives in this document. (See "Relationship of Other Planning Efforts to this Plan" later in Chapter 1 for more on the programmatic section 7 consultation.)

Note: If the mitigation measures would affect the proposed commercial services in ways that were not foreseen, then this plan would be modified as appropriate.

Soundscapes. NPS *Management Policies 2006* (4.9) require NPS managers to strive to preserve the natural quiet and natural sounds associated with the physical and biological resources (for example, the sounds of birds and flowing water). The natural soundscape (i.e., natural quiet) in Haleakalā National Park is a special resource to many park visitors. The preservation of natural quiet at Haleakalā National Park has been identified as a high priority (NPS 1995b). The soundscape has been affected in popular use areas, such as at the summit, by visitors including clients of commercial services providers. Implementing the action alternatives could alter the soundscape in one or more areas of the national park. Thus, this topic was retained for analysis.

Cultural Resources

Archeological Resources. This topic was retained because these resources are possibly being affected by visitors, including those who are part of commercial services operations. For example, visitors may create informal trails outside of defined visitor use areas. Archeological sites situated in these areas can be damaged by trampling and vandalism and artifacts can be subject to unauthorized collecting.

Historic Structures. This topic is being retained because several of the 54 historic national register-eligible structures in the park are being affected by visitor use. Commercial service activities are likely contributing to these impacts.

Cultural Landscapes. Two historic landscapes have been identified within the park. The 10.6-mile Haleakalā Highway (i.e., park road) is a historic cultural landscape (NPS 2008e) with contributing structures.

Ethnographic Resources and Cultural Practices

Ethnographic Resources. This topic was retained because areas within Haleakalā National Park are culturally and spiritually important to Native Hawaiians and would be affected by management decisions under this plan. These areas (traditional cultural properties) have been used by Native Hawaiians for a wide range of traditional activities from pre-European contact (before 1778) to present day.

Cultural Practices. This topic was retained because there are several types of traditional cultural practices that have taken place and continue to take place within the park in areas used by commercial services providers. Some of these practices require silence and

solace and may require an uninterrupted view plane and sacred space.

Visitor Use and Experience

Number and Diversity of Commercial Activities. This topic was retained because the number and diversity of commercial services provided has contributed to crowding, visitor conflicts, safety issues, and competition for limited space for commercial tour groups, especially in the summit area. The Kīpahulu area has also been affected by tour vans and buses of various sizes competing for limited parking space, resulting in congestion and frustration for noncommercial users.

Access and Quality of Experience. This topic has been retained because large crowds in the summit area are believed to detract from the quality of the sunrise experience and from visitors understanding of the area as a sacred place. Congestion has also occurred at the Kīpahulu area and is a topic of concern.

Opportunities for Solitude and Quiet. This topic was retained because opportunities for solitude and quiet are critical to the essential nature of Haleakalā National Park and for private traditional ceremonies. These opportunities have been disrupted by noise from motor vehicles, commercial tours, and other human activities.

Interpretation and Education. This topic was retained because some commercial use groups have provided clients with inaccurate or insufficient information that is not consistent with the park's mission or NPS interpretive standards. Without receiving adequate information about the park's natural resources and safe behavior, commercial visitors are believed to be contributing to natural resource impacts and may be affecting the safety and experience of other visitors.

Public Health and Safety. This topic was retained because the health and safety practices of commercial use groups can have an impact not only on the clients using the service, but also on other visitors in the area. Health and safety of visitors is one of the major responsibilities of the National Park Service. In particular, the National Park Service has a responsibility to identify public safety hazards and risks and to determine how and to what extent these risks can be mitigated. The proposed actions included in the alternatives would affect management of commercial services, including the information provided by them to their patrons, activities they offer, and use levels, all of which potentially can affect the health and safety of visitors in the park.

Bicycle Use. This topic was retained because bicycle tours from the summit area have led to a variety of health and safety incidents, having an impact not only on clients using the service, but also on other visitors in the area.

Socioeconomic Environment

Haleakalā National Park plays a major role in the Maui economy, given the number of visitors to the park and associated visitor spending. The proposed actions in the alternatives may affect the local economy of the island of Maui, Hawai'i, and the commercial service providers whose livelihood is connected to the park. Thus, this topic was retained for analysis.

Park Operations

The impacts on park operations are analyzed in this plan because the actions in the alternatives could result in changes in park management of commercial services, which in turn would have long-term implications for the park's staffing, workloads, and funding requirements.

IMPACT TOPICS DISMISSED FROM FURTHER CONSIDERATION

Air Quality

The National Park Service has a responsibility under the Clean Air Act to protect its natural resources from the adverse effects of air pollution. NPS *Management Policies 2006* states that the National Park Service will seek to perpetuate the best possible air quality in parks because of its importance to visitor enjoyment, human health, scenic vistas, and the preservation of natural systems and cultural resources.

Haleakalā National Park is designated a class I air quality area under the Clean Air Act (NPS 2006a). Air quality in Haleakalā National Park is generally excellent, with few human-made sources of air pollution nearby. The largest source of air pollution is the Kīlauea volcano on the island of Hawai'i, approximately 80 miles to the southeast. Volcanic gases and particles are periodically transported by southeasterly winds to the park, affecting air quality and visibility. Anthropogenic sources like power generation stations, sugar cane processing facilities, field burning, automobiles, large trucks, and buses can also affect local air quality.

Dust from horse tours can affect local air quality for short periods of time, but these impacts on the park's overall air quality are negligible. None of the alternatives proposed for the management of commercial services at Haleakalā National Park would measurably affect local air quality. No construction is proposed. No large-scale increases in vehicle numbers would be anticipated as a result of the alternatives. Therefore, air quality was dismissed from analysis.

Lightscape Management

NPS *Management Policies 2006* states that the National Park Service will preserve, to the greatest extent possible, the natural lightscapes of parks, including natural darkness. The agency strives to minimize the intrusion of artificial light into the night scene. None of the actions proposed in the alternatives would result in new structures or require nighttime lighting. Since the alternatives would have no effect on the park's lightscapes, this topic was dismissed from further analysis.

Water Resources

Unique or pristine water resources at Haleakalā National Park include streams, springs, and coastal waters in the Kīpahulu coastal area and sub-alpine lakes. Inland surface waters are designated by the state of Hawai'i as "1a"—prohibiting pollution by humans and requiring maintenance of their natural wilderness character. This same protection is extended to marine waters classed as AA and marine bottom ecosystems category II. As of 2004, there were no water bodies within the park that were listed as impaired by the state of Hawai'i (NPS 2006c).

Swimming may be having a negligible to minor adverse effect on water quality in some areas of the park, but none of the actions proposed in the alternatives would likely change the water quality in fresh or marine waters in or adjacent to the park. Thus, this topic was dismissed from further analysis.

Wetlands and Floodplains

Executive Orders 11990, "Protection of Wetlands" and 11988, "Floodplain Management," and NPS Director Orders 77-1: *Wetland Protection* and 77-2: *Floodplain Management* require analysis of impacts on floodplains and regulated wetlands. Wetland bogs and ponds are located within the Kīpahulu Valley Biological Reserve Area. This area is closed to entry and is outside the area of potential effect. There are no other wetlands regulated under the provisions of section 404 of the Clean Water Act or areas

designated as wetlands using the classification system of the U.S. Fish and Wildlife Service (1979) within the areas of potential effect. Therefore, wetlands are dismissed from analysis. Likewise, none of the alternatives proposed in this plan would affect the floodplain or drainage functions of ʻOheʻo Gulch.

Fish and Wildlife (excluding two threatened and endangered bird species)

Under NPS *Management Policies 2006*, the National Park Service strives to maintain natural components and processes of park unit ecosystems, including the natural abundance, diversity, and ecological integrity of plants and animals. As the majority of Haleakalā National Park is managed as wilderness, fish and wildlife were not addressed as independent topics; these subjects are components of the definition for wilderness and would be included as such. Some feeding of wildlife by visitors, including commercial visitors, occurs. It is expected with additional education of guides and their clients, this practice would be minimized. Thus, none of the alternatives would likely have greater than a negligible effect on the park's fish and wildlife populations. None of the alternatives would measurably affect wildlife habitat in the park. Therefore, this topic was dismissed from further analysis.

Ecologically Critical Areas or Other Unique Natural Resources

The Nationwide Rivers Inventory identified Palikea Stream, including ʻOheʻo Gulch as having potential for inclusion in the National Wild and Scenic Rivers System (NPS 1995a). None of the alternatives would affect the flow, scenic nature, or function of these streams. In addition, the alternatives would not affect any designated ecologically critical areas or other unique natural resources, as referenced in the Wild and Scenic Rivers Act (40 CFR 1508.27) or the criteria for national natural landmarks, as these sensitive resources are located within portions of the park that are designated as the Kīpahulu Valley Biological Reserve and are beyond the bounds of visitor and commercial use. Thus, this topic was dismissed from further consideration.

Prime and Unique Farmlands

Prime farmlands are defined as lands that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and are available for these uses. Prime farmlands have the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. Unique farmlands are lands other than prime farmland that are used for the production of specific high value food and fiber crops.

No prime or unique farmlands are part of Haleakalā National Park (USDA-NRCS 2006). Some lands in the park are farmed using traditional practices, but for interpretive purposes only. Thus, this impact topic was dismissed from further consideration.

Wilderness Character

Approximately 74% of the park (24,719 acres) is designated wilderness, managed under the Wilderness Act of 1964. This topic was dismissed because no actions are being proposed that would affect the wilderness area. (Commercial services in the wilderness area will be addressed in a wilderness stewardship plan.)

Museum Collections

Guidance provided by NPS *Management Policies 2006* (NPS 2006c) and NPS-28, *Cultural Resource Management Guideline* (NPS 1998) mandates that a park's irreplaceable museum items, archival materials, photographs, natural and cultural specimens, artifacts, and other collections be protected from threats by human actions or natural physical processes. The park collections currently are housed in an environment that protects them from degradation or damage, maintains their regional context and research value, and provides access for scholars. None of the alternatives would affect the park museum collections. Thus, this topic was dismissed from further evaluation.

Indian Trust Resources

Indian trust assets are owned by American Indians but are held in trust by the United States. Requirements for management of these assets are included in the Secretary of the Interior's Secretarial Order 3206, "American Indian Tribal Rites, Federal-Tribal Trust Responsibilities, and the Endangered Species Act" and Secretarial Order 3175, "Departmental Responsibilities for Indian Trust Resources." Indian trust assets do not occur within Haleakalā National Park. Therefore, there would be no effect on Indian trust resources resulting from implementation of any of the alternatives.

Environmental Justice

Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. According to the Environmental Protection Agency (EPA), environmental justice is the

> . . . fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies (EPA 1999).

The goal of fair treatment is not to shift risks among populations, but to identify potentially disproportionately high and adverse effects and identify alternatives that may mitigate these impacts. There are both minority and low-income populations in the general vicinity of Haleakalā National Park. Commercial services use the same areas Native Hawaiians use to conduct traditional cultural practices. These impacts will be analyzed under the cultural resources impact topic. None of the alternatives being considered would have a disproportionately high or adverse effect on any minority or low-income population or community. This conclusion is based on the following information:

- The planning team actively solicited public comments during the development of the commercial services plan and gave equal consideration to all input from persons, regardless of age, race, sex, income status, or other socioeconomic or demographic factors.

- No impacts were identified that would substantially alter the physical and social structure of the nearby communities.

Conflicts with Land Use Plans, Policies, or Controls

Whenever actions taken by the National Park Service have the potential to affect the planning, land use, or development patterns of adjacent or nearby lands, the effects of these actions must be considered. The project area for the commercial services plan would not affect land development or plans in areas outside the park. Therefore, none of the alternatives addressed in this assessment would have the potential to affect other land use plans, policies, or controls beyond the park's boundary.

Energy Requirements and Conservation Potential

Under any alternative, the National Park Service would continue to implement its policies of reducing costs, eliminating waste, and conserving resources by using energy-efficient and cost-effective technology (NPS 2006c). Irrespective of this plan, NPS staff would continue to look for energy-saving opportunities in all aspects of park operations. The proposed alternatives also would not include additional infrastructure or facilities. Although there would be differences in the number of commercial vehicles operating in the various alternatives, only minor changes in overall energy consumption in the park would be expected due to the alternatives. Therefore, this topic was dismissed from further analysis.

Natural or Depletable Resource Requirements and Conservation Potential

As directed by NPS *Management Policies 2006*, the National Park Service strives to minimize the short- and long-term, environmental impacts of development and other activities through resource conservation, recycling, waste minimization, and the use of energy-efficient and ecologically responsible materials and techniques. None of the alternatives being considered would result in the extraction of resources from the park. The alternatives would not include new development. Therefore, this topic was dismissed from further analysis.

Quality of Built Environment

No facility construction or development is included in the alternatives for this plan. Therefore, quality of the built environment was dismissed from further analysis.

RELATIONSHIP OF OTHER PLANNING EFFORTS TO THIS PLAN

NATIONAL PARK SERVICE PLANS

Several NPS plans and documents have influenced this plan or would be influenced by this plan when it is approved. Some of these plans are described briefly here, along with their relationship to this plan.

General Management Plan / Environmental Impact Statement (1995)

This plan has been the park's guiding document since 1995. It provided an overall parkwide management direction; zoned the park; and provided broad strategies for resource management, visitor use, future facility development, and proposed additions to the park. The plan provided specific directions for management of the West Crater Rim and the Kīpahulu coastal areas. User capacities were identified for these areas. For the West Crater Rim, a preliminary capacity of about 250 persons at any one time was set, although it also was noted that this capacity could change. The general management plan also stated there would be no expansion of parking area size in the crater rim area. For the Kīpahulu coastal area overnight capacity was set at about 120 people and day use capacity was set at 1,300 persons per day. The general management plan provided the overall direction for this commercial services plan—the directions in this detailed implementation plan tier off the general management plan.

Interim Operations Plan for Sunrise (2005)

This temporary plan was instituted to ensure safe use of the three parking areas at the summit and to ensure emergency vehicle access to these areas during the sunrise period. It allocated the use of the limited number of spaces between commercial and noncommercial users. It also froze the number of commercial use authorizations for bicycle tours. Originally implemented in 2005, this interim operations plan subsequently was modified, in 2007 and 2008, to address changes in permitted commercial use. This commercial services plan replaces all of the provisions of the 2005 interim operations plan. (See appendix A for more details on the interim operations plan.)

Superintendent's Compendium (2007)

This is a list of designations, closures, permit requirements, and use restrictions promulgated under the discretionary authority of the superintendent. The compendium covers public use limits; public closures and area designations for specific uses or activities; a list of activities that require a NPS permit; regulations regarding preservation of natural, cultural, and archeological resources; and general regulations regarding resource protection, public use, vehicles and traffic safety, and commercial and private operations, among other topics. The compendium would be modified as necessary to reflect any changes resulting from implementation of this commercial services plan.

Haleakalā National Park Business Plan (2008)

This plan describes the current financial and operational conditions, opportunities, and challenges facing Haleakalā National Park. It documents the breadth of responsibilities undertaken by each of the park's functional

areas and discusses how the park allocates its resources, based on fiscal year (FY) 2007 expenditures and operations. The plan outlines park priorities and opportunities for the next three to five years and specific actions that the park plans to undertake to achieve these goals. It also provides analyses of strategies for the park to consider while expanding visitor services, resource protection responsibilities, and partnership opportunities. With regard to commercial services, the plan sets a priority for finalizing and implementing the commercial services plan. The business plan calls for a preauthorized debit program (or automatic payment option) for all commercial use authorization holders, which would allow NPS staff to track commercial tour-provider entrance fees on a weekly basis and automatically debit the provider's bank account. The plan also notes the need for rehabilitation of Sliding Sands Trail, establishment of a training and certification program for commercial tour guides, and the provision of a handbook for tour participants. All of the proposed actions in the commercial services plan are consistent with the business plan.

Kīpahulu District Comprehensive Site Plan, Design Program, and Environmental Assessment (in progress)

This site plan would provide direction for the future of facilities at Kīpahulu. The site plan focus would be on improving visitor experience, natural and cultural resource protection, and park operations. Specific elements that may be considered in the site plan include emergency landing zone area, law enforcement housing, improvements to the base yard (maintenance, resource storage, and work areas), expanding or moving the visitor center, expanding storage, maintenance staff housing, off-grid/sustainable utility improvements, improved overflow parking, improvements to the campground, and trail improvements (e.g., making trails accessible, improving circulation and flow). Although this plan will affect facilities used by tour groups, no actions are being proposed that would affect the nature or number of tour groups using the area—the actions in this commercial services plan are consistent with actions being considered in the site plan.

SECTION 7 PROGRAMMATIC CONSULTATION

The National Park Service initiated Endangered Species Act programmatic section 7 consultation with the U.S. Fish and Wildlife Service in 2011 for all NPS management activities at Haleakalā National Park. This consultation is covering all the species that are analyzed in this document, as well as other listed species that are affected by NPS management. The U.S. Fish and Wildlife Service agreed that work can continue on the commercial services plan while the programmatic consultation proceeds.

BACKGROUND RELATED TO DEVELOPMENT OF THE COMMERCIAL SERVICES PLAN

HISTORY OF THE PLANNING EFFORT

To address public health and safety and visitor protection issues created by the large number of commercial and private vehicles attempting to park at the Haleakalā summit to view the sunrise, in fall 2005, the park staff implemented the *Commercial Use at Sunrise Interim Operations Plan.* This plan was intended to provide for safe use of the limited parking available during the sunrise viewing period. Available parking was allocated during that time period between commercial and noncommercial users based on prior use and was then allocated further among the commercial users based on historical commercial activity (see appendix A). The interim plan was intended to remain in effect until a more permanent solution was determined through a commercial services plan.

Work on the commercial services plan began in summer 2006. After public scoping meetings were held in October 2006, the NPS planning team began developing alternatives and writing the plan and its accompanying environmental assessment.

In March 2010, a newsletter was distributed to the public, which provided an update on the planning process and described the preliminary alternatives being considered by the planning team. The newsletter requested public feedback on the preliminary alternatives. Two public meetings were also held to obtain feedback on the alternatives.

Several key elements have shaped the development of the commercial services plan, many of which have been identified earlier in this chapter (e.g., laws and policy, park purpose and significant statements, comments from the public, consultations with the park's Kūpuna groups).

Information on the details of the consultation and coordination that has occurred during this planning process is provided in "Chapter 5: Consultation and Coordination."

In addition to the above elements, several studies have contributed to this plan, and the National Park Service has taken several steps to address issues related to commercially guided downhill bicycle tours in the park, as described below.

HISTORY OF MANAGEMENT OF COMMERCIAL DOWNHILL BICYCLE TOURS

Beginning in 1983, bicycle touring companies were permitted to provide tours in the park. Usually tour operators drove their clients up to the Haleakalā summit to view the sunrise. Then, beginning at the crater parking lot, visitors rode their bicycles down the Haleakalā Highway through the park and continued outside the park (see "Chapter 3: Affected Environment" for more details). This use grew rapidly in popularity over the years, as did the number of other commercial and private vehicles parking at the summit to watch the sunrise. By 2005, 106,000 clients were participating in the guided downhill bicycle tours per year. In 2006, bicycle tour clients composed 6% of the park's total recreational visits.

As use levels grew, the resulting congestion at the summit during sunrise created access issues due to a lack of parking spaces, impeded traffic, and impeded access by emergency vehicles, and caused resource impacts involving overflow of visitors into critical habitat and off-trail areas.

Commercial bicycle tours also had a history of serious accidents and injuries, including two fatalities, generating public health and safety concerns. In addition, impacts occurred to the soundscape and ethnographic resources. These effects contributed to increasing negative perceptions of the park by Native Hawaiians.

To address the public health and safety and visitor protection issues created by the large number of commercial and private vehicles attempting to park at the Haleakalā summit to view the sunrise, the National Park Service implemented the *Commercial Use at Sunrise: Interim Operations Plan* in fall 2005 (see appendix A). The purpose of this plan was to provide for safe use of the limited parking available during the sunrise viewing period and was intended to be in effect until a more permanent solution was determined through a commercial services plan for the park.

On September 26, 2007, a park visitor participating in a commercially guided downhill bicycle tour was killed after she lost control of her bicycle on the downhill run from the Haleakalā summit and was struck by a vehicle operated by another commercial downhill bicycle tour. This fatality was one of a series of serious injuries and fatalities that had occurred within a 12-month period at the park during commercially guided downhill bicycle tours.

In keeping with the responsibility to identify public safety hazards, determine how and to what extent these risks can be mitigated, and comply with applicable legal authorities, on October 10, 2007, Superintendent Marilyn Parris ordered an emergency safety stand-down and termination of commercial use authorizations for commercially guided downhill bicycle tours in the park. The superintendent also requested that Regional Director (now NPS Director) Jonathan B. Jarvis appoint a team to conduct a safety analysis of these tours (NPS 2008a). The safety evaluation focused on if and how commercially guided downhill bicycle tours may be operated within the park so as to maintain public health and safety and to protect park visitors.

The safety evaluation was completed in the spring of 2008, with the issuance of reports by a NPS safety analysis team (NPS 2008a), an NPS board of review (NPS 2008b), and the park staff (NPS 2008c). The analysis showed that bike tours as operated prior to the safety stand-down posed an unacceptably high risk to park visitors. Among the factors contributing to this high risk were a complex and demanding environment to operate a bicycle, the wide range of clients who participate (including those who do not possess the skill and ability to operate a bicycle in this environment), lack of or poor supervision in conducting the tours, and lack of fitness of clients (NPS 2008a).

On March 10, 2008, the park superintendent issued a decision on the implementation of the board of review's findings and recommendations (NPS 2008d) (see appendix B). The decision was made to use the ongoing commercial services planning process to evaluate the impacts on park resources and values that could result from the risk-mitigating conditions suggested in the board of review's report. The commercial services planning process would be used to examine a different type of bike tour experience, which would incorporate recommendations from the board of review to help mitigate the risks of the bike tours. The superintendent further determined that until the commercial services planning process is completed, the safety stand-down of all commercially guided downhill bicycle tours in the park would continue.

The emergency stand-down on commercially guided downhill bicycle tours has remained in effect for over three years. Visitors seeking a commercially led bicycle tour in the park no longer have this opportunity. Although most of the commercial bicycle tour operators continue to provide tours in the park, the tours now operate as road-based tours in the park and

launch bicycle tours just outside of the park boundary.

VISITOR RESEARCH STUDIES

Research and park data collection efforts were used to identify resource and visitor experience issues, including those issues specifically related to commercial services. The studies also identified some possible adaptive management strategies that could be implemented to address unacceptable impacts to park resources and visitor experiences.

In 2007, a series of visitor studies was done to support management of visitor use and resource protection in the park (NPS 2009a; NPS 2006b; VPI 2007a; VPI 2007b; VPI 2008a; VPI 2008b). One of the studies (Marion and Hockett 2009) was an assessment of visitor-related resource impacts at attraction sites and trails that have diverse types and levels of use, including commercial services. This study documented baseline conditions for trails and recreation sites and the distribution of some visitor uses.

Other relevant visitor studies include a visitor study (University of Vermont 2004) and a transportation study (NPS 1995b) evaluated use types and levels, along with visitor preferences and expectations in the summit area of the park. The visitor study also included a survey of downhill bicycle tour participants to evaluate visitor motivations and preferences and to evaluate existing conditions.

A 2000 visitor survey (University of Idaho 2000) included respondents from both Kīpahulu and the summit areas of the park. It examined topics such as visitor use patterns, demographics, trip motivations, and preferences.

Other relevant information used in considering the commercial services plan alternatives came from park records and other unpublished sources. These included data on visitor complaints, use levels, safety incidents, and commercial use statistics.

NEXT STEPS AND IMPLEMENTATION OF THE PLAN

THE NEXT STEPS

After the distribution of the *Haleakalā National Park Draft Commercial Services Plan / Environmental Assessment*, there will be a 60-day public review and comment period, after which the NPS planning team will evaluate comments from other federal agencies, tribes, organizations, businesses, and individuals regarding the draft plan and make revisions as appropriate. After this public review, the plan may be approved with a "Finding of No Significant Impact," assuming there are no significant impacts identified during public review. If significant impacts are identified, a notice of intent to initiate an environmental impact statement may be prepared.

IMPLEMENTATION OF THE PLAN

Many of the actions in this plan can be implemented immediately following the completion of the planning process. However, some actions will be phased in, depending on future NPS funding and staff workloads, e.g., requiring all guides to receive training and being certified by NPS staff so as to provide a guidebook to clients. The approval of a plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Other NPS management actions will depend on visitor use patterns; unanticipated environmental changes; actions of commercial services providers, such as how many providers apply for various commercial use authorizations; and monitoring of visitor experiences and resource conditions.

To be useful the commercial services plan must be flexible. To protect park resources and the quality of the visitor experience, changes may be made to this plan after its publication. Group size limits, client-to-guide ratios, trail use, and other specifications may be revised in response to new information, such as assessments of impacts to resources, the update of the park's general management plan, and changes in park programs. Approved activities, if found incompatible with resource protection, visitor enjoyment, and/or safety, may be suspended or terminated.

Adaptive Management

Adaptive management consists of a series of repeating incremental steps: (1) collect information on an existing problem, (2) analyze it, (3) propose appropriate interventions, (4) implement the interventions, (5) monitor the interventions, and, if needed, (6) propose and implement additional interventions to address the problem.

Adaptive management will be employed by park staff in response to changes that occur during the life of this plan. Depending on the nature of changes that occur, the National Park Service would either take additional actions consistent with the management directions in this plan or, if necessary, amend or replace the plan. Possible adjustments might include, but are not limited to

- adjusting the number of commercial use authorizations or concession contracts
- adjusting the number and/or types of trips
- changing or eliminating the locations where the activity could occur
- eliminating an activity entirely

In all cases, appropriate environmental compliance would occur before new actions are taken.

Alternatives, Including The Preferred Alternative

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1

INTRODUCTION

This chapter describes four alternatives for managing commercial services in Haleakalā National Park excluding wilderness over the next 10–15 years. The four alternatives embody the range of what the public and National Park Service want to see accomplished in providing for commercial services while protecting resource conditions and ensuring high quality visitor experiences. Alternative A (no-action alternative) presents a continuation of current management direction and is included as a baseline for comparing the consequences of implementing each alternative. The action alternatives are alternatives B, C, and D. These alternatives present different ways to manage commercial services in the park.

Commercial Services and Wilderness

All of the alternatives in this plan exclude the Haleakalā Wilderness. As noted in chapter 1, a wilderness stewardship plan will address management of commercial services, including a decision on whether commercial services should be limited in the Haleakalā Wilderness. In the interim, until the wilderness stewardship plan is completed, no new commercial providers or uses would be permitted in the wilderness area.

As noted in chapter 1, the National Park Service would continue to follow existing servicewide mandates, laws, and policies regardless of the alternatives considered in this plan. These mandates and policies are not repeated in this chapter.

Before describing the alternatives, this chapter briefly explains how the alternatives were developed, including the key assumptions that guided their development and how the preferred alternative was identified. Also presented are park-specific evaluation criteria for determining whether commercial services in the park are appropriate or necessary. After the alternatives are described, mitigation measures that would be used to reduce or avoid impacts are listed, the environmentally preferable alternative is identified, and several actions or alternatives are noted that the planning team considered but dismissed. At the end of the chapter, two tables summarize the key differences among the alternatives and the differences in impacts that would be expected from implementing each alternative based on the analysis in "Chapter 4: Environmental Consequences."

FORMULATION OF THE ALTERNATIVES

As noted in chapter 1, many elements guide the management of commercial services in Haleakalā National Park, including the park's purpose, significance and mission statements, and servicewide mandates and policies. The management directions in the 1995 general management plan also guide the management of commercial services. In particular, the 1995 plan directed that there would be no expansion of parking area sizes in the crater rim area. Within these parameters, the planning team solicited input from the public, NPS staff, governmental agencies, the park's Kūpuna, commercial services providers, and others regarding issues and desired conditions for commercial services in the park. Newsletters were distributed to the public describing preliminary alternatives and requesting public feedback, and several public meetings were held on the preliminary alternatives (see chapter 5 and appendix D). Planning team members also gathered information about existing commercial services, visitor use, and condition of the park's facilities and resources.

Using the above information, the planning team went through the following process to

identify alternatives that would improve the current management of commercial services at Haleakalā National Park:

- current services were evaluated to determine if they were necessary and/or appropriate
- themes or management concepts were identified for potential action alternatives
- specific actions were identified for the alternative themes

These elements helped to further refine the action alternatives. They also will serve as the basis for adaptive management to ensure that the plan is flexible when needed to protect resources and maintain a high quality experience for all park visitors including commercial services patrons.

As noted in chapter 1, the alternatives in this plan focus on commercial tours. The sale of convenience items by the Hawai'i Natural History Association in the park visitor center and the sale of self-made handicrafts by the nonprofit Kīpahulu Ohana Inc. are not addressed in these alternatives.

The four alternatives described in this chapter embody the range of technically and economically feasible alternatives with regard to commercial services, more broadly visitor uses and experiences, and natural and cultural resource conditions in the nonwilderness portions of Haleakalā National Park. The three action alternatives are intended to effectively and efficiently manage commercial services and address, at the same level, the issues associated with commercial services. The alternatives seek to incorporate both resource protection and visitor opportunities and were developed to be functional and viable. All of the action alternatives are intended to achieve the following desired conditions:

- the types of commercial activities sustain thematic, educational, and environmental values
- the range of commercial goods and services offered allows visitors to safely enjoy and be satisfied with the availability, accessibility, diversity, and quality of experiences available
- commercial services are comprehensively managed to achieve the mission and goals of the National Park Service
- commercial activities support and complement the values of the park, while enhancing the visitor experience

Although all of the alternatives are consistent with maintaining the park's purpose, significance, and mission, they vary in their focus with regard to opportunities for visitor experience in the park.

PLANNING ASSUMPTIONS

The planning team made several key assumptions in developing the alternatives in this chapter. These assumptions helped shape the alternatives the planning team considered:

- No major changes in overall visitor use levels, patterns, or distributions from current conditions are expected during the planning horizon (10–15 years).
- The summit and Kīpahulu areas would continue to be the primary destinations for most commercial visitors; relatively few commercial visitors would go outside of these areas. Peak use times at sunrise at the summit and peak times at Kīpahulu would not change.
- Sunrise hours at the summit are defined as starting a half hour before sunrise and ending a half hour after sunrise.

- There would continue to be interest from the public in participating in guided activities at Haleakalā, including hiking, horseback riding, astronomy, and bicycling.
- Parking stalls reserved for commercial providers at the summit can accommodate up to three vans, two minibuses, or one motor coach.
- Vans can accommodate up to 15 people, including guides and driver; minibuses can accommodate up to 25 people; and motor coaches can accommodate up to 45 people.
- Although actions would be taken to minimize, avoid, or mitigate adverse impacts from tour groups, as is true with all uses impacts to some resources and/or visitors cannot be totally avoided.

IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The NPS preferred alternative was identified through a process called "choosing by advantages" (CBA). Using this process, the planning team identified and compared the relative advantages of each alternative according to a set of factors. The benefits or advantages of each alternative were compared for each of the following CBA factors:

- **Protect natural resources:** How does the alternative prevent the loss of and improve the condition of natural resources?
- **Protect cultural resources:** How does the alternative prevent the loss of and improve the condition of cultural resources?
- **Provide for visitor enjoyment:** How does the alternative provide for high quality visitor services, education, and recreation tours?
- **Provide a safe park environment:** How does the alternative ensure and provide for visitor and staff safety?
- **Improve efficiency of park operations:** How does the alternative improve operational efficiency and sustainability?

The advantages of each alternative were considered in identifying the preferred alternative. The preferred alternative provides the National Park Service with the greatest overall benefits for each factor listed above at the most reasonable cost.

NECESSARY AND/OR APPROPRIATE COMMERCIAL SERVICES

Commercial services may take place with a unit of the national park system only under certain defined and limited circumstances. The national park system has been established and is preserved and managed for the benefit and inspiration of the people of the United States. The NPS Organic Act and the NPS General Authorities Act mandate that park resources and values are to be conserved and are to be provided for enjoyment in such manner and means as will leave them unimpaired for the enjoyment of future generations unless a particular law directly and specifically provides otherwise.

NPS *Management Policies 2006* provides guidance on how park resources and values are to be provided so as to meet these fundamental management principles of the acts. The only uses that are to be allowed are those that (1) are appropriate to the purposes for which the park was established; and (2) can be sustained without causing unacceptable impact (unless otherwise required by law). A process has been set out in chapter 8 of the NPS *Management Policies 2006* for determining whether a use is appropriate. That process includes evaluating a proposed park use for

1. consistency with applicable laws, executive orders, regulations, and policies
2. consistency with existing plans for public use and resource management
3. actual and potential effects on park resources and values
4. total costs to the National Park Service
5. whether the public interest will be served

In addition, park superintendents are to continually monitor and examine all park uses to ensure that unanticipated and unacceptable impacts do not occur.

To assist in applying this process to commercial services uses within Haleakalā National Park, two sets of more specific evaluation criteria were developed and are stated in table 1. All commercial services must meet the criteria described in table 1 as appropriate in order to be considered appropriate to the purposes for which the park was established. If a commercial service meets the appropriate criteria, then its impacts will be assessed and, if acceptable, the commercial service will be evaluated under any other legal eligibility criteria set out in the specific legal authority to be used to authorize that service within Haleakalā National Park (for example, the requirements of 16 USC 5966, if a commercial use authorization).

Table 1 includes another set of specific evaluation criteria for determining whether a commercial service is necessary. These necessary criteria were developed to provide park-specific criteria for one of the screening elements of the NPS Concessions Management Improvement Act. A public accommodation, facility, or service, among other things, must be necessary and appropriate for public use and enjoyment of the unit of the national park system in which it is located in order to be authorized under a concession contract (16 USC 5951(b), 5952). All commercial services that meet the criteria described in table 1 as appropriate and as necessary will be considered to meet the concessions act screening criteria. If its impacts are acceptable, then the commercial service also will be evaluated under the other legal eligibility criteria set out in the concessions act.

TABLE 1. COMMERCIAL SERVICES EVALUATION CRITERIA

Necessary	Appropriate
A service that is **necessary** accomplishes **one or more** of the following:	A service that is **appropriate** accomplishes **all** of the following:
1. The service contributes to visitor understanding and appreciation of park purpose and significance. 2. The service enhances visitor experiences consistent with park area philosophies. 3. The service assists the park in managing visitor use and educating park visitors. 4. The service is an essential service or facility not available within a reasonable distance from the park.	1. The service is consistent with the purpose and significance of Haleakalā National Park. 2. The service is consistent with laws, regulations, and policies. 3. The service does not compromise public health and safety. 4. The service does not significantly impact or impair park resources or values. 5. The service does not unduly conflict with other park uses and activities. 6. The service does not exclude the public from participating in limited recreational opportunities.

To formulate the alternatives for managing commercial services in Haleakalā National Park, the park-specific evaluation criteria in table 1 were applied to the following specific commercial services: (1) road-based tours; (2) hiking tours; (3) horseback riding tours; and (4) astronomy tours. Each of the commercial services types were determined to be appropriate for park purposes. In addition, the legal authority of a commercial use authorization was determined to be the most suitable form of legal authorization to be used to authorize hiking tours, horseback riding tours, and astronomy tours in Haleakalā National Park. Road-based tours were determined also to meet the evaluation criteria for necessary, and the most suitable form of legal authorization for such road-based tours to be that of concession contracts.

Several potential commercial service activities have been determined to be neither necessary nor appropriate in the park. These activities include the following:

- **Skateboarding and rollerblading**—These activities are prohibited in the park under the *Superintendent's Compendium* (36 CFR 2.20). Skateboarding and rollerblading have never occurred in the park and do not contribute to public use and enjoyment of the park.

- **Bicycling (other than designated park roads and parking areas)**—Bicycling is prohibited in the park (other than in designated areas) under the *Superintendent's Compendium* (36 CFR 4.30). Off-road bicycling has never been permitted in the park and does not contribute to public use and enjoyment of the park. It is inconsistent with protection of park natural and cultural resources, and poses safety concerns. In addition, bicycle use is prohibited in designated wilderness, which encompasses most of the park.

- **Hang gliding, paragliding, ultralight aircraft, and hot air balloons**—These activities are prohibited in the park under the *Superintendent's Compendium* (36 CFR 2.17). These activities have never occurred in the park and do not contribute to public use and enjoyment of the park.

- **Bungee jumping, base jumping, rock climbing, and rappelling**—These activities are prohibited in the park under the *Superintendent's Compendium* (36 CFR 1.5). These activities have never occurred in the park and do not contribute to public use and enjoyment of the park. They are inconsistent with protection of park natural and cultural resources and pose safety concerns.

- **Animal tours and pack animals (excluding horses, mules, burros, and donkeys)**—Aside from the use horses and mules, which has occurred historically within the park and in the area prior to establishment of the park, the use of animals such as llamas, goats, and other livestock is not appropriate. The use of these animals does not contribute to public use and enjoyment of the park. They have the potential to adversely affect soils and native vegetation through browsing and nonnative species introductions, and thus are inconsistent with protection of park natural and cultural resources.

- **Food and/or beverage carts/stands**—Haleakalā National Park does not have the capability to provide additional water sources and other infrastructure needed to operate food/beverage operations. Other commercial services (for example commercial filming) will be evaluated on a case-by-case basis using the criteria in table 1 and other applicable criteria, including impacts and eligibility for authorization under available legal authorities (for example, special use permits).

ACTIONS COMMON TO ALL ACTION ALTERNATIVES

The following actions would apply under all of the action alternatives. Many of the actions also apply to the no-action alternative as well.

SUSTAINABILITY AND CLIMATE CHANGE

The federal government has been emphasizing the adoption of sustainable practices. Executive Order 13423, "Strengthening Federal Environmental, Energy, and Transportation Management," includes requirements for the reduction of greenhouse gases and other energy and water conservation measures. In NPS *Management Policies 2006*, section 1.8 states that environmental leadership will be demonstrated in all aspects of NPS activities, including commercial visitor services. Likewise, NPS Pacific West Region Directive 47 encourages entities doing business in parks to emphasize sustainable and green operations.

Sustainability can be defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable practices and principles are those choices, decisions, actions, and ethics that will best achieve ecological/biological integrity; protect qualities and functions of air, water, soil, and other aspects of the natural environment; and preserve human cultures. Sustainable practices allow for use and enjoyment by the current generation, while ensuring that future generations will have the same opportunities. Sustainable practices consider local and global consequences to minimize the short- and long-term, environmental impacts of human actions and developments through resource conservation, recycling, waste minimization, and use of energy efficient and ecologically responsible materials and techniques.

In Haleakalā National Park, NPS staff would work with commercial service providers to adopt sustainable practices and reduce the emission of greenhouse gases and carbon footprint of the park. Under all of the action alternatives, commercial service providers would be encouraged to take such actions as

- fostering the sustainable use of natural resources by integrating and implementing pollution prevention, waste reduction, environmental purchasing, and best management practices into their operations and daily practices
- adopting practices to improve vehicle energy efficiency and reduce greenhouse gas emissions, including using more fuel-efficient vehicles, using alternatively powered vehicles (e.g., electric, natural gas, biofuels), keeping vehicles well maintained, and driving smart to improve fuel economy
- taking other mitigation measures for greenhouse gas emissions
- recycling everything that makes environmental and economic sense to recycle, including brochures and other solid waste
- practicing green procurement whenever feasible
- conducting periodic audits of their carbon footprint
- educating employees and clients on climate change, the threats it poses to the park and the wider environment, and how they can respond

- educating and motivating employees and clients on efforts being taken to use sustainable practices and on the efforts being taken to help address climate change

GENERAL MANAGEMENT OF COMMERCIAL SERVICE PROVIDERS

Under all of the action alternatives, the following management directions would continue to apply to all commercial service providers to the extent directed by federal statutes and regulations, NPS management policies, *Superintendent's Compendium*, and past NPS practices:

- When they are permitted to operate, commercial tours would be allowed the same access as general visitors to all facilities, roads, and designated public use trails.
- Commercial guides must accompany tours at all times within the park.
- In all of the action alternatives hiking, horseback riding, and astronomy tours would be managed under commercial use authorizations, while road-based tours would be managed under concession contracts.
- For activities that are permitted under a commercial use authorization, all of the requirements specified in the NPS Concessions Management Improvement Act and NPS *Management Policies 2006* section 10.3 would be followed (e.g., provisions will be included in the commercial use authorizations for the protection of visitors and the resources and values of the park—see chapter 1). If more applicants apply than there were commercial use authorizations available, the National Park Service would use a competitive process to determine which providers would be awarded a commercial use authorization.
- Commercial use authorizations would be issued on a yearly or biennial basis—existing holders of commercial use authorizations would continue to reapply for their authorization annually or biennially. There would be no preferential right to renewal. The numbers, location, and timing of tours and parking of tour vehicles would be specified in the authorization. Additional relevant conditions of authorization may be placed on providers, based on the nature of the service and type of impact the activity could have on park resources and operations.
- In the event that more applicants file for commercial use authorizations for a given activity than are available, per NPS guidelines a competitive process would be implemented to determine allocation of the services among the suitable commercial service providers.
- All new drivers, leaders, and guides would continue to be required to have a minimum of three training tours with experienced drivers/leaders prior to soloing in that role.

- Commercial service providers must have a commitment to their patron and staff safety, including maintenance of safe and reliable vehicles, stock, and equipment. Tour providers must comply with all applicable federal, state, and local agency requirements for food service, transportation, liability insurance, and other required inspections, permits, and licenses.
- The conduct of the providers and of their patrons would be guided by park rules and regulations and by a specific set of special conditions of authorization that are included as part of the permit that allows the service to be conducted in the park. The special conditions of authorization are reviewed by the park's management team as needed, and provisions relevant to all or specific categories of commercial use authorization holders may be made as needed. (See also the mitigation measures described at the end of this chapter.)
- Information pertaining to the park distributed by commercial service providers and their respective sales pathways would only include NPS-approved information and messaging. This requirement would cover all media, including television and radio advertising, Internet and website promotions, and information, brochures, and flyers distributed at local hotels and visitor attractions. Such information would include, but not be limited to
  - information on the National Park Service and activities that take place in a unit of the national park system
  - information on the purpose and mission of Haleakalā National Park
  - the significance of natural and cultural resources found in Haleakalā National Park
  - descriptions of appropriate park behavior (to protect resources and values)
- All commercial service providers would be required to provide their clients with an educational/interpretive Haleakalā booklet, which would be produced specifically for this audience by the National Park Service. Commercial service providers would include messages in a variety of translations, including Japanese, Spanish, and other Asian and European languages. This requirement would help ensure accuracy and consistency regarding the information being provided to patrons regarding Haleakalā National Park and the National Park Service. It would also help promote behaviors appropriate to the mission and significance of Haleakalā National Park.
- Only commercial service providers with authorization to have sunrise tours would be permitted to park in designated commercial stalls on the summit at sunrise.
- No motor coaches would continue to be permitted to drive up to the summit visitor center during sunrise hours. Motor coaches also would not be permitted at any time to drive up to Red Hill due to parking lot constraints and the absence of a turnaround area.

- For parking stalls reserved for commercial road-based tours, only one provider would be able to use one stall—providers would not be able to share a single stall at the same time. NPS staff would assign which commercial provider stall(s) each provider could use at which times. Allocation of stalls for specific types of services would be determined based on annual needs of the park and permit holders. At times when these stalls are not assigned, then any commercial provider can use these stalls.
- At Kīpahulu, road-based tour vehicles would not be limited under any of the alternatives and would compete with noncommercial vehicles for available parking spaces on a first-come, first-served basis.
- Hiking and astronomy tour providers would use vehicles that can fit in standard-sized vehicle stalls.
- Access would be limited for astronomy groups during park-sponsored special evening programs at the Haleakalā Visitor Center or Red Hill.
- Horseback tour providers would park in specially designated spaces for their trucks.
- NPS staff would encourage commercial service providers to work together to spatially distribute their tours in Haleakalā National Park. They also would be encouraged to schedule tours away from currently overcrowded periods to slower or lower visitation periods.
- NPS staff would annually notify all authorized commercial service providers that during the Makahiki festival season, which runs from approximately October to March, certain portions of the park may be temporarily closed to recreational use to provide times when Native Hawaiians can practice their traditional ceremonies. Closures would be publicized as early as possible so commercial service providers and their patrons could make alternative plans.
- There would be no limits on the number of commercial service providers that would be able to offer hiking tours in the Kīpahulu District.
- With the exception of the areas closed to visitor access, guided hiking tours would continue to be permitted on designated public use trails as long as they do not conflict with NPS-sponsored programs.
- When parking lots fill to capacity, no additional tour groups or other visitors would be allowed into the area.
- Kīpahulu Valley Biological Reserve, Kaʻapahu, or Nuʻu areas within the park would continue to be closed to visitor access.
- Visitor convenience items, such as bottled water, clothing (e.g., hats and gloves), snacks, insect repellent, mementos, and disposable cameras would continue to be permitted by concession contract or other appropriate legal authorization.
- Commercial service providers under commercial use authorizations would be charged fees sufficient to recover associated management and administrative costs.
- Commercial service providers under concession contract would be charged franchise fees in accordance with 36 CFR 51.

- The National Park Service would encourage commercial service providers to employ Native Hawaiian guides and interpreters, who can demonstrate knowledge of Hawaiian natural and cultural history.

(See "Mitigation Measures Common to All Action Alternatives" at the end of this chapter.)

Road-based Vehicle Tours

The National Park Service has conducted a study to assess the feasibility and merits of managing road-based vehicle commercial services via concession contracts versus commercial use authorizations. Among other things, this study has included assessing whether the options for road-based tours outlined in the various action alternatives meet the statutory requirement of 16 USC 5956, that a concession contract be capable of generating a reasonable opportunity for net profit in relation to the capital invested, and the obligations of the contract such that a franchise fee or other monetary consideration may be paid to the government for the privileges granted under the concession contract. This requirement generally is referred to as *financial feasibility* and the study indicates that each of the options outlined are capable of meeting this financial feasibility requirement.

Generally, the National Park Service has found that the benefits of managing road-based tours through a concession outweigh the benefits of issuing commercial use authorizations. Thus, under all of the action alternatives, road-based tours would be managed under concession contracts. However, the number of contracts that would be issued vary between the alternatives. All concession contracts would be competed under the authority of the 1998 Concessions Management Improvement Act. Concession contracts generally are awarded for terms of 10 years or less; however, contracts may be awarded for up to 20 years under certain circumstances. No determination has been made as to the final time frame. The concession contracts would not be awarded until a prospectus is completed and approved and the opportunity is put out for bid. This process should take approximately 18 months after this environmental assessment is completed.

Potential New Concession Contracts or Commercial Use Authorizations

Under all of the alternatives, if new commercial services are proposed that are not considered in this plan, if an applicant wants to make significant changes to a previously approved commercial activity, or if some aspects of a new activity have not been evaluated before, the proposed commercial services would have to meet the criteria set forth by applicable legal authorities, and must be necessary and/or appropriate in meeting the mission of the park.

All new commercial services would be evaluated for a necessary and/or appropriate finding prior to any issuance of a concession contract or commercial use authorization. The following process would be followed for evaluating new or expanded commercial services not considered in this commercial services plan:

- Applicants seeking to provide a commercial service must apply in writing to the park. Some additional review may also be required, including compliance procedures outlined for the National Environmental Policy Act in NPS Director's Order 12.

Application Process

After a request in writing is received, the following steps would be followed.

Step 1: Initial Screening—A park management interdisciplinary team would

review written proposals to determine whether a full review is required.

Step 2: Evaluation—An evaluation form would be used to apply legal standards, recreation potential, resource impacts, effect on management, and other factors derived from the park purpose, significance, and desired future conditions.

If environmental analysis is required to complete the evaluation, costs for compliance with the National Environmental Policy Act may be borne by the applicant. Costs may include surveys, specialist staff time, contractors, and administrative work. The amount would depend on the complexity of the proposal, and could range from minimal to over $40,000.

All proposed new commercial activities reviewed through this process must provide, at a minimum, appropriate visitor services that

- cannot be adequately met outside the park boundary
- do not include capital improvements within the park boundary
- create no unacceptable impacts on natural, cultural, or aesthetic resources or park values
- create no unacceptable impacts on visitor experience, such as increased use in crowded or congested areas
- incorporate measures to ensure safe visitor experiences
- include an educational component appropriate to the activity
- provide and document staff training for quality educational services
- comply with applicable federal, state, and local laws, rules, codes, and regulations
- comply with Haleakalā National Park policies as outlined in management documents such as the general management plan, strategic plan, commercial services plan, and other plans or studies that exist or that might exist in the future

Step 3. Decision—The superintendent would make the final decision as to whether the activity is appropriate and could be authorized based on the evaluation process. Due to the complexities of some proposals and the limited amount of staff time that could be dedicated to the review process, an application for a new or expanded commercial service may require a year or more to review, depending on the level of potential impact. If the service is determined to be appropriate, the park superintendent would determine which kind of authorization is most appropriate—commercial use authorization, concessions contract, lease, or special use permit. If the activity is determined to be more appropriately reviewed as a concessions operation, an evaluation would be made through the provisions listed under the concessions regulation (36 CFR 51) rather than through the completion of the commercial services authorization process.

Additional Considerations and Requirements

Commercial use authorizations do not usually authorize land or facility assignments except in very limited circumstances. They also do not provide an authority to construct facilities or improvements on federally owned land. Use of park land and facilities for commercial activities is typically authorized by concession contracts and special use permits. If facilities are needed for the business to operate, the proposal would most likely be reviewed through the concessions process. All concession contracts, with extremely limited exception, must be competitively bid, as stated in the concessions act.

Support Facilities/Services

Many commercial activities require support facilities and/or services, such as parking spaces, restrooms, changing rooms, and picnic areas. Such support activities have an impact on park budgets, staff, noncommercial visitors, and facilities. When the demand for commercial services exceeds the supply of support facilities and services, park managers may either request a modification of the activity or deny the proposed commercial activity.

Staffing Needs

The process of monitoring individual commercial use authorizations and concession contracts would be examined to determine NPS staff requirements. The amount of staff time required is often dictated by the complexity of the operation and the potential impact on resources. To assess the amount of staff time needed for processing an application, for the evaluation and approval process, and for subsequent authorization and monitoring requirements, the following definitions of complexity would apply:

- **High:** Successful monitoring of the activity would include annual administrative review; permit compliance reviews; and, whenever possible, on-site contact with the operation when the activities are occurring.
- **Medium:** Successful monitoring of the activity would include annual administrative review, intermittent permit compliance reviews, and intermittent on-site contact with the operation.
- **Low:** Successful monitoring would include annual administrative review, permit compliance review, and an on-site review of the areas used for the activity. Contact with commercial use authorization holders may or may not occur during scheduled activities.

Commercial use authorization holders, at a minimum, would bear the expense of management and administrative costs for these activities on a cost recovery basis. Costs (application/administrative and management/monitoring costs) to commercial use authorization holders would be noted on a fee schedule. A list of administrative and management fees would be developed and updated annually for each activity once the plan is implemented.

Concession contract holders pay a franchise fee to the National Park Service that is determined according to the requirements of the concessions act instead of cost recovery.

Other Issues

Local situations and conditions that are not anticipated would be identified on a case-by-case basis. These issues might include the effects of proposed activities on neighboring communities, agencies, organizations, individuals and park partners. They might also include unforeseen and adverse cumulative effects caused by new commercial services along with already approved services.

ALTERNATIVE A (NO ACTION)

CONCEPT

Alternative A provides a baseline for evaluating the changes and impacts presented in the other alternatives. In the no-action alternative, the National Park Service would continue to permit commercial services in Haleakalā National Park as it largely has been doing. No changes would occur to the existing types of commercial tours—road-based, horseback riding, hiking, and astronomy tours would continue to be permitted, while bicycle tours would continue to be prohibited. In this alternative, all commercial tours could continue to grow without limits, constrained only by the size of existing parking lots—as required by the 1995 general management plan. At the summit, commercial services would be managed as they were prior to the adoption of the interim operations plan, which was intended to expire when the commercial services plan was adopted. In other words, the no-action alternative describes the NPS approach to management of commercial services at the summit prior to 2005, with the exception that bicycle tours would continue to be prohibited in the park. As in all of the alternatives, park managers would take necessary actions to resolve unanticipated problems that arise. NPS managers would continue to strive to protect and preserve natural and cultural resources in the park and provide for safe, quality visitor experience.

In this alternative all commercially guided tours in the park—including road-based, hiking, horseback riding, and astronomy tours—would continue to be managed under commercial use authorizations. There would be no limits on the number of commercial use authorizations awarded. Existing holders of commercial use authorizations would continue to reapply for their authorization annually or biennially.

TRAINING AND CERTIFICATION OF GUIDES

There would be no new requirements for commercial guides to be trained and certified under this alternative. However, as noted under "Actions Common to All Alternatives" all new drivers, leaders, and guides would continue to be required to participate in a minimum of three training tours with experienced drivers/leaders prior to soloing in that role.

COMMERCIAL TOURS

Road-based Tours

Road-based tours primarily use park roads, parking areas, visitor centers, and other developed sites. Providers of road-based tours with commercial use authorizations would have access to both the summit and Kīpahulu districts. Under alternative A, there would be no limits on the number of commercial service providers or the level of use for road-based tours. There also would be almost no restrictions on the type of vehicles—commercial service providers could use vans, minibuses, and motor coaches on park roads, with the existing exception—no motor coaches would be permitted to drive up to the summit visitor center during sunrise hours or at any time to Red Hill. In the summit area, at the Haleakalā Visitor Center, road-based tour groups (vans and minibuses) would park in the 13 existing designated commercial stalls throughout the day, including at sunrise. At Red Hill, commercial road-based tour providers could park vans throughout the day, including sunrise, and would compete with noncommercial vehicles for available spaces on a first-come, first-served basis. Parking lot capacity would be the only

constraint on how many tour groups use the summit area.

Hiking Tours

There would be no limits on the number of commercial service providers that could offer guided hiking tours in the Kīpahulu District provided there are available parking spaces. Hiking tour providers would be able to run unlimited trips per day. Group size for all hiking tours would continue to be limited to a maximum of 12 people, including employees.

In alternative A, hiking tour providers would be able to take groups up to the summit area at sunrise and would compete with noncommercial vehicles for available parking spaces at the Haleakalā Visitor Center and Red Hill.

Horseback Riding Tours

Under alternative A, horseback riding providers would continue to be permitted at Kīpahulu.

Commercial service providers offering horseback tours in the Kīpahulu area could run unlimited trips per day. Tour providers also would be permitted to take groups up to the Haleakalā Visitor Center at the summit to view sunrise. Group size would continue to be limited to a maximum of 12 people, including employees.

Astronomy Tours

Under alternative A, this activity would continue to be permitted at Haleakalā Visitor Center and Red Hill for celestial events and stargazing.

There would be no limit on the number of commercial service providers who could offer astronomy tours. Each authorized provider would have access to the summit district and could offer unlimited trips (provided there are available parking spaces). Tour providers also would be able to take groups up to the summit area at sunrise and would compete with noncommercial vehicles for available parking spaces at the Haleakalā Visitor Center and Red Hill. Group size would continue to be limited to a maximum of 12 people, including employees.

Bicycle Tours

As noted previously, under alternative A, no commercial bicycle tours would be permitted in the park. No commercial bicycle tours are currently occurring, and the downhill commercial bicycle tours in the park that operated prior to the 2007 emergency stand down would not be permitted due to safety concerns with this activity (see "Alternatives Considered and Dismissed" section and appendix B).

ESTIMATED COST

General

Cost estimates for alternative A are identified below. The cost estimates, in 2010 dollars, shown here are not for budgetary purposes—they are intended only to show a general relative comparison of costs among the alternatives.

Annual costs are shown for managing commercial services in Haleakalā National Park, which are primarily labor costs. These costs would be independent of any fees the National Park Service might receive from commercial service providers.

It should be noted that the cost of implementing alternative A would be greater than what the National Park Service devoted in 2010 to the park's commercial services program. This is because there would be unlimited numbers of commercial providers permitted in this alternative, which would potentially increase numbers of commercial provider applicants and levels of commercial

use, requiring increased oversight and management.

Increased staff levels would require additional office space to be leased. For alternative A, additional offices would be needed for three full-time equivalents (FTEs), which would cost $20,000 per year.

Staffing Requirements

Management of the commercial services program would require staff responsible for issuing commercial use authorizations annually, meeting with providers, issuing citations, monitoring the program, as well as planning for scheduling and parking. Three full-time staff members would be required. Program management also would include annual issuing of the authorizations and following up on reporting requirements.

The interpretation division would require two employees to be available at the summit at sunrise to provide information to visitors.

One employee would be needed to remove exotic plants from trails and revegetate trails, including the Kīpahulu trail.

The maintenance division would require three full-time equivalents to perform trail rehabilitation and visitor facility maintenance. Unlimited numbers of commercial providers may result in increased use of visitor centers, restrooms, and parking lots, and therefore would increase the need for maintenance and cleaning.

Law enforcement officers would be needed, some dedicated to tours and others available at sunrise hours (6 FTEs total), to direct visitors and ensure protection of visitors and resources.

TABLE 2. ESTIMATED COSTS OF ALTERNATIVE A

Annual Costs	Estimated Costs
Labor Costs	
Program Management (3 FTE)	$187,000
Interpretive Staff (2 FTE)	87,000
Trail Revegetation and Exotic Plant Removal (1 FTE)	54,000
Trail Rehabilitation and Visitor Center Maintenance (3 FTE)	180,000,000
Law Enforcement (1 FTE dedicated to tours, 3 FTE at sunrise hours)	239,000
Leasing Cost	
Office Space (leased)	$20,000
TOTAL ESTIMATED ANNUAL COST	**$767,000**
TOTAL STAFF (FTE)	**13**

Sources for wage and salary estimates: Office of Personnel Management, Civilian Personnel Management Service

All costs are in 2010 dollars.

These FTE numbers relate only to staffing needed to manage commercial services in the park; they do not include all park staffing and do not necessarily represent full staffing levels.

ALTERNATIVE B (NPS PREFERRED ALTERNATIVE)

CONCEPT

Alternative B is the NPS preferred alternative for managing commercial services in Haleakalā National Park. Under this alternative, the National Park Service would continue to provide opportunities for visitors to participate in a variety of commercial tours in the park, but it would provide no new opportunities for commercial services and would reduce the number of commercial visitors in the park to ensure that park resources are protected and that safe, high quality experiences are available to all visitors. Commercial services would be limited by the number of commercial service providers, the number of trips per day, and the locations and number of parking stalls for commercial service providers. In addition, several requirements would be placed on commercial service providers to improve the quality of the service they provide in the park. Thus, this alternative would maintain most of the existing types of commercial services in the park while changing some aspects of commercial services management to better reflect the purpose, significance, and mission of the park.

Primary Differences Between Alternative B and Alternative A

In alternative B

- all commercial tours would be prohibited throughout the park 3 to 5 days per year
- road-based tours would be managed though up to four concession contracts
- only road-based tours would be permitted to offer summit sunrise tours, and they could only park at the Haleakalā Visitor Center
- the number of parking stalls for road-based tours would be reduced at all times of the day
- the number of commercial service providers able to offer horseback riding tours in Kīpahulu would be reduced from 2009 levels (there would be no change in road-based hiking or astronomy tour commercial use authorizations)
- the number of trips per day each commercial service provider could offer would be limited for hiking, horseback riding, and astronomy tours
- commercial road-based tour providers would not operate motor coaches in the park at any time
- all commercial guides would be required to participate in training and be certified to operate in the park

TEMPORAL MANAGEMENT OF COMMERCIAL SERVICE PROVIDERS

Under alternative B, there would be three to five days per year that no commercial tours would be permitted in the park. This action is intended to provide opportunities for Native Hawaiians to conduct cultural practices without interruptions from commercial tours. NPS staff would meet with Kūpuna at the beginning of each year, and then notify commercial operators when these commercial-free days would occur.

Parking spaces assigned to commercial service providers would be available to noncommercial visitors during the commercial-free days.

TRAINING AND CERTIFICATION OF GUIDES

In addition to the training requirements for new employees noted under in the "Actions Common to All Alternatives" section, the park staff would implement a program of training and certification for tour guides and other commercial service provider staff. This effort would be intended to ensure that patrons have high-quality experiences, including messages that are consistent with the park's purpose and NPS philosophies. All tour guides and lecturers would be required to complete an NPS-approved interpretive guide training course and be reviewed and certified by NPS staff before leading their patrons on park activities. The guide certification curriculum would require up to 40 hours of specific training for new guides and up to 16 hours per year for a "refresher" training session for continuing guides. The park staff would develop the curriculum, park messaging materials, and safety information to be included in the coursework.

COMMERCIAL TOURS

Road-based Tours

Authorized providers of road-based tours would have access to both the summit and Kīpahulu districts. Under alternative B, there would be limits on the number of commercial providers or the level of use for road-based tours—up to four concession contracts would be issued to commercial service providers to run road-based tours in the park. Commercial service providers could use vans and minibuses on park roads, but in alternative B motor coaches would be prohibited throughout the park. In the summit area, at the Haleakalā Visitor Center road-based tour groups would park in eight designated commercial stalls throughout the day, including sunrise.(On the three to five days per year when no commercial tours occur, these parking spaces would be available to noncommercial users.) Each stall would be assigned to a commercial road-based tour provider, who in turn could park three vans or two minibuses. At Red Hill, commercial road-based tour providers could not park during sunrise hours, but they could park vans throughout the rest of the day. During these times, tour providers would compete with noncommercial vehicles for available parking spaces on a first-come, first-served basis.

At Kīpahulu, the number of tours provided by the four concession road-based tours would not be limited and they would compete with noncommercial vehicles on a first-come, first-served basis for parking.

Hiking Tours

In alternative B, each tour operator could run one guided hiking trip per day. Group size for hiking tours would be limited to a maximum of 12 people, including employees.

In this alternative hiking tour providers would not be permitted to take groups up to the summit area at sunrise. After sunrise,

hiking tour providers could park their vehicles at the Haleakalā Visitor Center and Red Hill, competing with noncommercial vehicles for available parking spaces.

Horseback Riding Tours

Under alternative B, horseback tour providers would be permitted to use the Kīpahulu area. One horseback tour provider could offer one trip per day in the Kīpahulu area. Group size would be limited to a maximum of 12 people, including employees. Authorized commercial service providers would offer horseback riding tours five days per week.

Horseback tour providers would not be permitted to take groups up to the summit to view the sunrise.

Astronomy Tours

Under alternative B, astronomy tours would be permitted at the Haleakalā Visitor Center and Red Hill for celestial events and stargazing. Up to four commercial service providers would be able to offer astronomy tours. Group size would be limited to a maximum of 12 people, including employees. Each authorized astronomy tour provider would have access to the summit district five days per week and could offer one trip per day. Astronomy tours would not be permitted to use the summit area at sunrise or during park-sponsored special evening programs.

Bicycle Tours

Under alternative B, no commercial bicycle tours would be permitted in the park because this use would be inconsistent with the alternative concept.

ESTIMATED COST

General

Cost estimates for alternative B are identified below. The cost estimates, in 2010 dollars, shown here are not for budgetary purposes—they are intended only to show a general relative comparison of costs among the alternatives.

Annual costs are shown for managing commercial services in Haleakalā National Park, which consists primarily of labor costs. These costs would be independent of any fees the National Park Service might receive from commercial service providers.

No additional office space would be needed in this alternative.

Staffing Requirements

Management of the commercial services program would require staff responsible for issuing commercial use authorizations annually, meeting with providers, issuing citations, and monitoring the program, as well as planning for scheduling and parking. Staff would also participate in contracting with four road-based vehicle tour concessioners. Limiting the number of commercial service providers would allow park staff to better plan for the time and effort required to manage the program. While the concession contracting process is more time-consuming than the CUA permitting process, with reduction in the number of road-based vehicle operators (from 19 to 4) and the less frequent contracting cycle (every 10+ years instead of every 1–2 years), the workload would be less over the term of the contract. Therefore, two full-time staff would be required to manage the commercial services program at the park.

The interpretation division would require two employees to be available at the summit at sunrise to provide information to visitors, and 25% of one employee's time would be needed to write training curriculum,

conduct training courses four times a year, and certify employees.

To revegetate trails and remove exotic plants, 50% of one employee's time would be needed.

The maintenance division would require 1.5 FTEs to perform trail rehabilitation and visitor facility maintenance.

Law enforcement officers would be needed, some dedicated to tours and others available at sunrise hours (3 FTEs total), to ensure visitor and resource protection.

TABLE 3. ESTIMATED COSTS OF ALTERNATIVE B

Annual Labor Costs	Estimated Costs
Program Management (2 FTE)	$133,000
Interpretive Staff (2.25 FTE)	103,000
Trail Revegetation and Exotic Plant Removal (0.5 FTE)	27,000
Trail Rehabilitation and Visitor Center Maintenance (1.5 FTE)	130,000
Law Enforcement (1 FTE dedicated to tours, 2 FTE at sunrise hours)	180,000
TOTAL ESTIMATED ANNUAL COST	**$603,000**
TOTAL STAFF (FTE)	**9.25**

Sources for wage and salary estimates: Office of Personnel Management, Civilian Personnel Management Service

All costs are in 2010 dollars.

These FTE numbers relate only to staffing needed to manage commercial services in the park; they do not include all park staffing and do not necessarily represent full staffing levels.

Some of the workload to set up concessions contracts would be shared by the regional park service staff and would be absorbed into current regional staff workloads, not requiring new staff.

ALTERNATIVE C

CONCEPT

Alternative C is similar to alternative B in that both alternatives would maintain most of the existing types of commercial services in the park while changing some aspects of commercial services management to better reflect the purpose, significance, and mission of the park. The National Park Service would continue to provide opportunities for visitors to participate in a variety of commercial tours of the park, but it would provide no new opportunities for commercial services and limit the number of commercial visitors to ensure that park resources are protected and to ensure that safe, high-quality experiences are available to all visitors. Like alternative B, alternative C would limit the number of trips per day per commercial service provider and the locations and number of parking stalls for commercial service providers. However, alternative C would not restrict the days when commercial service providers could offer tours in the park. Instead, this alternative would impose stricter limits than alternative B on the number of commercial service providers and on group size. As in alternative B, alternative C would place several new requirements on commercial service providers to improve the quality of the service they provide in the park.

Primary Differences Between Alternative C and Alternative A

In alternative C,

- road-based tours would be managed though up to three concession contracts
- only road-based tours would be permitted to offer sunrise tours, and they could only park at the Haleakalā Visitor Center
- the number of parking stalls for road-based tours would be reduced at the summit all day
- the number of commercial service providers able to offer horseback riding tours in Kīpahulu would be reduced to one (there would be no change in the number of road-based hiking or astronomy tour providers.
- the number of trips per day each commercial service provider could offer would be limited for hiking, and astronomy tours
- group sizes would be reduced for hiking and astronomy tours
- all commercial guides would be required to participate in training and be certified to operate in the park

TRAINING AND CERTIFICATION OF GUIDES

Alternative C would implement the same program of training and certification for commercial tour guides and providers as described under alternative B. This effort would be intended to ensure that patrons have high-quality experiences, including messages that are consistent with the park's purpose and NPS philosophies.

All tour guides and lecturers would be required to complete an NPS-approved interpretive guide training course and be reviewed and certified by the NPS staff before leading their patrons on park activities. (See alternative B for additional details.)

COMMERCIAL TOURS

Road-based Tours

Authorized providers of road-based tours would have access to both the summit and Kīpahulu districts. Under alternative C, there would be limits on the number of commercial service providers, or the level of use, for road-based tours; up to three concession contracts would be issued to commercial service providers to run road-based tours in the park. Commercial service providers could use vans, minibuses, or motor coaches on park roads; however, motor coaches would be prohibited from going to the summit at sunrise. In the summit area at the Haleakalā Visitor Center, road-based tour groups would park in six designated commercial stalls throughout the day, including sunrise. Each stall would be assigned to a provider, who in turn could park three vans, two minibuses, or one motor coach. In alternative C, no commercial road-based tour providers would be permitted to park at Red Hill at any time during the day.

At Kīpahulu, the number of tours run by the three concession road-based tour providers would not be limited and they would compete with noncommercial vehicles on a first-come, first-served basis.

Hiking Tours

In the Kīpahulu District, group size for hiking tours would be limited to a maximum of six people, including employees. Each tour operator would be able to run one trip per day.

In this alternative, hiking tour providers would not be permitted to take groups up to the summit area at sunrise. Hiking tour providers could park their vehicles at the Haleakalā Visitor Center any time after sunrise, competing with noncommercial vehicles for available parking spaces. However, they could not park at Red Hill at any time.

Horseback Riding Tours

Under alternative C, one authorized commercial services provider could run one horseback riding trip per day in the Kīpahulu area. Group size would be limited to a maximum of six people, including employees.

Horseback tour providers would not be permitted to take groups up to the summit to view the sunrise.

Astronomy Tours

Under alternative C, astronomy tours would be permitted at the Haleakalā Visitor Center and Red Hill for celestial events and stargazing. Up to four commercial providers would be authorized to offer astronomy tours in the park. Group size would be limited to a maximum of six people, including employees. Each authorized astronomy tour provider would have access to the summit district and could offer one trip per day. Astronomy tours would not be permitted to use the summit area at sunrise or during park-sponsored special evening programs.

Bicycle Tours

Under alternative C, no commercial bicycle tours would be permitted in the park because this use would be inconsistent with the alternative concept.

ESTIMATED COST

General

Cost estimates for alternative C are identified below. The cost estimates, in 2010 dollars, shown here are not for budgetary purposes—they are intended only to show a general relative comparison of costs among the alternatives.

Annual costs are shown for managing commercial services in Haleakalā National Park; these are primarily labor costs. These costs would be independent of any fees the National Park Service might receive from commercial service providers.

No additional office space would be needed in this alternative.

Staffing Requirements

Management of the commercial services program would require staff responsible for issuing commercial use authorizations annually, meeting with providers, issuing citations, and monitoring the program, as well as planning for scheduling and parking. Staff would also participate in contracting with three road-based vehicle tour concessioners. Limiting the number of commercial service providers would allow park staff to better estimate the time and effort required to manage the program. While the concession contracting process is more time-consuming than the CUA permitting process, with reduction in the number of road-based vehicle operators (from 19 to 3) and the less frequent contracting cycle (every 10+ years instead of every 1–2 years), the workload would be less over the term of the contract. Therefore, two full-time staff would be required.

Limits to tour numbers would decrease the demands on park staff. The interpretation division would require one employee to be available at the summit at sunrise to provide information to visitors, and 25% of one employee's time would be needed to write training curriculum, conduct training courses four times a year, and certify employees.

To revegetate trails and remove exotic plants, 50% of one employee's time would be needed.

The maintenance division would require 1.5 FTEs to perform trail rehabilitation and visitor facility maintenance.

Law enforcement officers would be needed, some dedicated to tours and others available at sunrise hours (3 FTEs total) to manage visitor and resource protection.

TABLE 4. ESTIMATED COSTS OF ALTERNATIVE C

Annual Labor Costs	Estimated Costs
Program Management (2 FTE)	$133,000
Interpretive Staff (1.25 FTE)	60,000
Trail Revegetation and Exotic Plant Removal (0.5 FTE)	27,000
Trail Rehabilitation and Visitor Center Maintenance (1.5 FTE)	100,000
Law Enforcement (1 FTE dedicated to tours, 2 FTE at sunrise hours)	195,000,000
TOTAL ESTIMATED ANNUAL COST	**$516,000**
TOTAL STAFF (FTE)	**8.75**

Sources for wage and salary estimates: Office of Personnel Management, Civilian Personnel Management Service

All costs are in 2010 dollars.

These FTE numbers relate only to staffing needed to manage commercial services in the park; they do not include all park staffing and do not necessarily represent full staffing levels.

Some of the workload to set up concessions contracts would be shared by the regional park service staff and would be absorbed into current regional staff workloads, not requiring new staff.

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ALTERNATIVE D

CONCEPT

In alternative D, the National Park Service would expand the range of opportunities for visitors to participate in commercial tours in the park. Visitors would be able to participate in guided road, hiking, horseback riding, astronomy, and bicycling tours in this alternative. The levels of commercial use would also be increased for most commercial activities, but unlike alternative A there would be limits on the growth of the level of commercial visitation in the park to ensure that park resources are protected and to ensure that safe, high quality experiences are available to all visitors. Commercial services would be limited by the number of commercial service providers, the number of trips per day, and the locations and number of parking stalls for commercial service providers. In addition, like alternatives B and C, alternative D would place several new requirements on commercial service providers to improve the quality of the service they provide in the park. These actions would help ensure that permitted commercial services under alternative D would be consistent with the purpose, significance, and mission of Haleakalā National Park.

Primary Differences Between Alternative D and Alternative A

In alternative D,

- road-based tours would be managed though up to five concession contracts
- the number of parking stalls for road-based tours would be increased to 15 stalls at the summit all day
- a guided interpretive bicycle tour on the summit road would be available for visitors
- the number of commercial service providers able to offer horseback riding in Kīpahulu, astronomy, and bicycle tours all would be limited (there would be no change in the number of road-based hiking providers)—up to three operators would be able to provide guided horseback tours in Kīpahulu, up to six operators would be able to provide astronomy tours, and up to two operators would be able to provide guided bike tours
- the number of trips per day each commercial service provider could offer would be limited for astronomy tours in the summit area
- all commercial guides would be required to participate in training and be certified to operate in the park

TRAINING AND CERTIFICATION OF GUIDES

Alternative D would implement the same program of training and certification for commercial tour guides and providers as described under alternative B. This effort would be intended to ensure that patrons have high-quality experiences, including receiving messages that are consistent with the park's purpose and NPS philosophies. All tour guides and lecturers would be required to complete an NPS-approved interpretive guide training course and be reviewed and certified by the NPS staff before leading their patrons on park activities. (See alternative B for additional details.)

COMMERCIAL TOURS

Road-based Tours

Authorized providers of road-based tours would have access to both the summit and Kīpahulu districts. Under alternative D, there would be limits on the number of commercial service providers, or the level of use, for road-based tours; up to five concession contracts would be issued to commercial service providers to run road-based tours in the park. Commercial service providers could use vans, minibuses, or motor coaches on park roads; however, motor coaches would not be permitted to drive to the summit at sunrise. In the summit area, at the Haleakalā Visitor Center road-based tour groups would park in 15 designated commercial stalls throughout the day, including sunrise. Each stall would be assigned to a provider, who in turn could park three vans, two minibuses, or one motor coach. Commercial road-based tour providers also would be permitted to park vans in two reserved spaces at Red Hill at any time during the day.

At Kīpahulu, the number of tours run by the four concession road-based providers would not be limited and they would compete with noncommercial vehicles on a first-come, first-served basis.

Hiking Tours

In the Kīpahulu area, each authorized hiking tour provider could run unlimited guided hiking trips per day. Group size for hiking tours would be limited to a maximum of 12 people, including employees.

In this alternative, hiking tour providers would be permitted to take groups up to the summit area at sunrise and would compete with noncommercial vehicles for available parking spaces at the Haleakalā Visitor Center and Red Hill.

Horseback Riding Tours

Under alternative D, one provider could offer horseback riding trips in the Kīpahulu area. Group size for horseback tours would be limited to a maximum of 12 people, including employees.

Astronomy Tours

Under alternative D, this activity would be permitted at the Haleakalā Visitor Center and Red Hill for celestial events and stargazing. Up to six commercial providers would be authorized to offer astronomy tours. Group size would be limited to a maximum of 12 people, including employees. Each authorized astronomy tour provider would have access to the summit district and could offer one trip per day. As part of their tour, astronomy providers would be able to take groups up to the summit area at sunrise and would compete with noncommercial vehicles for available parking spaces at the Haleakalā Visitor Center and Red Hill.

Interpretive Bicycle Tours

For the purposes of this plan and environmental assessment, the term *bicycle* is as defined in 36 CFR 1.4:

> Bicycle means every device propelled solely by human power upon which a person or persons may ride on land, having one, two, or more wheels, except a manual wheelchair.

In alternative D, commercial service providers would be able to offer an interpretive bicycle tour on the park road down from the summit. The new tour would be a slow-paced educational experience, focusing on safety and allowing visitors to enjoy the views and learn about the park and its natural and cultural resources, history, Native Hawaiian culture, and stewardship. Interpretation would occur both on the van trip up to the summit as well as on the

bicycle ride down. Opportunities always would be available for riders to stop and take a van down the road.

Up to two commercial service providers would be permitted under commercial use authorizations to conduct the interpretive bicycle tours. To reduce potential safety concerns, bicycle providers would not offer tours from the summit during sunrise hours. Instead, they would offer tours for a limited time, between 8 a.m. to 10 a.m., when vehicle traffic is lighter on the road. Bicycle tour providers would park at the Haleakalā Visitor Center and would compete with noncommercial vehicles for available parking spaces.

Based on the 2008 NPS board of review's recommendations and subsequent analysis by NPS staff, the following key measures would be followed to help ensure safe, quality visitor experiences on the bicycle tours:

- Group sizes would be limited to five people, plus a guide.
- Bicycle tours would be permitted to depart from the visitor center at 15-minute intervals.
- Bicycle tour providers would not be permitted to use trailers within the park, but rather would be permitted to have bicycles on roof racks. Bicycle hitches would be permitted as long as they do not violate any state or federal regulations, and do not exceed parking stall length or width.
- The vehicles used for bicycle tours within the park would not exceed 15-passenger vans.
- All bicycle tours would be required to use the following pullouts and must allow traffic to pass, even if there is only one vehicle behind them, to provide opportunities for patrons to rest and for safety checks: (1) pullout 0.1 mile above Kalahaku Overlook; (2) pullout near mile post 17 below Leleiwi Overlook; (3) Halemauʻu trailhead pullout; (4) pullout at milepost 13; and (5) park headquarters. Bicycle tours also would be permitted to stop at other pullouts to allow traffic to pass, to allow patrons to enjoy the views, and for interpretive opportunities.
- Bicycle tour providers would be encouraged to bring their clients into the Haleakalā Visitor Center and park headquarters visitor center during operational hours to receive information about the park and for interpretive opportunities.
- Bicycle tour providers would be required to develop and NPS staff would approve specific safety materials about the bicycle tours and the risks of the activity.
- Bicycle tour guides would be required to meet minimum training standards, which would be reviewed by NPS staff.
- Improved communication would occur between guides and clients during the ride. At a minimum, brake lights would be required on all bikes.

Additional operational actions in the board of review's findings, such as requiring companies to establish a reasonable refund policy for clients who opt out at the summit and prohibiting third party bookings, would be adopted as appropriate (see appendix C). All of these stipulations would be included in the commercial use authorizations.

As stated in section 8.2.2 of NPS *Management Policies 2006,* NPS staff would monitor this new use, assess its potential

impacts on park resources, and ensure that unacceptable impacts do not occur.

ESTIMATED COST

General

Cost estimates for alternative D are identified below. The cost estimates, in 2010 dollars, shown here are not for budgetary purposes—they are intended only to show a general relative comparison of costs among the alternatives.

Annual costs are shown for managing commercial services in Haleakalā National Park, which consist primarily of labor costs. These costs would be independent of any fees the National Park Service might receive from commercial service providers.

Increased staff levels would require additional office space and equipment to be leased or purchased. For alternative A, additional offices would be needed for 3.75 FTEs, which would cost $27,000 per year.

Staffing Requirements

Management of the commercial services program would require staff responsible for issuing commercial use authorizations annually, meeting with providers, issuing citations, and monitoring the program, as well as planning for scheduling and parking. Staff would also participate in contracting with five road-based vehicle tour concessioners. Limiting the number of commercial service providers would allow park staff to better estimate the time and effort required to manage the program, although the limits would be higher in this alternative than in alternatives B and C. While the concession contracting process is more time-consuming than the CUA permitting process, with reduction in the number of road-based vehicle operators (from 19 to 5), and the less frequent contracting cycle (every 10+ years instead of every 1–2 years), the workload would be less over the term of the contract. Therefore, 2.5 FTEs would be required to manage the program.

The interpretation division would require two employees to be available at sunrise to provide information to visitors, and 25% of one employee's time would be needed to write training curriculum, conduct training courses four times a year, and certify employees.

To revegetate frontcountry trails and remove exotic plants, one employee would be needed.

The maintenance division would require three employees to perform trail rehabilitation and visitor facility maintenance.

Law enforcement officers would be needed, some dedicated to tours and others available at sunrise hours (5.5 FTEs total), to manage visitor and resource protection. A higher level of staff would be needed to ensure safety of visitors in relationship to bicycle tours.

TABLE 5. ESTIMATED COSTS OF ALTERNATIVE D

Annual Costs	Estimated Costs
Labor Costs	
Program Management (2.5 FTE)	$160,000
Interpretive Staff (2.25 FTE)	103,000
Frontcountry Trail Revegetation and Exotic Plant Removal (1 FTE)	54,000
Frontcountry Trail Rehabilitation and Visitor Center Maintenance (3 FTE)	195,000,000
Law Enforcement (2 FTE dedicated to tours, 3.5 FTE at sunrise hours)	302,000
Leasing Cost	
Office Space (Leased)	$27,000
TOTAL ESTIMATED ANNUAL COST	**$841,000**
TOTAL STAFF (FTE)	**14.25**

Sources for wage and salary estimates: Office of Personnel Management, Civilian Personnel Management Service

All costs are in 2010 dollars.

These FTE numbers relate only to staffing needed to manage commercial services in the park; they do not include all park staffing and do not necessarily represent full staffing levels.

Some of the workload to set up concessions contracts would be shared by the regional park service staff and would be absorbed into current regional staff workloads, not requiring new staff.

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MITIGATION MEASURES COMMON TO ALL ACTION ALTERNATIVES

Congress charged the National Park Service with managing the lands under its stewardship "in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (NPS Organic Act). As a result, NPS staff members routinely evaluate and implement mitigative measures whenever conditions occur that could adversely affect national park system resources.

Mitigation measures are the practicable and appropriate methods that would be used under an action alternative to avoid or minimize harm to park natural and cultural resources, wilderness, visitors, and visitor experience.

Within the context of the commercial services plan, the following mitigative measures would be used to avoid or minimize potential impacts from the implementation of the action alternatives. Unless otherwise noted, these measures would be applied to all of the action alternatives, subject to funding and staffing constraints. Many of the measures would be included as stipulations in the authorizations for commercial service providers to operate in the park. (See also the special conditions listed on http://www.nps.gov/hale/parkmgmt/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=224523.)

GENERAL

- NPS staff would encourage commercial service providers to bring patrons into the park in multipassenger vehicles.
- Commercial service providers would be required to train their employees so as to minimize their impacts on park resources.
- All commercial service providers would be required to attend a yearly park sponsored educational session on strategies to minimize the spread of invasive species in the park. At this session commercial service provider vehicles may be inspected by park staff.
- Commercial service provider guides would be required to accompany tours at all times within the park to ensure that adverse impacts to park resources are avoided or minimized.

NATURAL AND CULTURAL RESOURCES

All commercial service providers would be required to

- ensure their patrons do not disturb or remove any natural or cultural items from the park, including rocks, flowers, and plants
- strictly adhere to "stay on the trail" rules and not travel off designated roads, trails, or public areas
- transport out all items brought into the park, including food, beverage containers, and trash (i.e., pack-in/pack-out waste); no park facilities or receptacles would be used for disposal of waste
- prohibit their patrons from feeding any wildlife within the park, as stated in park regulations
- comply with NPS water conservation guidelines
- clean boots and other equipment before hikers enter the park to minimize the potential to introduce invasive species

- ensure areas are left in the same condition that existed or cleaner than the condition that existed prior to the occurrence of the authorized activities
- maintain their vehicles to prevent exhaust that violates state and federal laws, and also limit idling times of their vehicles to reduce the potential for air pollution and to conserve fossil fuel resources

All commercial service providers leading horse trips within the park would be required to

- use hitching posts to tie up horses where they are available
- stay on established, designated trails as indicated on park maps and must ride in single file
- remove manure from trailheads and parking areas on a daily basis
- use commercial feed in lieu of grazing if deemed necessary by the superintendent to reduce the potential for introduction of invasive plant species to the park
- have their vehicles and pastures inspected for invasive species at least biannually by park staff
- All astronomy tour operators must sign and carry a permit that details the ways they can minimize their impact on Hawaiian petrel. NPS biologists also would continue to make presentations to the tour companies regarding the behavior of the bird in the park. NPS law enforcement staff would continue to regularly patrol the areas used by the astronomy tours to ensure there are no adverse impacts caused by the tour groups on the birds.

PUBLIC SAFETY

All commercial service providers would be required to

- operate all company vehicles in a safe manner and maintain safe and reliable vehicles, stock, and equipment in accordance with applicable state, county, and federal regulations; vehicles would be inspected regularly by qualified staff, at least on a semiannual basis
- comply with posted traffic regulations and take every safe opportunity to use roadside turnouts to allow faster traffic to pass

In addition,

- horseback tour providers would be required to inspect horses and equipment prior to beginning each tour to ensure patron safety
- horseback tour providers would be required to restrict tour speed of their horses to a trot pace or less
- all astronomy tour providers would be required to limit their areas of use to paved areas

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The environmentally preferable alternative is the alternative that will best promote national environmental policy as expressed in the National Environmental Policy Act. Section 101(b) of the act identifies six criteria to help determine the environmentally preferable alternative. The act directs that federal plans should

1. fulfill the responsibilities of each generation as trustee of the environment for succeeding generations

2. assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings

3. attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences

4. preserve important historical, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice

5. achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities

6. enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources

Two of the above criteria did not make a difference in determining the environmentally preferable alternative. Criterion 1 is satisfied by all the alternatives—Haleakalā National Park is already a national park system unit, and as a trustee of this area the National Park Service would continue to fulfill its responsibilities to protect this area for future generations. The difference between the alternatives in this regard is not appreciable. Criterion 6 was determined to be not applicable to this plan.

When considering the remaining criteria, the environmentally preferable for the commercial services plan is alternative B, the NPS preferred alternative. This alternative best satisfies the national environmental goals embodied in goals 2, 3, 4, and 5—it protects most of the park's natural and cultural resources while concurrently providing for a relatively wide range of neutral and beneficial uses of the environment.

The alternative provides all visitors with safe trips in a beautiful, diverse environment. It would help reduce congestion on the summit, reducing the number of commercial service providers and parking spaces for road-based tours, and thus provide more opportunities for Native Hawaiians and other visitors to experience a sense of quiet and relative solitude.

Additional guide training requirements would help ensure that guided visitors receive a quality, safe experience. However, most commercial visitors should be able to schedule park tours during their time on Maui, even with these limits, and should have a good quality experience in Haleakalā National Park.

With unlimited growth that could expand up to the limits of the parking lot capacities, alternative A would pose the greatest risk of all the alternatives for adversely affecting the park's natural and cultural resources. With increasing number of tours, compared to alternative B, the quality of the visitor experience could decrease as congestion, crowding, and conflicts between various

users increase at popular destinations like the Haleakalā summit, especially at sunrise. The ability of Native Hawaiians to perform traditional practices and ceremonies would be much diminished in alternative A compared to alternative B. The potential for accidents in this area could increase if more motor coaches drive up the narrow summit road. Although ongoing commercial services management would provide a wide range of visitor experiences, incorrect and inappropriate information about the park's resources and mission would continue. Thus, compared to alternative B, alternative A would not fulfill as well criteria 2, 3, 4, and 5.

Both alternatives B and C would be more effective in meeting criteria 2, 3, 4, and 5 than alternative A. By limiting commercial use levels, even more than alternative B, alternative C would provide more natural resource protection than alternative B. Crowding would be reduced at the summit, especially during sunrise. Like alternative B, alternative C requirements for NPS-directed guide education and certification would enhance visitor understanding of the park's mission and resources. However, alternative C would not provide as many opportunities for public enjoyment and understanding of the park by guided visitors—decreasing the number of commercial service providers, commercial parking spaces, and group sizes would result in fewer opportunities for guided visitors to enjoy the park and fewer individual choices compared to alternative B. Thus, compared to alternative B, alternative C would be about the same in fulfilling criteria 2 and 5 and would be better in fulfilling criterion 3 (attaining the widest range of beneficial uses of the environment without degradation). However, alternative C would not support as wide a diversity and variety of individual choices as alternative B, and thus would not fulfill as well criterion 3. Although alternatives B and C are about equal overall in achieving the national environmental goals embodied in the National Environmental Policy Act, alternative B is judged to be slightly better due to the wider range of opportunities for all visitors to enjoy the park.

Alternative D would provide the highest diversity of visitor experience of all the alternatives. Like alternatives B and C, the requirements in alternative D for NPS-directed guide education and certification would enhance visitor understanding of the park's mission and resources. However, with increased commercial tours, this alternative would pose a higher potential than alternatives B and C to result in adverse effects on the park's natural and cultural resources. Compared to alternative B, the quality of the visitor experience would decrease on the Haleakalā summit, especially at sunrise, with increased commercial use and the resulting increase in congestion and crowding. The ability of Native Hawaiians to perform traditional practices and ceremonies unfettered would be much diminished compared to alternative B due to the increase in congestion and crowding. With the new interpretive bicycle tours, the potential for conflicts with vehicles, and the potential for accidents on the narrow, steep summit road could increase, even with all the safety measures being taken. Thus, compared to alternative B, alternative D would not fulfill as well criteria 2, 3, 4, and 5.

ALTERNATIVES AND ACTIONS DISMISSED FROM FURTHER CONSIDERATION

During the planning process, several additional alternatives and management actions were considered, but were eliminated from further study. These alternatives and management actions, and the reasons for dismissing them, are described below.

ELIMINATE COMMERCIAL HORSEBACK RIDING IN ENTIRE PARK

Horse use on park trails has adversely affected park resources (NPS 2006b).

However, horses have historically been used to explore and access remote park areas and to maintain the park. This mode of transportation allows access for a segment of the public that might not have access to some park areas otherwise, including the elderly and disabled. Few, if any, nonlocal visitors who come to the park have their own horses. Eliminating commercial horseback tours throughout the park would thus largely remove the opportunity for visitors seeking this experience.

For the above reasons this alternative would conflict with the purposes and significance of the park; therefore, this alternative was not carried through for analysis.

ALLOW DOWNHILL COMMERCIAL BICYCLE TOURS IN THE PARK LIKE THOSE THAT OPERATED PRIOR TO THE 2007 EMERGENCY STAND-DOWN

Commercial bicycle tours within Haleakalā National Park have had a history of serious accidents and injuries (NPS 2008f). The summit road is steep, narrow, and heavily traveled at times; has many hairpin turns; and accommodates a wide variety of vehicles, including tour buses. While the National Park Service does not guarantee visitor safety nor is it responsible for acts and decisions made by visitors that may result in injury or illness, it does have a responsibility to identify public safety hazards and risks and to determine how and to what extent these risks can be mitigated. The 2008 NPS board of review's report found that the commercial guided bicycle tours, as operated and managed prior to the emergency stand-down, "pose an unacceptably high risk to park visitors" (see appendix B). In accordance with section 8.2.5.1 of NPS *Management Policies 2006*, parks must strive to protect human life and provide injury-free visits by reducing or eliminating known hazards.

In addition to the safety concerns, the bicycle tours potentially would increase congestion at the park summit at sunrise. It is also debatable whether an adventure tour is consistent with the purpose of the park. Thus, this commercial service was determined to be unreasonable, unable to meet the objectives of this plan, and in conflict with NPS management policies. Therefore, it was dismissed from further consideration.

ALLOW INTERPRETIVE BICYCLE TOURS AT THE SUMMIT AT SUNRISE

Sunrise at the summit of Haleakalā volcano is the busiest time of the day in this area, with large crowds usually present. Allowing bicycle tours, as well as other commercial tours, to come at this time led to congestion and many management problems in the past,

as noted above. Safety concerns are exacerbated at this time due to heavy use of the summit road and low light levels. In addition, there is no compelling reason why bicycle tours need to take place at this time of the day—they could occur later in the morning at less busy times and still provide a quality interpretive experience for visitors. For the above reasons, this alternative would not help resolve the need for this plan and would conflict with section 8.2.5.1 of NPS *Management Policies 2006;* therefore, it was dropped from further consideration.

DESIGNATE "COMMERCIAL TOUR-FREE" DAYS EACH WEEK IN THE PARK

Under this alternative, there would be five days per week commercial service providers could offer tours in the park and two commercial tour-free days per week. This action was intended to provide a range of opportunities for visitors to experience the park, providing two days when visitors who are seeking opportunities for more quiet and solitude could be in the park without encountering commercial tours. This alternative was dropped because a relatively large number of visitors who rely on commercial tours to see the park would not be able to come if tours were banned on two days. This action would also potentially have a severe economic impact on many tour operators, which in could turn could affect the quality of the visitor experience. Determining which two days to ban this use would be difficult, with different tour operators likely arguing for different days. If the actual commercial tour-free days were to switch from year to year, depending on such factors as when tour ships are visiting the island, it could potentially increase confusion and uncertainty among tour operators, their clients, and noncommercial visitors. If tours were banned two days per week, noncommercial visitors would likely not know this and would be unable to plan their trips around those days. Nor would there be a certainty that noncommercial visitors would find quiet and solitude without commercial tours—more noncommercial visitors might drive up and replace the commercial tour visitors at the summit. For all of these reasons, this potential alternative is unable to meet the objectives of this plan and conflicts with providing compatible opportunities to enjoy park resources as stated in the park purposes and NPS management policies. Therefore, this alternative was dismissed from further consideration.

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SUMMARY TABLES

TABLE 6. COMPARISON OF ALTERNATIVES

	Alternative A (No-action Alternative)	Alternative B (NPS Preferred Alternative)	Alternative C	Alternative D
Concept	No change in management of existing commercial tours; no limit on number of CUAs awarded; when the parking lots fill to capacity, commercial vehicles would be turned away.	Maintain current types of commercial services; commercial tours would be prohibited in the park 3 to 5 days per year; the number of commercial use providers and trips per day also would be limited	Maintain existing types of commercial services, but reduce the levels of commercial use; this alternative would impose stricter limits than alternative B on the number of commercial providers and on group size, but would not restrict the days when tours operate.	Increase levels and range of current commercial visitor opportunities, but there would be some limits on the growth of commercial visitation.
Why?	This alternative is required under NEPA and serves as a baseline for comparing the beneficial and adverse effects of the other alternatives; the park is operating under an interim operations plan (IOP) that is set to expire when the CSP process is complete; if the no-action alternative is selected, the CSP process would be complete and the IOP would expire, restoring conditions before the IOP—the no action-alternative describes the park's pre-IOP management strategy.	This alternative was developed to respond to those people who indicated that commercial services diminished their personal park experience; it continues to provide opportunities for commercial tours, while also providing opportunities for Native Hawaiians to conduct cultural practices without interruptions from commercial tours.	This alternative was developed to respond to those people who indicated that commercial services should be reduced; the alternative would reduce the opportunity for visitors to experience the park via commercial providers.	This alternative was developed to respond to those people who indicated that commercial services should be increased; the alternative would increase the opportunity for visitors to experience the park via commercial providers. Alternative D explores the beneficial and adverse effects of implementing a new bike tour as described in the NPS safety committee's report (NPS 2008c).
Types of Commercial Visitor Uses	▪ Road-based tours ▪ Horseback riding ▪ Guided hiking ▪ Astronomy tours	Same as alternative A	Same as alternative A	Same as alternative A, plus ▪ Interpretive bicycle tours
Level of Use	▪ No limits on the number of CUAs or the level of use with parking lot capacity being the only constraint ▪ No time constraints on use ▪ All operators with CUAs permitted to run tours at the summit at sunrise	▪ The number of CUAs issued would not exceed 2009 levels ▪ For 3 to 5 days per year no commercial tours would be permitted in the park ▪ Only road-based tours permitted at sunrise hours; all other uses start after designated sunrise hours	▪ Existing types of commercial services would be maintained, but the level of commercial services would be reduced ▪ Only road-based tours permitted at the summit during sunrise hours; all other uses start after designated sunrise hours	▪ The numbers of some CUAs would be increased for applicants up to established caps ▪ All commercial operators, except bicycle tours permitted to run tours at the summit at sunrise
Road-based Tours	▪ No limits on the number of CUAs or the level of use for this activity, with parking lot capacity being the only constraint ▪ No restrictions on type of vehicles, except motor coaches would continue to be prohibited from driving to the summit at sunrise ▪ No restrictions on van parking at the Haleakalā Visitor Center or at Red Hill ▪ Those with road-based permits would have access to the summit and Kīpahulu districts	▪ Up to 4 concession contracts would be offered for road-based tours, with access to the summit and Kīpahulu districts ▪ Parking spaces available for road-based tours would be limited to 8 parking spaces at the Haleakalā Visitor Center and available parking at Red Hill after sunrise, except for 3 to 5 days per year when no commercial tours would be permitted in the park ▪ Road-based tour providers could use vans and minibuses, but motor coaches would be prohibited ▪ No limits on the number of road-based tours at Kīpahulu	▪ Up to 3 concession contracts would be offered for road-based tours with access to the summit and Kīpahulu districts ▪ Six parking spaces at the Haleakalā Visitor Center would be reserved for road-based tours throughout the day ▪ No restrictions on type of vehicles, except motor coaches would continue to be prohibited from driving to the summit at sunrise ▪ No road-based tours could park at Red Hill ▪ No limits on the number of road-based tours at Kīpahulu	▪ Up to 3 concession contracts would be offered for road-based tours, with access to the summit and Kīpahulu districts ▪ Six parking spaces at the Haleakalā Visitor Center would be reserved for road-based tours throughout the day ▪ No restrictions on type of vehicles, except motor coaches would continue to be prohibited from driving to the summit at sunrise ▪ No road-based tours could park at Red Hill ▪ There would be no limits on the number of road-based tours at Kīpahulu
Horses	▪ No limit on number of CUAs awarded in the Kīpahulu District ▪ Each commercial services provider would have up to 12 horses per group and could run an unlimited number of	▪ One CUA would be issued for guided horse groups in the Kīpahulu District ▪ The commercial services provider would be allowed up to 12 horses per group and to run one trip per day, except for 3 to 5 days per year	▪ One CUA would be issued for guided horse groups in the Kīpahulu District ▪ The commercial services provider would be allowed a maximum of 6 horses per group and run one trip	▪ One CUA would be issued for guided horse groups in the Kīpahulu District ▪ The commercial services provider would be allowed up to 12 horses per group and run an

TABLE 6. COMPARISON OF ALTERNATIVES

	Alternative A (No-action Alternative)	Alternative B (NPS Preferred Alternative)	Alternative C	Alternative D
	trips ▪ Horse tour groups would be permitted on the summit during sunrise hours	when no guided tours would be permitted ▪ No horse tour groups would be permitted on the summit during sunrise hours	per day ▪ No horse tour groups would be permitted on the summit during sunrise hours	unlimited number of trips ▪ Horse tour groups would be permitted on the summit during sunrise hours
Hiking	▪ No limit on number of CUAs awarded ▪ Each commercial services provider would be allowed up to 12 people per group and could run an unlimited trips in the Kīpahulu District ▪ Hiking tour providers would be able to take groups to the summit at sunrise	▪ No limit on number of CUAs awarded ▪ Each commercial services provider would be allowed up to 12 people per group and could run one trip per day in the Kīpahulu District, except for 3 to 5 days per year when no guided trips would be permitted ▪ No guided hiking groups would be permitted on the summit during sunrise hours	▪ No limit on number of CUAs awarded ▪ Each commercial services provider would be allowed up to 6 people per group and could offer one hiking trip in the Kīpahulu District per day ▪ No guided hiking groups would be permitted on the summit during sunrise hours	▪ No limit on number of CUAs awarded ▪ Each commercial services provider would be allowed up to 12 people per group and could run an unlimited number of hiking trips per day in the Kīpahulu District ▪ Hiking tour providers would be able to take groups to the summit at sunrise
Astronomy	▪ No limit on number of CUAs awarded or the number of trips run by authorized operator ▪ Group size would allow up to 12 people per group ▪ Astronomy CUAs would have access to the summit district	▪ The number of CUAs issued to astronomy groups would be limited to no more than four CUAs ▪ Astronomy CUAs would have access to the summit district outside of sunrise hours ▪ Each CUA could offer one trip per day area (except for 3 to 5 days per year when no guided trips would be permitted) ▪ The maximum size of each group would be 12 people	▪ The number of CUAs for astronomy groups would be limited to no more than four ▪ No restrictions on parking at the Haleakalā Visitor Center and Red Hill ▪ Astronomy CUAs would have access to the summit district outside of sunrise hours ▪ Each CUA could offer one trip per day ▪ The maximum group size would be reduced to six people	▪ Up to six CUAs would be issued for astronomy tours ▪ Astronomy CUAs would have access to the summit district, including the summit at sunrise ▪ Each CUA could offer up to one trip per day ▪ The maximum group size would be 12 people per group
Bikes	▪ The National Park Service would continue to prohibit commercial bicycle riding.	▪ Same as alternative A	▪ Same as alternative A	▪ Up to two CUAs would be issued for interpretive bike tours ▪ No trailers for bicycles would be permitted within the park ▪ Tours would only be offered between 8 a.m. to 10 a.m. ▪ Bicycle tours within the park would not exceed one guide and five bicycle clients ▪ There would be a minimum of 15 minutes between launches by all CUAs
Annual Operating Costs	$767,000	$603,000	$516,000,000	$841,000
Staff (Full-Time Equivalent)	13.00	9.25	8.75	14.25
Common to All Alternatives ▪ The alternatives apply to all parts of the park excluding wilderness. ▪ When parking lots fill to capacity, no additional tour groups or other visitors will be allowed into the area. ▪ Commercial providers and guides would be required to participate in park-provided training that would include NPS messages and themes; commercial providers would be required to distribute booklets that describe park resources, stewardship ideals, and mission. ▪ If there were more applicants than CUAs available, applicants would compete to receive a CUA.				

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TABLE 7. SUMMARY OF KEY IMPACTS

	Alternative A (No-action Alternative)	Alternative B (NPS Preferred Alternative)	Alternative C	Alternative D
Natural Resources—Soils	Guided groups would continue to trample some soils at the summit and guided hiker and horse group activity at Kīpahulu would produce localized, long-term, minor, adverse effects on soils. There would be a long-term, minor, adverse cumulative impact on soils in localized areas.	Some trampling, compaction, and erosion of soils still would occur; with fewer tour groups using the park and increased training of guides, alternative B would likely result in negligible to minor, long-term, adverse impacts on soils at the summit and at Kīpahulu compared to alternative A. There would be a long-term, minor, adverse cumulative impact in localized areas.	Trampling, compaction, and erosion of soils due to guided groups would occur under alternative C; however, with fewer, smaller tour groups using the park and increased training of guides, there would likely be negligible to minor, long-term, adverse impacts on soils at the summit and Kīpahulu area relative to alternative A. There would be the potential for a long-term, minor, adverse, cumulative impact on soils in localized areas relative to alternative A (although alternative C would reduce the intensity of the adverse cumulative impact).	Alternative D would likely have about the same minor, long-term, adverse effects on soils at the summit and at Kīpahulu as alternative A due to trampling, compaction, and erosion of soils by guided horse and hiking groups. There would be a long-term, minor, adverse, cumulative impact on soils in localized areas (although alternative D would reduce the intensity of the adverse cumulative impact).
Natural Resources—Vegetation	With increased use by guided groups in alternative A it is expected overall that there would continue to be localized, minor, long-term, adverse effects on vegetation in areas such as the summit and crater floor. Minor, long-term, adverse impacts also would occur to vegetation along trails in the Kīpahulu area. When the effects of guided visitors and expected future construction projects are added together there would be a minor, long-term, adverse cumulative impact on vegetation in localized areas.	Guided groups in alternative B would still result in some loss and disturbance of vegetation at popular use areas, including the summit's overlooks, and the Kīpahulu area. With reduced numbers of guided groups and increased training of guides, fewer vegetative impacts would be expected. Overall, alternative B would have a long-term, beneficial impact on vegetation in localized areas, compared to alternative A. There also would be the potential for a minor, long-term, adverse, cumulative effect on vegetation in localized areas when the effects of guided visitor use and expected new developments in the Kīpahulu area are added together.	Alternative C would have many of the same effects as alternative B. Guided groups in alternative C would still cause some loss and disturbance of vegetation at popular use areas, such as the summit's overlooks. With reduced numbers of guided groups and increased training of guides, fewer vegetative impacts would be expected. Overall, alternative C would have a long-term, beneficial impact on vegetation in localized areas, compared to alternative A. There also would be the potential for a minor, long-term, adverse, cumulative impact on vegetation in localized areas when the effects of guided visitor use and expected new developments in the park are added together.	With increased use, guided groups in alternative D would result in vegetation damage and loss at the summit and at Kīpahulu. However, with the limits on future increases in use, unlike alternative A, and increased training of guides, the impacts of alternative D would be somewhat less than alternative A. Overall, alternative D would be expected to result in a long-term, beneficial impact on vegetation in localized areas relative to alternative A. When the effects of guided visitors and likely future construction projects are added together, there would be a minor, long-term, adverse cumulative effect on vegetation in localized areas.
Natural Resources—Special Status Species	With continued use, and probably increased use, by guided groups under alternative A, minor to moderate, long-term, adverse impacts could occur to the endangered Hawaiian petrel, nēnē, Haleakalā silversword, and nohoanu. These impacts would be both disturbance and possibly injury and loss of some individuals. However, the continued use of the park by guided groups in alternative A would not threaten the continued existence of the species. When actions independent of this alternative are added to the effects of this alternative, there could be long-term impact on the four species. Based on the definitions of the U.S. Fish and Wildlife Service, alternative A may affect, but would not be likely to adversely affect, the four endangered species in the park.	Under alternative B there would continue to be the potential for disturbance and possibly the injury and loss of some Haleakalā silverswords, nohoanus, nēnēs, and Hawaiian petrels. However, the continued use of the park by guided groups in alternative B would not threaten the continued existence of the species. With limits on the increase of guided groups, bans on guided use several days per year, and increased training of guides, the potential for these impacts would decline when compared to alternative A. Overall, alternative B would have a minor, long-term, beneficial impact on the four listed species. When the effects of alternative B are combined with other present and future actions independent of this plan, there would likely be a long-term, cumulative impact on the four species. Based on the definitions of the U.S. Fish and Wildlife Service, alternative B may affect, but would not be likely to adversely affect, the four endangered species in the park.	Under alternative C there would continue to be the potential for disturbance and possible injury to and loss of some Haleakalā silverswords, nohoanus, nēnēs, and Hawaiian petrels. However, the continued use of the park by guided groups in alternative C would not threaten the continued existence of the species. With limits on increased use of guided groups, a reduction in some group sizes, and increased training of guides, the potential for these impacts would decline. Compared to alternative A, alternative C would have a minor, long-term, adverse impact on the four listed species. When the effects of alternative C are combined with other present and future actions independent of this plan, there would likely be a long-term, cumulative impact on the four species. Based on the definitions of the U.S. Fish and Wildlife Service, alternative C may affect, but would not be likely to adversely affect, the four endangered species in the park.	Under alternative D there would continue to be the potential for disturbance and possible injury to and loss of some Haleakalā silverswords, nohoanus, nēnēs, and Hawaiian petrels. However, the continued use of the park by guided groups in alternative D would not threaten the continued existence of the species. With limits on increased use of guided groups and with increased training of guides, the potential for such impacts would decline. Compared to alternative A, alternative D would have a minor, long-term, adverse impact on the four listed species. When the effects of alternative D are combined with other present and future actions independent of this plan, there would likely be long-term, cumulative impact on the four species. Based on the definitions of the U.S. Fish and Wildlife Service, alternative D may affect, but would not be likely to adversely affect, the four endangered species in the park.
Natural Resources—Soundscape	Alternative A would have a minor to moderate, long-term, adverse impact to the soundscape in localized areas of the park's popular frontcountry areas due to noise from continuing and increasing numbers of guided groups. These impacts would be most evident at the summit, on trails, and in the Kīpahulu developed area.	Alternative B would have a long-term, beneficial impact on the soundscape compared to alternative A. There would be some adverse impacts on the soundscape in localized areas due to noise from guided groups at the summit, and in the Kīpahulu developed area, but actions taken to manage commercial use (e.g., limits on the increase of guided groups, bans on guided use several days per year, and increased training of guides) would reduce these impacts compared to alternative A.	Alternative C would result in a long-term, beneficial impact on the park's soundscape. Most of the park would not be affected by the alternative. There would be some adverse impacts to localized areas of the park's soundscape due to noise from guided groups at the summit and in the Kīpahulu developed area, but actions taken to manage commercial use (e.g., a reduction in the number of commercial service providers, a ban on guided horse use on the Sliding Sands Trail, and increased training of guides) would reduce these impacts compared to alternative A.).	Alternative D would have a beneficial impact on the park's soundscape. Most of the park would not be affected by the alternative. There would be some adverse impacts to localized areas of the park's soundscape due to noise from guided groups at the summit and in the Kīpahulu developed area, the actions taken to manage commercial use (e.g., limits on the number of commercial service providers; limits on the number of trips per day hiking, horseback riding, and astronomy commercial service providers can offer; increased training of guides) would reduce these impacts compared to alternative A.

TABLE 7. SUMMARY OF KEY IMPACTS

	Alternative A (No-action Alternative)	Alternative B (NPS Preferred Alternative)	Alternative C	Alternative D
Natural Resources—Soundscape (continued)	When noise from helicopter air tours and administrative aircraft flying over or near the park, noise from motor vehicles using the summit road to build the solar telescope, and noise from possible construction activities in and outside the park are added to noise from guided visitors in alternative A, there would be the potential for a moderate to major, short-term and a moderate to major long-term, adverse cumulative impact in localized areas of the park's soundscape. Alternative A would add a very small increment to this overall moderate to major, adverse cumulative impact.	When noise from helicopter air tours and administrative aircraft flying over or near the park and noise from possible future construction activities in and outside the park are added to noise from guided visitors in alternative B, there would be the potential for a moderate to major, short-term, adverse, cumulative impact in localized areas of the park's frontcountry. However, alternative B would add a very small increment to the overall adverse cumulative impact.	When noise from helicopter air tours, park administrative aircraft flying over or adjacent to the park and noise from likely future construction activities in and outside the park are added to noise from guided visitors in alternative C, there would be the potential for a moderate to major, short-term, adverse, cumulative impact in localized areas in the frontcountry soundscape. The beneficial increment of alternative C would slightly reduce the overall adverse cumulative impacts.	When noise from helicopter air tours and park administrative aircraft flying over or adjacent to the park and noise from likely future construction activities in and outside the park are added to noise from guided visitors in alternative D, there would be the potential for a moderate to major, short-term, adverse, cumulative impact in localized areas of the park's frontcountry. The beneficial increment added by alternative D would slightly reduce the overall adverse cumulative impact.
Cultural Resources—Archeological Resources	Implementation of alternative A would result in long-term, minor, adverse, and direct impacts on historic structures. When the impacts of alternative A are combined with other past, present, and reasonably foreseeable actions, there would likely be long-term, negligible to minor, adverse, and direct cumulative impacts to historic structures. *Section 106 Summary* After applying Advisory Council on Historic Preservation (ACHP) criteria of adverse effect (36 CFR part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative A would result in determination of no adverse effect.	Implementation of alternative B would result in fewer long-term, minor impacts on archeological resources. When the impacts of alternative B are combined with other past, present, and reasonably foreseeable future actions there would likely be and long-term, minor, adverse impacts to archeological resources when compared to alternative A. *Section 106 Summary* After applying ACHP criteria of adverse effect (36 CFR part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative B would result in determination of no adverse effect.	Implementation of alternative C would result in localized, long-term, negligible impacts on archeological resources. When the impacts of alternative C are combined with the impacts of other past, present, and reasonably foreseeable actions, the result would likely be long-term, negligible to minor, adverse impacts on archeological resources compared to alternative A. *Section 106 Summary* After applying ACHP criteria of adverse effect (36 CFR part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative C would result in a determination of no adverse effect.	Implementation of alternative D would result in long-term, minor to moderate, adverse impacts on archeological resources. When the impacts of alternative D are combined with the impacts of other past, present, and foreseeable actions, there would likely be long-term, minor to moderate, adverse, cumulative impacts on archeological resources. *Section 106 Summary* After applying ACHP criteria of adverse effect (36 CFR part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative D would result in a determination of adverse effects to archeological resources.
Cultural Resources—Cultural Landscapes	Implementation of alternative A would result in short- and long-term, minor to moderate, adverse impacts on cultural landscapes. The impacts of alternative A, in conjunction with past, present, and reasonably foreseeable future actions, would be short and long term, minor, and adverse. *Section 106 Summary* After applying ACHP criteria of adverse effect (36 CFR part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative A would result in a determination of no adverse effect to cultural landscapes.	Implementation of alternative B would result in long-term, minor, adverse impacts on cultural landscapes. The impacts of alternative B, in combination with the impacts of other past, present, and reasonably foreseeable future actions would result in short- and long-term, minor to moderate, adverse impacts compared to alternative A. *Section 106 Summary* After applying ACHP criteria of adverse effect (36 CFR part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative B would result in a determination of no adverse effect to cultural landscapes.	Implementation of alternative C would result in long-term, negligible to minor, adverse impacts on cultural landscapes The impacts of alternative C combined with the impacts of other past, present, and reasonably foreseeable actions would result in short- and long-term, minor to moderate, adverse impacts on cultural landscapes compared to alternative A. *Section 106 Summary* After applying ACHP criteria of adverse effect (36 CFR part 800.5, assessment of adverse effects), the National Park Service concludes that implementation of alternative c would result in a determination of no adverse effect to cultural landscapes.	Overall, alternative D would result in long-term, moderate, adverse impacts on the cultural landscapes compared to alternative A. When the impacts of alternative D are combined with the impacts of other past, present, and foreseeable actions, there would likely be long-term, moderate, adverse impacts on cultural landscapes. *Section 106 Summary* After applying ACHP criteria of adverse effect (36 CFR part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative D would result in a determination of adverse effect to cultural landscapes.

TABLE 7. SUMMARY OF KEY IMPACTS

	Alternative A (No-action Alternative)	Alternative B (NPS Preferred Alternative)	Alternative C	Alternative D
Cultural Resources—Historic Structures	Implementation of alternative A would result in long-term, minor, adverse, and direct impacts on historic structures. When the impacts of alternative A are combined with the impacts of other past, present, and reasonably foreseeable actions, there would likely be short- and long-term, negligible to minor, adverse, direct impacts to historic structures. *Section 106 Summary* After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative A would result in a determination of no adverse effect to historic structures.	Implementation of alternative B would result in long-term, minor, adverse impacts on historic structures. When the impacts of alternative B are combined with the impacts of other, past, present, and reasonably foreseeable actions, there would likely be short- and long-term, negligible to minor, adverse, direct impacts to historic structures. *Section 106 Summary* After applying ACHP criteria of adverse effect (36 CFR part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative B would result in a determination of no adverse effect to historic structures.	Implementation of alternative C would result in long-term, minor, adverse impacts on historic structures. When the impacts on historic structures of alternative C are combined with the impacts of other past, present, and reasonably foreseeable future actions, there would likely be short- and long-term, minor, adverse, direct impacts compared to alternative A. *Section 106 Summary* After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative C would result in a determination of no adverse effect to historic structures.	Implementation alternative D would result in long-term, moderate, adverse impacts on the cultural landscapes compared to alternative A. When the impacts in alternative D are combined with the impacts of other past, present, and foreseeable actions, there would likely be long-term, moderate, adverse impacts on cultural landscapes. *Section 106 Summary* After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative D would result in a determination of adverse effect to historic structures.
Ethnographic Resources and Cultural Practices	Under alternative A, impacts to ethnographic resources and cultural practices would continue to be long term, minor to moderate, and adverse. When the impacts of alternative A are combined with the impacts of other past, present, and reasonably foreseeable future actions, the resulting impacts would likely be short and long term, negligible to minor, and adverse. *Section 106 Summary* After applying ACHP criteria of adverse effect (36 CFR part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative A would result in a determination of adverse effect on ethnographic resources.	Under alternative B, impacts to ethnographic resources and cultural practices would be long term, minor, and adverse. Overall, impacts on ethnographic resources and cultural practices resulting from alternative B in conjunction with other past, present, and reasonably foreseeable future actions would be short and long term, negligible to minor, and adverse. *Section 106 Summary* After applying ACHP criteria of adverse effect (36 CFR part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative B would result in a determination of no adverse effect on ethnographic resources and cultural practices.	Under alternative C, impacts to ethnographic resources and cultural practices would be long term, minor, and adverse. Overall, the impacts on ethnographic resources and cultural practices of alternative C in conjunction with other past, present, and reasonably foreseeable future actions would result in short- and long-term, minor, adverse impacts. *Section 106 Summary* After applying ACHP criteria of adverse effect (36 CFR part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative C would result in a determination of no adverse effect on ethnographic resources and cultural practices.	Under alternative D, impacts to ethnographic resources and cultural practices would be long term, moderate, and adverse, compared to alternative A. Overall, impacts of alternative D on ethnographic resources, in conjunction with the impacts from other past, present, and reasonably foreseeable future actions would be short and long term, moderate, and adverse. *Section 106 Summary* After applying ACHP criteria of adverse effect (36 CFR part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative D would result in a determination of adverse effects to ethnographic resources.
Visitor Use and Experience	Alternative A would result in long-term, moderate, adverse impacts to the overall visitor experience due to unlimited commercial tours and use levels all year long, limited opportunities to experience solitude and quiet, and no requirements for interpretive and educational materials. Overall, there would be long-term, beneficial, cumulative effects to visitor experience when the effects of alternative A are added to other foreseeable actions (e.g., improved visitor facilities, roads, and trails) and moderate to major, adverse cumulative impacts when the effects of alternative A are added to the effects resulting from air tour overflights. The impact of alternative A would contribute a relatively small increment to the overall cumulative impact.	Alternative B would result in long-term, beneficial impacts to the overall visitor experience due to some limits on commercial use authorization / concessions and use levels, some limits on access by commercial tours during the year, intermittent improvements in opportunities to experience solitude and quiet, and requirements for interpretive and educational materials. Overall, there would be long-term, beneficial, cumulative effects to visitor experience when the effects of alternative B are added to other foreseeable actions (e.g., improved visitor facilities, roads, and trails) and long-term, moderate, adverse, cumulative impacts when the effects of alternative B are added to the effects resulting from air tour overflights. The beneficial impact of alternative B would contribute a considerable increment to the overall cumulative impact.	Alternative C would generally result in long-term, beneficial impacts to the overall visitor experience due to strict limits on commercial use authorizations / concessions and use levels (which help reduce crowding and congestion), improved opportunities to experience solitude and quiet, and requirements for interpretive and educational materials. However, compared to alternative A the limits on tours and group size would result in a long-term, minor to moderate, adverse effect on some visitor experiences. Overall, there would be long-term, beneficial, cumulative effects to visitor experience when the effects of alternative C are added to other foreseeable actions (e.g., improved visitor facilities, roads, and trails) and long-term, moderate, adverse, cumulative impacts when the effects of alternative C are added to the effects resulting from air tour overflights. The beneficial impact of alternative C would contribute a considerable increment to the overall cumulative impact.	Alternative D would generally result in long-term, beneficial impacts to the overall visitor experience due to unlimited commercial use authorizations / concessions and use levels, unlimited access by commercial tours all year long, and few opportunities to experience solitude and quiet. Improved education materials and the addition of an interpretive bike tour would also have beneficial effects on opportunities for interpretation and education. Overall, there would be long-term, beneficial, cumulative effects to visitor experience when the effects of alternative D are added to other foreseeable actions (e.g., improved visitor facilities, roads, and trails) and long-term, moderate, adverse, cumulative impacts when the effects of alternative D are added to the effects resulting from air tour overflights. The beneficial impact of alternative D would contribute a small increment to the overall cumulative impact.

TABLE 7. SUMMARY OF KEY IMPACTS

	Alternative A (No-action Alternative)	Alternative B (NPS Preferred Alternative)	Alternative C	Alternative D
Public Health and Safety	Alternative A would result in long-term, minor to moderate, adverse effects on public health and safety due to crowding and frustration on the roadways, conflicts with horse and hiker encounters, confusion due to a lack of consistent safety messaging, and a possible increase in hiker safety issues and rescues. When the effects of alternative A are added to the effects of the park road rehabilitation and the implementation of the Kīpahulu district site plan, there would likely be minor to moderate, beneficial, cumulative impacts to public health and safety (with alternative A adding a noticeable adverse increment to the overall cumulative impact).	Alternative B would result in long-term, negligible to minor, beneficial effects on public health and safety due to a slight reduction in crowding and visitor frustration on the roadways and in conflicts involving horse and hiker encounters, and decreased potential for hiker safety and rescues because of some limitation on commercial use and consistent safety messages provided in interpretive booklets. When the effects of alternative B are added to the effects of the park road rehabilitation and the implementation of the Kīpahulu district site plan there would likely be minor to moderate, beneficial, cumulative impacts to public health and safety (with alternative B adding a beneficial increment to the overall cumulative impact).	Alternative C would result in long-term, moderate, beneficial effects on public health and safety due to a considerable reduction in crowding and visitor frustration on the roadways and in conflicts involving horse and hiker encounters, especially at the summit area, and decreased potential for hiker safety issues and rescues due to strict limitations on commercial use and consistent safety messages provided in interpretive booklets. When the effects of alternative C are added to the effects of the park road rehabilitation and the implementation of the Kīpahulu district site plan there would likely be minor to moderate, beneficial, cumulative impacts to public health and safety (with alternative C adding a noticeable beneficial increment to the overall cumulative impact).	Alternative D would result in minor to moderate, long-term, beneficial impacts due to the provision of an interpretive booklet and the institution of limits on the number of commercial use authorizations and concession contracts for tour groups in the park. The alternative also would have a long-term, moderate, adverse effect on public safety due to crowding and frustration on the roadways, conflicts with more horse and hiker encounters, increased potential for hiker safety issues and rescue due to few limitations on commercial use, and increased risks of possible accidents due to bicyclists on the road. When the effects of alternative D are added to the effects of the park road rehabilitation and the implementation of the Kīpahulu district site plan there would likely be minor, beneficial, cumulative impacts to public health and safety.
Socioeconomics	Alternative A would result in overall long-term, moderate, beneficial impacts to employment in astronomy, hiking, horseback, or road-based tours due to the unlimited number of tours per day allowed, yet continued minor adverse impacts to employment at bicycle tour companies. While some adverse impacts to the local communities could occur, such as potential increased congestion, overall, alternative A is expected to result in continued long-term, minor, beneficial impacts to the community economy due to potential increased visitor spending for tours and increased park operational spending. In combination with other projects, alternative A would result in long-term, minor, beneficial, cumulative impacts to the economy.	Alternative B would result in overall long-term, minor, adverse impacts to tour company employment. Alternative B may result in negligible long-term, adverse effects to the local economies, if visitor demand exceeds maximum capacity for commercial tours of the park and due to reduced park operational spending. In combination with other projects, alternative B would result in short- and long-term, minor, beneficial, cumulative impacts to the economy (as reductions in park spending and visitor spending would be outweighed by the other project increases).	Alternative C would result in overall long-term, minor to moderate, adverse impacts to commercial tour employment and wages and would result in minor, long-term, adverse effects to local economies, if visitor demand exceeds maximum capacity for commercial tours of the park and due to reduced park operational spending. In combination with other projects, alternative C would result in long-term, negligible to minor, beneficial, cumulative impacts to the economy (as reductions in park spending and visitor spending would be outweighed by the other project increases).	Alternative D would result in overall long-term, minor beneficial impacts to tour company employment and wages. Alternative D is expected to result in continued long-term, minor beneficial impacts to the community economy (as in alternative A), with additional park operational spending adding a small benefit over alternative A. In combination with other projects, alternative D would result in short- and long-term, minor, beneficial cumulative impacts to the economy.
Park Operations	With increased numbers of commercial use authorizations, alternative A would reduce operational efficiency and result in long-term, minor to moderate, adverse impacts to park operations. Alternative A, combined with other projects occurring at the park, would result in increased demands on staff time and increased funding needs for staff wages, resulting in short- and long-term, moderate, adverse, cumulative impacts to NPS operations.	Alternative B would result in reduced staff time required to manage the commercial services program and therefore reduced funding needs, compared with alternative A. The alternative would result in long-term, minor, beneficial impacts to park operations. Alternative B, combined with other projects occurring at the park, would result more efficient operations and reduced funding requirements, resulting in long-term, negligible, beneficial cumulative impacts to NPS operations.	Alternative C would require less funding than alternative A. The reduced commercial service management would result in greater operational efficiency and therefore long-term, minor to moderate, beneficial impacts to operations. Alternative C, combined with other projects occurring at the park, would result in more efficient operations and reduced funding requirements, resulting in long-term, negligible to minor, beneficial, cumulative impacts to NPS operations.	Alternative D would require increased demands on staff time, increased number of staff, and associated additional costs, which would result in long-term, moderate, adverse impact to operations. Alternative D, combined with other projects occurring at the park, would result in increased demands on staff time and increased funding requirements, resulting in long-term, moderate, adverse cumulative impacts to NPS operation.

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Affected Environment

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INTRODUCTION

The "Affected Environment" chapter describes the existing environment of Haleakalā National Park. The focus of this chapter is on key topics (e.g., natural and cultural resources, visitor opportunities, socioeconomic characteristics, and park operations) that have the potential to be affected by the alternatives should they be implemented. The topics in this chapter correspond to the impact topics identified in chapter 1.

NATURAL RESOURCES

SOILS

The widely ranging climate zones of Haleakalā National Park have given rise to a variety of general soil types, depending primarily on amount of precipitation, topography, and drainage (NPS 1995a).

Summit

At the summit and in the crater, annual precipitation ranges from less than 30 inches to 200 inches. Soils here are composed of relatively unweathered, bedded volcanic cinders, pumice, and ash associated with the cinder cones. The majority of the inner crater is covered with volcanic rocks and boulders covering the basalt and andesite lava flows (NPS 1995a). In places, recent ʻAʻā lava (sharp, jagged) can be found, either with a thin covering of volcanic ash or directly exposed as hard, glossy, sharp masses creating rough terrain. Rock rubble slides are common on steep slopes within the crater. The west and south flanks of the summit from 8,000 to 10,000 feet consist mostly of sparsely vegetated rough, irregular ʻAʻā lava with little or no developed soil (NPS 1995a).

Currently, there is considerable trampling at viewing sites at the Haleakalā Visitor Center and Red Hill. These locations are visited by nearly every park visitor, and the cinder soils show evidence of pulverization, especially at prime viewing locations. Soil degradation is also evident outside the designated viewing areas because visitors farther back from the railings cannot see—they move about seeking better views, sometimes to locations not intended for this use (NPS 2006b).

Kīpahulu Horse Trail

Soils along this trail are loamy with some rocks. In sharp contrast to the Sliding Sands Trail substrates, these soils compact under horse traffic and are not very erodible. In grassy sections, the trail nearly disappears. Trail grades are steep (10%–20%), but the compactable soil, rockiness, and dense grass cover in some places retard soil erosion. Maximum incision ranges from 0.75 to 4.75 inches, not very severe given the steep grades. Muddiness can be a problem in some areas.

The trail has one recreation site, barren of vegetation, with compacted soils. This approximately 4,000-square-foot area is located in a forested area where horses are tied to trees, as no hitching posts are available. The horse use has exposed and compacted soils on 1,350 square feet of the area (NPS 2006b).

VEGETATION

Haleakalā National Park harbors a rich assemblage of native plant communities with a tremendous diversity of species (NPS 2006b; Talken-Spaulding 2005). Surveys have documented 650 plant species growing in the park, of which 370 are native (NPS 1995a). Of the native species, about 90% are endemic to the Hawaiian Islands with 25% specific to Maui. With an elevation change from sea level to 10,023 feet within a distance of a few miles and a wide range of precipitation from less than 40 inches to more than 400 inches per year, Haleakalā National Park has a diverse range of vegetation zones. Haleakalā National Park has a coastal vegetation zone grading into a highly disturbed lowland forest and mesic forest. At higher elevations, intact lowland and mountain rainforest, mountain cloud forest, montane bogs, subalpine grasslands and shrublands, alpine aeolian cinder fields, montane dry forest remnants, and leeward mesic shrublands appear (NPS 2006a).

Introduced feral goats and pigs, as well as past cattle grazing, have had a devastating impact on the vegetation of Haleakalā (NPS 1995a). Likewise, invasive plant species outcompete and prevent seedling establishment of many native species. These stressors are broad in scope and are due to effects not associated with commercial tours and as such are not discussed in this environmental assessment.

The majority of effects of this commercial services plan are confined to the summit of Haleakalā and the Kīpahulu area.

Summit Area

Plant communities in the summit area consist of alpine vegetation suited to the cool high altitudes and rocky substrate where plant cover is sparse with only a few hardy shrubs and grasses present. The area has less than 25% plant cover, and usually less than 5%, and has low plant species diversity (Medeiros et al. 1998). The ʻahinahina or Haleakalā silversword (*Argyroxiphium sandwicense* ssp. *macrocephaum*) has adapted to and can be encountered in these harsh habitats. Located below the higher elevations and above the forest line, more than a dozen species of shrubs and grasses can be found. Populations range from sparse, poor soils to dense thickets where soils are thicker.

Five recreation sites (areas of obvious vegetative, organic litter, or soil disturbance) in the Haleakalā summit area were created by visitors and commercial services patrons leaving designated trails and overlook platforms (NPS 2006b). These sites consist largely of informal trails and viewing sites for exploration of the ridge tops, for viewing Haleakalā silverswords and for obtaining vistas of the sunrise. No detectable loss of vegetation has occurred, due to the scarcity of vegetation at this elevation; however, pulverization of substrates was evident. Marion and Hockett (NPS 2006b) observed that only a little use could result in informal trails and cause significant trampling, given the nature of the substrate, and sensitivity of the plants to the harsh climate.

Kīpahulu Valley

One of the richest botanical regions in Hawaiʻi lies on the northern and eastern slopes of Haleakalā (NPS 1995a, NPS 2006a). Within this rainforest belt, the dense vegetation of Kīpahulu Valley reflects the heavy rainfall, particularly from 2,500 to 6,500 feet. From sea level to approximately 1,200 feet the native forest cover was removed for agricultural uses and until recently was used for grazing (NPS 1995a). Many nonnative trees and shrubs grow in scattered to closed colonies throughout the grasslands.

Proceeding up the valley, a mixed forest of native and nonnative trees and understory plants is encountered. While several guava and eucalyptus are found in the lower limits of the valley, the original dominant component, koa trees (*Acacia koa)*, still characterizes the historic community (NPS 1995a).

Climbing higher, an open to closed koa forest with some ʻohiʻa (*Metrosideros* sp.) and olapa (*Cheirodendron triynum*) trees is encountered. Except for areas disturbed by pigs, this forest seems to have escaped human-created changes and remains largely untouched (NPS 1995a).

As elevation increases, the koa forest starts to give way to ʻohiʻa forest where the koa disappears and olapa becomes an association dominant with ʻohiʻa. At higher elevations the ʻohiʻa forest gives way to a thick ground cover consisting of several native woody and herbaceous vascular plants. Feral goats formerly inhabiting this region have caused deeply eroded gullies to form on the ridge tops (NPS 1995a).

At the top of the Kīpahulu hose trail there is extensive damage to trees from rope marks, chewed bark, and exposed roots due to horse pawing (NPS 2006b). In general,

approximately 38% of the vegetative cover of the 3,855 total square foot area was reduced by horse and visitor trampling in the area. Several trees also had roots exposed, with four trees showing severe root exposure.

HORSE DAMAGE AT KĪPAHULU

SPECIAL STATUS SPECIES

Four federally listed endangered and threatened species occur within the project area and potentially could be affected by the commercial services plan.

The **Haleakalā silversword** (‘ahinahina) [*Argyroxiphium sandwicense* ssp. *macrocephalum*]) is a primary attraction for many park visitors and is considered by many to be a symbol of the park. It is endemic to a 2,471-acre area at the 6,890- to 9,843-foot elevation in the crater and outer slopes of Haleakalā summit and it can be encountered along the trail system in the summit.

The silversword is a distinctive, globe-shaped rosette plant with rigid (sword-like), succulent leaves covered by silver hairs. The monocarpic (i.e., flowers only once, at the end of its life) silversword matures from seed to its final flowering stage in about 15 to 50 years. At the end of its life, it produces a spectacular flowering stalk 1.6 to 6.4 feet tall, typically with hundreds of maroon sunflower-like flower heads.

Excessive grazing by cattle and goats and vandalism inflicted by people in the 1920s, caused near extinction of the Haleakalā silversword (USFWS 1997). The plant was listed as a threatened species by the U.S. Fish and Wildlife Service on May 15, 1992, because of its extremely limited range and precarious lifecycle.

Critical habitat was designated for the silversword on May 14, 2003. The critical habitat designation covers portions of the summit and crater. Habitat features considered essential for this species include lava flows with almost no soil development and otherwise barren, unstable slopes of recent volcanic cinder cones subject to frequent formation of ice at night and extreme heating during cloudless days, with an annual precipitation of approximately 30 inches to 98 inches (*Federal Register* 68(93): 26001).

Although the species steadily recovered over several decades, one threat today appears to be the Argentine ant. The ant has an adverse effect on insect species that pollinate the silversword. Another threat is climate change, which appears to be adversely affecting plant populations at lower elevations—7,000 feet to 8,000 feet. There are now indications that some populations in the park have decreased in abundance by over 50% from 1982 to 2006 due to increasingly dry conditions in the silversword’s habitat (L. Loope, pers. comm., June 18, 2010).

Marion and Hockett (NPS 2006b) assessed the condition of 25 silverswords in the summit overlook area in 2006. All the plants they located had informal trails leading to them and there was evidence of trampling in the immediate area around the plants.

The authors observed it was likely that it took only a few visitors to create an informal trail and cause significant trampling around a plant. However, little evidence of human

damage to the plants was observed. Nearly all of the actively growing plants were found to be healthy and showing good or vigorous growth. Only one silversword had damaged leaf tips that were believed to be caused by visitors.

The scientists did not study the effect of trampling on silversword seeds and seedlings. Trampling would reduce the survival of seedlings (S. Anderson, pers. com., September 2, 2010). Thus, although visitors may not be harming mature silverswords, it is likely that visitors are affecting the opportunity for reestablishment and recovery of the silversword in areas used by visitors.

The **nohoanu** (*Geranium multiflorum*) is a flowering plant of the geranium family that is endemic to the upper elevations of Haleakalā Crater (NatureServe Explorer 2009). It can be found in subalpine moist to dry forests, shrublands, and grasslands growing on old volcanic substrates. Nohoanu was listed as endangered by the U.S. Fish and Wildlife Service in 1992.

Critical habitat was designated for this plant on May 14, 2003. The critical habitat designation covers portions of the summit. Habitat features that are considered essential for the species include wet or mesic ʻōhiʻa lehua (*Metrosideros polymorpha*) montane forest or alpine mesic forest, pukiawe (*Leptecophylla tameiameiae*) shrubland, mamane (*Sophora chrysophylla*) subalpine dry forest, open sedge swamps, fog-swept lava flows, or montane grasslands (*Federal Register* 68(93): 26010).

The numbers of plants remaining probably do not exceed 3,000 individual plants. Feral goats and pigs and competition with nonnative plants are major threats to this species.

HALEAKALĀ SILVERSWORD

Nēnē or Hawaiian goose (*Branta* [=*Nesochen*] *sandvicensis*) were historically well established on Maui, but were extirpated by the late 1800s (Baldwin 1945). A total of 511 nēnē were reintroduced in the park between 1962 and 2002 (USFWS 2004). Nēnē were listed as endangered by the U.S. Fish and Wildlife Service in 1967. The current population at Haleakalā is stable at about 250–300 birds (Tamayose 2006) with approximately 1,300 individuals estimated to exist in the wild statewide (USFWS 2004). Nēnē are found in the park at elevation of around 6,300 feet to 7,700 feet. Preferred nesting sites include sparsely to densely vegetated beach strands, shrublands, grasslands, and woodlands on well-drained soil, volcanic ash, cinder, and lava rock substrates (Ducks Unlimited 2007). Nēnē can be found walking the road from the park entrance to Halemauʻu Trail and around the headquarters visitor center (R. Nagata, pers. comm., 2007). One or two nēnē are killed each year by visitors driving on the park road.

Conflicts between nesting activities and camping have occurred within the park. The close proximity of campers to nesting nēnē has caused nest abandonment. Food left by campers attracts and sustains populations of predators such as rats, mongooses, and cats. Visitors also feed the geese, although this is

strongly discouraged by the National Park Service.

The **ʻuaʻu or Hawaiian petrel** (*Pterodroma sandwichensis*) is a medium-sized seabird that nests in burrows on the cliffs at Haleakalā. Hawaiian petrel burrows are found throughout Haleakalā between 6,500 feet to 9,800 feet above sea level. During the nonbreeding season, the Hawaiian petrel occurs well away from land, primarily in equatorial waters of the eastern tropical Pacific; they are generally found between 20 degrees north and 10 degrees south latitudes. They feed primarily on squid, but also on fish, crustaceans, and plankton found at the surface and are also known to scavenge (Simons and Hodge 1998). Haleakalā National Park has the largest known breeding population with 700 nesting pairs (NPS 2007f). The number of known Hawaiian petrel burrows in the park has increased from 14 in 1965 to 1,663 in 2009. This increase is attributed to aggressive habitat management by NPS staff.

The Hawaiian petrel was listed as endangered by the U.S. Fish and Wildlife Service in 1967. Main threats to the species include predation by small mammals (rats, mongooses, cats, dogs), light attraction and subsequent groundings, and collision with human-made objects (Simons and Hodges1998; Hodges 1994; Hodges and Nagata 2001). Although it is an illegal activity, visitors in the summit area may affect Hawaiian petrels by knowingly or unknowingly going off trail into unauthorized areas and trampling areas where nests occur. Vehicles driving along the summit road for astronomy tours also may be affecting the local populations, vehicles' white headlights attract the birds, causing them to land on the park road at night; this results in collisions and death or injury of the birds (C Bailey, pers. comm., August 12, 2010). From 2002 through 2010, six petrels were killed by vehicles on the park road, although it is not known if astronomy tour vehicles were actually responsible for the deaths. However, with the increase in astronomy tours over time (which make up approximately 20% of nighttime vehicular traffic in the park), it is likely that the astronomy tours were responsible for some of these deaths. The frequency of Hawaiian petrel roadkill also has increased significantly over time, from an average of 0.31 roadkill per year (about 1 every 3 years) from 1988–2000, to 0.8 per year (about 1 every year) from 2000–2010.

SOUNDSCAPE

Soundscapes include both natural and human-caused components. Natural soundscapes include all naturally occurring sounds such as running water, birdcalls, wind blowing, rocks falling, or thunder, as well as the complete absence of those sounds. The opportunity to experience natural and cultural/historic sounds is an important element of many visitor experiences in national parks.

The opportunity to hear natural sounds depends on the natural ambient sound level, or the consistent background sound level that exists in the absence of mechanical noise. *Noise* is defined as extraneous or undesired sound (Morfey 2001). The natural ambient sound level combines with the human threshold of hearing to set the threshold at which sounds must exceed to be heard.

The loudest sounds that can be detected comfortably by the human ear have intensities that are one trillion times larger than those of sounds that can barely be detected. Because of this vast range, any attempt to represent the intensity of sound using a linear scale becomes unwieldy. A logarithmic unit called the decibel (dB) is commonly used to represent the intensity of sound. The loudness of a sound as heard by the human ear is estimated by an A-weighted decibel scale because the human ear does not respond equally to all frequencies.

Acoustical data were collected at three sites in Haleakalā National Park in 2003 and 2008

(Lee et al. 2006; Lynch and McCusker 2008). The following table presents the natural ambient and existing ambient levels for different areas of the park (daytime hours). The existing ambient level includes both natural and human-caused sounds. Based on this data, many areas of the park have extremely low ambient levels near the human threshold of hearing.

In developed zones of the park, natural processes and the landscape have been altered to accommodate visitors and support park operations. Human-caused sounds dominate the soundscape (e.g., vehicles, helicopters, construction and maintenance equipment, voices, cell phones, and radios). However, excessive noise and inappropriate sound sources are managed where possible (e.g., using quiet technologies and running vehicles and equipment for the minimum time necessary to perform a function). Natural zones of the park are managed to perpetuate natural conditions and processes undisturbed by humans. Natural sounds, including the absence of those sounds, dominate the soundscape. Although human-caused sounds are evident along the margins of these zones adjacent to roads and visitor use areas, these sounds are managed in a manner designed to minimize their impacts on natural sounds and visitor experience of natural sounds. Due to the extremely low ambient sound levels in the natural zones, even relatively low-level human-caused sound can be heard at great distances.

The types of sounds created by commercial services providers in developed zones within the summit and Kīpahulu areas of the park include vehicle sounds (vans, buses, and trucks), animal sounds (horses), walking and talking (VPI 2007b). The types of sounds created by commercial services providers in natural areas within the summit and Kīpahulu districts include aircraft sounds (air tour helicopters), animal sounds (horses), and walking and talking/loud voices sounds. Noise from helicopters, including commercial air tours and other sources, such as park administrative flights, are a primary source of noise in the Kīpahulu area (NPS 2008b; E. Gordon, pers. comm., October 25, 2010).

TABLE 8. NATURAL AMBIENT AND EXISTING AMBIENT LEVELS FOR DIFFERENT AREAS OF HALEAKALĀ NATIONAL PARK

Park Areas	Soundscape Zone	Natural Ambient (dBA)*	Existing Ambient (dBA)
Coastal Kīpahulu	Coastal Developed	38.0 [1] 45.3 [2]	38.9 [1] 43.5 – 46.1 [2]
West Crater Rim/ summit	Developed	23.6 – 27.7 [2]	27.2 – 28.4 [2]

Source: Lee et al. 2006 and Lynch and McCusker 2008

* It should be noted that Volpe and the National Park Service used different techniques to calculate natural ambient. These different techniques resulted in different estimates.

[1.] Lynch and McCusker 2008; daytime (7 a.m. to 7 p.m.)

[2.] Lee et al. 2006; daytime (6 a.m. to 6 p.m.), range reflects measurements taken at three different sites within coastal Kīpahulu, and two different sites within West Crater Rim/summit.

CULTURAL RESOURCES

As defined by NPS *Management Policies 2006* and Director's Order 28: *Cultural Resource Management*, a cultural resource may be a tangible entity or a cultural practice. For NPS management purposes, tangible cultural resources are categorized as archeological resources, cultural landscapes, historic structures, museum collections, and ethnographic resources. Because museum collections would not be affected by the management alternatives, this topic has been dismissed from consideration in this document (see the discussion of "Impact Topics Dismissed from Further Analysis" in chapter 1).

Archeological resources, cultural landscapes, historic structures, ethnographic resources and cultural practices are included as impact topics based on the criteria presented in "Impact Topics Chosen for Analysis" in chapter 1.

The cultural resources described below are located either within the boundaries of the Crater Historic District or the proposed Kīpahulu Historic District. The Crater Historic District (Hawai'i State Inventory of Historic Places Site # 50-50-11/12-1739) was listed in the National Register of Historic Places in 1974 for archeological and historical significance. The Kīpahulu Historic District (Hawai'i State Inventory of Historic Places Site # 50-50-17-299) was proposed for nomination to the National Register of Historic Places in 1973, 1975, and 1976 for archeological and historical significance.

BACKGROUND

Over 1,000 years before present, Polynesian peoples from islands such as the Marquesas, Society, and Cook navigated their way on outrigger canoes to the far-flung archipelago that has become known as Hawai'i. These superior seamen brought with them traditional practices and numerous species of familiar food, plants, and animals, but the unique species and resources at places like Haleakalā soon became a part of Hawaiian culture as well. Over the years, organization of land use and sharing of resources accompanied the changes in the natural environment occasioned by these new inhabitants.

During the late 1700s and early 1800s, European nations sent exploratory missions to the Pacific, and new species were imported to the islands to provide food and subsistence items. Large-scale trade became an important part of the subsistence economy, disrupting the traditional Hawaiian heritage of sharing (Rhodes 1993).

Following the death of Hawaiian King Kamehameha in 1819, traditional religious systems changed; numerous European Americans began to influence Hawaiian culture and acquired property in the islands. Haleakalā has a history of use by non-Hawaiians and federal agencies. The crater and the surrounding areas were used for hunting and cattle grazing. The park was established as part of Hawai'i National Park on August 1, 1916. Haleakalā National Park was named as a separate unit on September 13, 1960, and became a park in its own right a year later.

ARCHEOLOGICAL RESOURCES

As defined by NPS *Management Policies 2006*, the term *archeological resources* refers to any material remains or physical evidence of past human life or activities and includes precontact (prior to AD 1778) and historic sites and features. This document will not include specific descriptions or locations of

archeological resources. The nature and location of archeological resources can be withheld from disclosure to the public under section 304 of the National Historic Preservation Act and section 9 of the Archeological Resources Protection Act, if the federal land manager determines that disclosure may (1) cause a significant invasion of privacy; (2) risk harm to the resources or to the site at which such resources are located; or (3) impede the use of a traditional religious site by practitioners.

A total of 110 archeological sites, containing up to 111 features, have been recorded in the summit and wilderness areas of Haleakalā National Park (Carson and Mintmier 2006; Dye and Rosendahl 1977a, 1977b; Emory 1921; Jourdane and Peterson 1976; Komori and Oshima 1977; McEldowney 1977; Soehren 1963; Rosendahl 1975a, 1975b, 1977). These sites have been determined eligible for listing in the National Register of Historic Places through consultation with the Hawai'i state historic preservation officer under criterion C and/or D. These sites are associated with temporary encampments, resource collection, burials, astronomy, ceremonial purposes, rock art, and travel. Site types include, but are not limited to, walled shelters, platforms, lithic scatters, cairns, pavement, pictographs, rockshelters, caves, trails, and quarries. Data thus far suggest the earliest sites in these areas of the park date to AD 660–1030.

TABLE 9. ARCHEOLOGICAL SITES WITHIN 50 FEET OF AREAS USED BY COMMERCIAL SERVICE PROVIDERS IN SUMMIT AREAS

State Inventory of Historic Places Site #50-50-	Description
11-2511	Enclosures
11-3600	Cave
11-3637	Enclosures, mound
11-3641	Platform
11-3642	Cairns, rockshelter
11-3643	Cairn
11-3645	Enclosures, alignments
11-3646	Enclosures
11-3651	Multiple wall segments
11-3659	Platform
11-3660	Cairn
11-3673	Wall
11-3688	Rockshelter, wall

In the summit and of the park, 13 archeological sites (table 9) are near areas used by commercial service providers (the park road, visitor use areas, and trails).

A total of 47 archeological sites, containing up to 57 features, have been recorded in the Kīpahulu area of the Haleakalā National Park (Carson and Reeve 2008; Dye et al. 2002; Hoerman et al. 2008; Kornbacher 1992, 1993; Soehren 1963; Rosendahl 1976). These sites have been determined eligible for listing in the National Register of Historic Places through consultation with the Hawai'i state historic preservation officer under criterion A, C, and/or D. These are sites

associated with agriculture and animal husbandry, permanent residences, temporary encampments, and ceremonial purposes. Site types include, but are not limited to, mounds, terraces, walls, burials, platforms, enclosures, walled shelters, trails, and rockshelters. Data thus far suggest the earliest sites in this area of the park date to AD 1161–1384

In the Kīpahulu area of the park, nine archeological sites (table 10) are located within 50 feet of areas used by commercial service providers (visitor use areas and trails).

TABLE 10. ARCHEOLOGICAL SITES IN THE KĪPAHULU AREA WITHIN 50 FEET OF AREAS USED BY COMMERCIAL SERVICE PROVIDERS

State Inventory of Historic Places Site # 50-50-	Description
17-3560	Walls, mounds, enclosures, platform, rockshelter, modified outcrops
17-3570	Walls, enclosures, terraces, tomb, alignment
17-3572	Enclosure, terrace
17-3763	Enclosure, terraces, path, wall
17-3766	Enclosures
17-5613	Walls
17-5614	Walls, mound, terrace
17-5615	Terraces, mounds
17-5616	Platform, terraces, mound, walls

CULTURAL LANDSCAPES

As defined by NPS *Management Policies 2006*, the term *cultural landscapes* refers to geographic areas, including both cultural and natural resources, associated with a historic event, activity, or person. Cultural landscapes reveal the ties between people and the land.

The 10.6-mile park road is a cultural landscape (NPS 2008e), with contributing structures, that has been determined eligible for listing in the National Register of Historic Places through consultation with the Hawai'i state historic preservation officer for its association with NPS master planning during the 1930s and the NPS Mission 66 era (criterion A), and for its assemblage of buildings exemplifying the rustic and NPS modern styles of architecture and landscape architecture (criterion C). The period of significance for the park road extends from 1933 to 1966, beginning with the initial construction of the road and ending with Mission 66-related improvements/expansions of development nodes (such as Red Hill and Kalahaku Overlook) along the road that furthers the park's mission to enhance visitor access to the Haleakalā Crater.

HISTORIC STRUCTURES

There are 54 historic structures within the park that have been determined eligible for listing in the National Register of Historic Places through consultation with the Hawai'i state historic preservation officer under criterion A or C and are listed in the National Park Service List of Classified Structures (table 11). Thirteen historic structures are located within areas used by commercial services providers.

TABLE 11. LIST OF CLASSIFIED STRUCTURES

LCS ID #	Historic Structure Name	Current Structure Name and Number	Location
058233	Headquarters Bridge on Park Road		summit
759229	Haleakalā Park Road	Haleakalā Highway, Route 10	summit
058223	Large Masonry Culverts		summit
759220	Small Masonry Culverts		summit
759226	Kalahaku Overlook	same, HQ-28	summit
759228	Leleiwi Overlook	same, HQ-29	summit
759223	Red Hill Observatory	Summit Observatory, HQ-24	summit
759225	Red Hill Stairs		summit
006737	White Hill Observatory	Haleakalā Visitor Center, HQ-24	summit
759222	White Hill Trail	same	summit
014019	George Kewalo Kanalulu House	Kanalulu House	Kīpahulu
014022	Kapahu Taro Patches and Walls	Kapahu Farm	Kīpahulu
006736	ʻOheʻo Gulch Sugar Cane Flume Towers		Kīpahulu

ETHNOGRAPHIC RESOURCES AND CULTURAL PRACTICES

Ethnographic Resources

As defined by NPS *Management Policies 2006*, the term *ethnographic resources* refers to objects and places, including sites, structures, landscapes, and natural resources with traditional cultural meaning and value to associated peoples. The areas comprising Haleakalā National Park have cultural and spiritual value to Native Hawaiians who have used these areas for a broad range of activities from ancient times up to the present. Native Hawaiians are the lineal descendants of the aboriginal, indigenous, native people who, prior to January 1, 1893, occupied and exercised sovereignty in the area that now constitutes the State of Hawaiʻi.

Hawaiian traditions tell that Pele (Goddess of Fire) created the crater and all the cinder cones and vents in the crater at Haleakalā during her search for fire (CKM Cultural Resources 1998). Pele was killed here during an epic battle with her sister Namakaokahai; legend indicates the bones of Pele remain as a hill called Ka-iwi-o-Pele. According to Hawaiian traditions, Haleakalā Crater was home to the grandmother of the demigod Maui. The ancient name for Haleakalā is Alehe-la, so called because, with his grandmother's help, the demigod Maui snared the rays of the sun to slow its journey across the sky so the day would be lengthened and his mother might be able to dry her kapas (Lemuel K.N. Papa, Jr. in Fornander 1916/1917; Thomas Maunupau in Sterling 1998; see also Ala Hea Ka La in CKM Cultural Resources 1998).

The summit of Haleakalā, including Haleakalā Crater, Kīpahulu Valley, and Kaupō Gaphave been determined eligible for listing in the National Register of Historic Places through consultation with the Hawai'i state historic preservation officer as a traditional cultural property. This term, *traditional cultural property*, is used to identify a property eligible for inclusion in the national register because of its association with cultural practices or beliefs of a living community that (1) are rooted in that community's history; and (2) are important in maintaining the continuing cultural identity of the community.

The summit of Haleakalā is significant under criterion A for its association with the cultural landscape of Maui—reflected in the number of known uses, oral history, mele, and legends surrounding Haleakalā—and under criterion C because it is an example of a resource type, a natural summit, and a source for both traditional materials and sacred uses. The value ascribed to Haleakalā as a traditional cultural property can be expressed in five distinct attributes, solidifying the role of the summit as a place of value:

1. The Haleakalā summit is considered by Native Hawaiians, as well as more recent arrivals to Hawai'i, as a place exhibiting spiritual power.
2. The summit of Haleakalā is significant as a traditional cultural place because of practice.
3. For both Hawaiians and non-Hawaiians who live and visit here, the summit is a place of reflection and rejuvenation.
4. The mo'olelo and oli surrounding the summit present a cluster of stories suggesting the significance of Haleakalā as a traditional cultural property.
5. Some believe that the summit possesses therapeutic qualities.
6. The summit provides an "experience of place" that is remarkable.

Cultural Practices

The National Park Service supports the perpetuation of traditional cultural practices within areas of Haleakalā National Park, as appropriate under NPS policy. There are several types of traditional cultural practices that have and continue to take place within the park in areas used by commercial services providers. These practices are described below. Some of these practices require silence and solace and may also require an uninterrupted view plane and sacred space. Based on park entrance station information, 4,127 Hawaiians entered the summit area of the park and 1,351 Hawaiians entered the Kīpahulu area of the park for traditional cultural practices in 2008. In 2009, 4,857 Hawaiians entered the summit area of the park and 837 Hawaiians entered the Kīpahulu area of the park for traditional cultural practices. In 2010, 2,993 Hawaiians entered the summit area of the park and 493 Hawaiians entered the Kīpahulu area of the park to conduct traditional cultural practices.

Gathering of Plants. The gathering of plants found on the slopes and around the summit of Haleakalā for traditional uses has been documented in Abbott (1992), Dagan et al. (2007), Maxwell (2002), and Prasad and Tomonari-Tuggle (2008). Table 12 identifies some of these plants.

TABLE 12. PLANTS GATHERED FOR TRADITIONAL USE

Hawaiian Name	Common Name	Latin Name	Traditional (including contemporary) Uses
ʻAʻaliʻi	—	*Dodonaea viscosa*	Trunks and branches used to make house posts; fruit clusters woven into *lei* (Neal 1948)
ʻĀhinahina **	Haleakalā silversword	*Argyroxiphium sandwicense* ssp. *macrocephalum*	Used in *lei* making (this variety is only known from Maui)
ʻAhina kuahiwi	—	*Cyrtomium caryotideum*	Native fern used for medicines; also called *Kaʻapeʻape* or *ʻApeʻape*
ʻAkoko		*Chamaesyce sp,*	Used in laʻau lapaʻau (to rejuvenate red blood cells)
ʻAwa	kava	*Piper methysticum*	Used with leaves of sandalwood in medicines
Hōʻio		*Diplazium arnottii*	Young fronds are eaten raw with freshwater shrimp or salted salmon.
ʻIliahi	sandalwood	*Santalum freycinetianum*	Used to scent tapa cloth; wood used to make *ʻūkēkē*, a musical bow (the only traditional Hawaiian stringed instrument); leaves used in medicines
Maile	—	*Alyxia olivaeformis*	Gathered from Kaupō area for use in *lei* making
Māmane	—	*Sophora chrysophylla*	Trunks and branches used to make *oʻo* (digging stick), house poles/posts, and *hōlua* sleds; also weapons such as spears; also called *Kolomona*
Mauʻu lāʻili	native Iris	*Sisyrinchium acre*	Used to treat skin disorders; sap used "to stain the skin so that travelers could prove to others at home that they had been to the volcano" (Pukui and Elbert 1986:243)
ʻŌhelo	—	*Vaccinium reticulatum*	Berries are edible raw or cooked in a sauce; dried leaves used for tea; plant is sacred to Pele (Pukui and Elbert 1986:277)
ʻŌhiʻa lehua	—	*Metrosideros polymorpha*	Blossoms used in *lei* making; wood used for images, spears, mallets (Neal 1948)
Pōpolo	black nightshade	*Solanum americanum*	Leaves used in *laʻau lapaʻau* (traditional medicinal practices); relieves sore tendons, muscles, and joints
Pūkiawe	—	*Styphelia tameiameiae*	*Haku lei* making; leaves used medicinally for colds or headaches (Neal 1948); food for the *nēnē* (*Nesochen sandvicensis*)

**Threatened plant species

Birth and Burial Practices. Haleakalā has a long tradition of being a location for cultural practices related to birth and burial. At least two places within Haleakalā Crater are noted as receptacles for the disposal of piko (umbilical cords) (Prasad and Tomonari-Tuggle 2008). The piko was important to the physical and spiritual development of a growing child (C. Maxwell, in Kailihiwa and Cleghorn 2003), so care was taken in disposing of the piko so that "nothing dire would happen to the child." In particular, Haleakalā was important for burying the piko of children of both Kāne worshippers ("for that is where the sun rises up in the east") and Pele worshippers (Kalei Tsuha, in Kailihiwa and Cleghorn 2003). There are also known ancient burial sites within Haleakalā Crater. One of the best sources of knowledge about these burials is Charlie Maxwell:

> Haleakalā is a burial ground . . . the entire crater was used as a receptacle for disposal of the burials because that's a wahi pana. Wahi pana is where the gods live (Prasad and Tomonari-Tuggle 2008).

Astronomy. As described in oli (chants) and the moʻolelo (stories), the summit of Haleakalā was used for a training ground in the arts of reading the stars and being one with the celestial entities above, and was considered sacred because of its height and closeness to the heavens. Astronomical matters, both practical and ceremonial, may have been the basis for the most important activities at Haleakalā. All of the possible traditional names for the mountain are associated with tales of the demigod Maui and his efforts to catch and slow the sun. These tales involve two aspects—one is the perception of Haleakalā reaching to the sky and the other is Haleakalā as a place where the observation of solar movement (i.e., marking of seasons) took place (Prasad and Tomonari-Tuggle 2008). The recognition of Haleakalā as a place to study the sun and constellations continues into modern times (Prasad and Tomonari-Tuggle 2008).

Travel. Haleakalā has long been recognized as a traditional traveling route through East Maui. There are various trails within Haleakalā Crater, some of which are ancient, while others have been created in contemporary times. Charlie Maxwell describes the Kiha-a-Piʻilani Trail, which served as a major "artery" for ancient Hawaiians:

> . . . the trail throughout the crater called the Piʻilani Trail, goes through the ʻAʻā, the most rugged lava. In the most rugged of lava, there is this paved highway. This was used for catching, taking fresh fish. They [runners] used to run from Keʻanae to Kula, straight. And there there's another trail that went underground in ancient times. And I think we found it, going through a cave. . .right across the crater [from Keʻanae to Kula] (Prasad and Tomonari-Tuggle 2008).

Performance of Ceremonies and Spiritual Training. Most of the rituals and ceremonies that continue to be practiced on Haleakalā are not known to the public because they are kept secret for personal reasons or to maintain the integrity or particular rituals from generation to generation. The best known ritual to non-Native Hawaiians is the Calling of the Sun (e ala e), which is a chant used to greet ancestors, Kūpuna, and [also] greet the sun as it rises (Dagan et al. 2007). Kumu Hula take students to Haleakalā. Kumu Hula Charlotte Nina Maxwell describes why it is important to be at the mountain when performing traditional ceremonies and storytelling (interviewed by Charlie Maxwell, quoted in Maxwell 2002):

> . . . as Kumu Hula for over 30 years, I have traveled to Haleakalā many times for spiritual guidance. In doing chants or moʻolelo (storytelling), you must go to the source, to the inspiration that connects you so that you may experience the spiritual essence of what you are trying to convey. It is not something that you can hold in your hand, it is not

> tangible, but you actually can feel the presence of the Gods.

Charlie Maxwell (2002) describes the spiritual use of the mountain, where only the kahuna poʻo and his haumāna (students) were allowed to stay at Haleakalā for extended periods, and even then, only for the time needed to complete the ritual/ceremonial practice:

> The ancient spiritual use of the mountain was for meditation and receiving of spiritual information by the Kāhuna Poʻo. It is a place where the tones of ancient prayer are balanced within the vortex of energy for spiritual manifestations. In ancient times, only Kāhuna and their haumāna lived at Haleakalā for conducting their initiation rites and practices. Commoners were not allowed anywhere on the summit of Haleakalā, with the exception of practitioners, who were practicing their arts.

Certain times of the day, month, or year are considered important to practitioners because at these times the sun is at zenith; but the times, dates, and days can vary between practitioners. In response to the question about the important times for Hawaiians to be able to access to the mountain, Hokulani Holt-Padilla replied:

> Beginning and ending of Makahiki, the solstices and the equinoxes, would be obviously important times. To certain cultural practitioners, certain other times in the Hawaiian lunar calendar are important. But that's more of an individual or the group…you know Kāne guys will want to do Kāne nights, and Lono guys will want to do Lono nights. That's a little more group-specific for lack of a better word (Prasad and Tomonari-Tuggle 2008).

Farming. Subsistence farming still takes place in East Maui, but to a much lesser degree than either fishing or hunting. At the 5-acre Kapahu farm located in the Kīpahulu area of the park, traditional Hawaiian agriculture is being practiced and demonstrated to visitors by the Kīpahulu Ohana (Native Hawaiian group) under a general agreement with the park. Tweetie Lind refers to the farming that she and her husband John are doing as "indigenous farming" (Prasad and Tomonari-Tuggle 2008). They have largely restored the loʻi at Kapahu. They also have restored much of the ancient ʻauwai (drainage ditch) that runs alongside of the loʻi.

VISITOR USE AND EXPERIENCE

TRENDS

Whether enjoying the Haleakalā summit area or exploring coastal Kīpahulu, park visitors have a variety of opportunities to experience solitude, a sense of adventure, and a connection with the natural and cultural heritage of the park. Over the years, visitors have participated in a range of recreational activities including hiking, camping, scenic driving, walking to viewpoints, stargazing and astronomy, attending ranger programs, swimming, horseback riding, and bicycling.

Park visitation has fluctuated over the last 15 years, peaking at nearly 2 million in 1999 and declining to 1.1 million in 2010 (see figure 5). Gradual decreases in overall park visitation have occurred over the last five years ranging from 1.4 million in 2005 to 1.1 million in 2010. As shown in figure 6, visitation usually peaks during the months of June, July, and August and is lowest during the months of November and February (NPS Public Use Statistic Office 2012). Figure 7 compares the monthly visitation levels at the summit area to the Kīpahulu area. In general, more park visitors go to the summit than to the Kīpahulu area each year (NPS Public Use Statistic Office 2012). It should be noted that the dramatic decline in visitation as shown in figures 5 and 6 during November of 2007 and 2008 are due to a variety of factors. An earthquake occurred in 2006 closing the road to Kīpahulu. Because of this event and staffing issues within the park, delayed data entry and varied methodology for entering visitor use statistics has caused discrepancies in the resulting figures during 2006–2008 seasons (Manion, pers. comm. 2011a).

It should be specifically noted that the drop in 2008 visitation levels represented by figure 7 at the Kīpahulu area was due to an anomaly in data. The number of visitors estimated by the NPS Public Use Statistics Office in figures 5, 6, and 7 represents all recreation visitors including commercial use groups. Nonrecreation visitors are not included in the figures. However, an estimated 29,000 nonrecreation visitors come to Haleakalā National Park each year, or about 2,400 each month. Nonrecreational visitors may include employees, vendors, contractors, emergency vehicles, or any vehicle that trips the car counter, but whose occupants are not involved in a recreational activity.

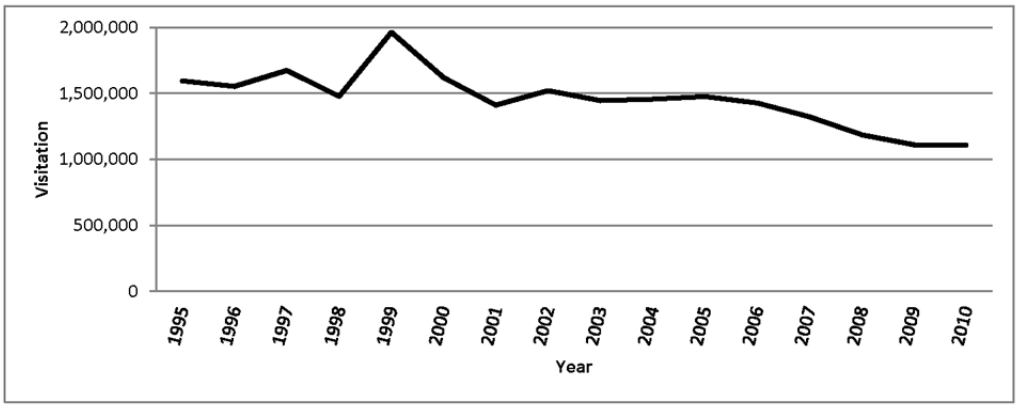


FIGURE 5. ANNUAL VISITATION (NPS PUBLIC USE STATISTIC OFFICE 2012)

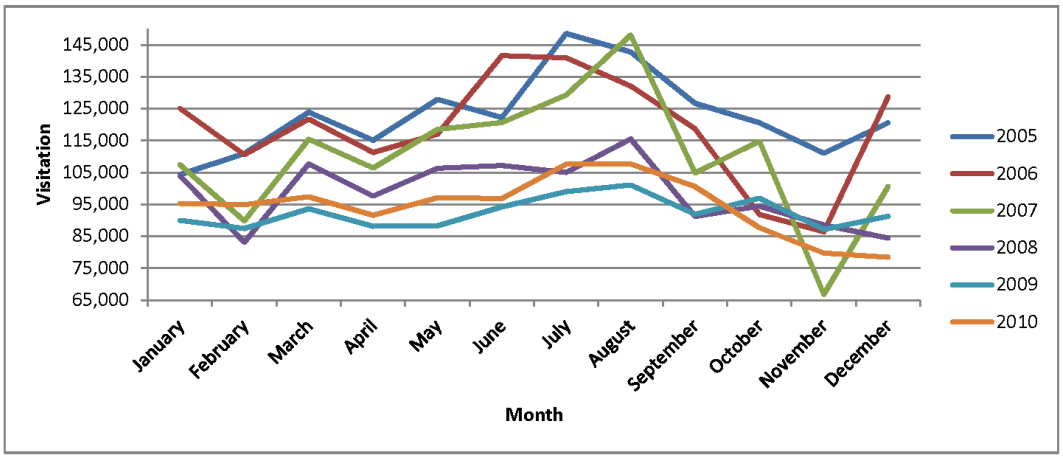
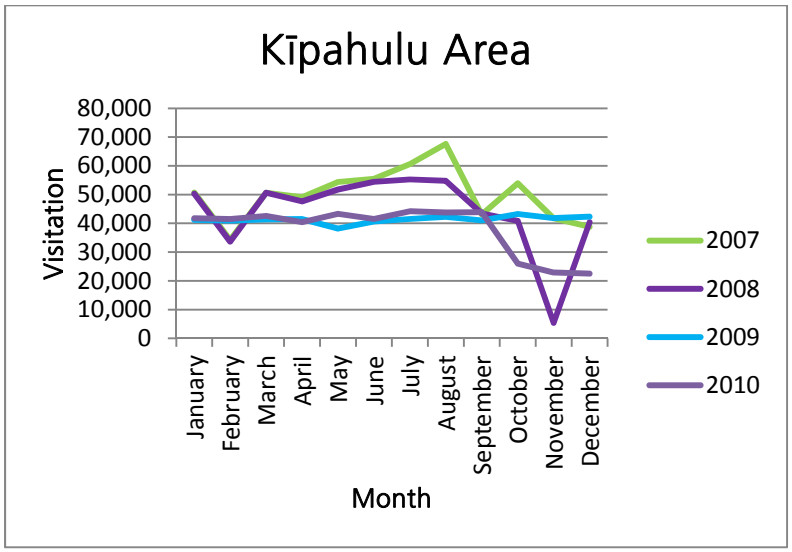


FIGURE 6. MONTHLY VISITATION 2005–20010 (NPS PUBLIC USE STATISTICS OFFICE 2012)



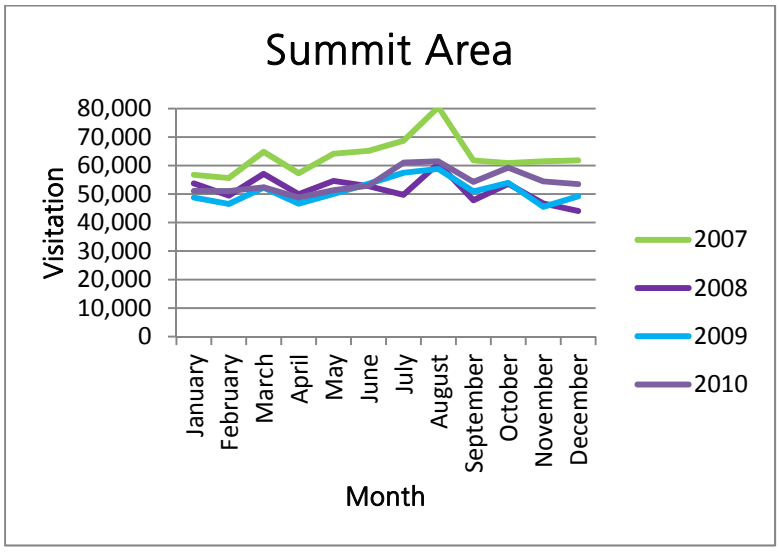


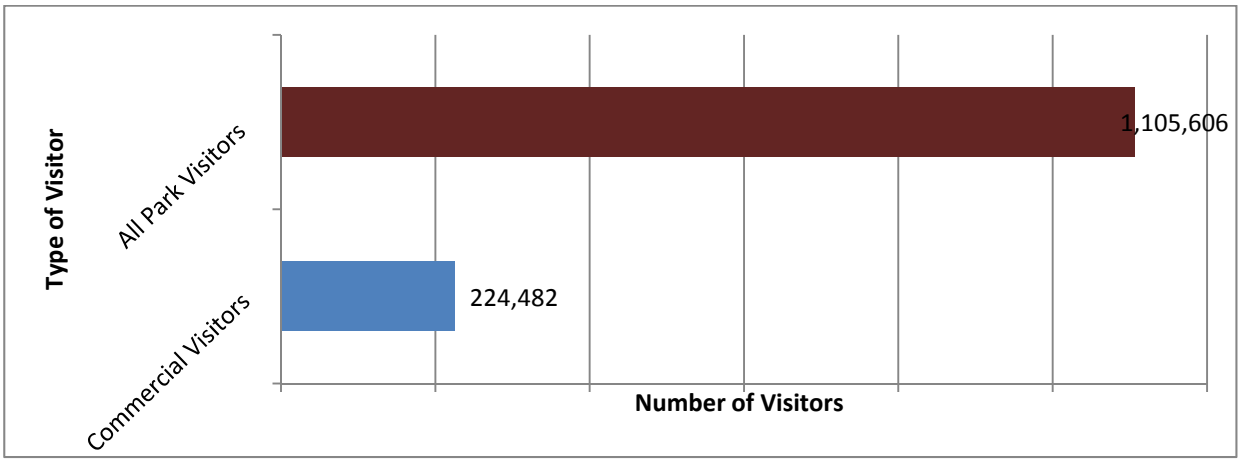
FIGURE 7. MONTHLY VISITATION 2007–2010 BY PARK AREA (NPS PUBLIC USE STATISTICS OFFICE 2012)

Although many visitors tour the park on their own or in private groups, others experience the park with commercial tours.

Current CUA holders provide astronomy tours, hiking tours, horseback tours, and road-based vehicle tours. See table 13 for a list of current CUA holders and the number of visitors using each provider in 2010. As noted in table 13, hiking and horse tours from the summit to the wilderness were not included in the scope of this plan.

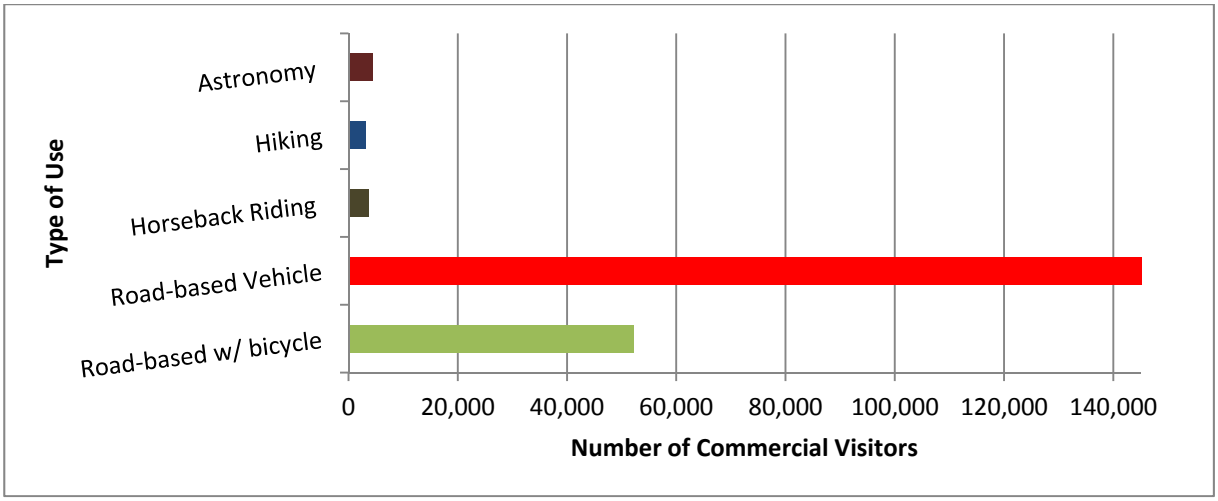
Before the "Downhill Bicycle Tour Safety Stand Down" in October 2007, CUA holders were also providing bicycle tours from the summit area. Since the stand down, several bicycle tour companies have modified their packages to offer road-based tours to the summit area at sunrise followed by bicycling tours outside the park boundary. In 2010, 20% of park visitors used commercial services (see figure 9). The number of visitors using each type of commercial service is also displayed in figure 9. In

general, an estimated 15%–30% of Haleakalā National Park's visitors are accompanied by commercial services providers each year, but the percentage reaches as high as 50% of Haleakalā summit visitors during sunrise. Thus, the types and levels of commercial uses in the park affect all visitors. In particular, the number and diversity of commercial activities can affect opportunities for solitude and quiet, the level and quality of interpretation and education provided to visitors, and access to and quality of visitor experiences.



Source: Public Use Statistics Office 2012, Haleakalā National Park Annual Reports for CUA Holders 2010

FIGURE 8. 2010 VISITATION



Source: Haleakalā National Park Annual Reports for CUA Holders 2010

FIGURE 9. NUMBER AND TYPE OF CUA CLIENTS IN 2010

TABLE 13. 2010 CUA TOUR OPERATORS

CUA Holder	CUA Type	Total # of Clients Served	# Clients Summit Only	# Clients Kīpahulu Only
Magic Maui Inc.	Astronomy	1504	1504	0
Travel Plaza Transportation	Astronomy	1204	1204	0
Kaze Enterprises LLC	Astronomy	1700	1500	200
Star Gazers Maui	N/A			
Pulani Adventures	Hiking / Astronomy	1713	1262	451
Hike Maui	Hiking	1406	Not included in the scope of this plan	1035
Latatudes and Adatudes	N/A			
The World Outdoors	Hiking	0	Not included in the scope of this plan	0
Reiseagentur Branner	Hiking	135	Not included in the scope of this plan	135
Wigwam Tours	No report submitted			
Kīpahulu ʻOhana	Hiking	31	Not included in the scope of this plan	31
Charley's Trail Rides	Horseback Riding	0	Not included in the scope of this plan	0
Maui Horseback Tours	Horseback Riding	1245	Not included in the scope of this plan	1245
Pony Express	Horseback Riding	2533	Not included in the scope of this plan	0
Akina Aloha Tours	Road-based Vehicle Tour	214	214	0
Ekahi Tours Inc	N/A			
Island Exclusive	Road-based Vehicle Tour	20	20	0
Aloha Maui Limousine	Road-based Vehicle Tour	80	80	0
Maui Koryu Travel & Tour	Road-based Vehicle Tour	5525	5525	0
Merry China Travel	Road-based Vehicle Tour	538	538	0
Myna Tours	Road-based Vehicle Tour	85	85	0
Polynesian Adventure Tours	Road-based Vehicle Tour	101298	71758	29540
Robert's Hawaii Tours	Road-based Vehicle Tour	18598	13265	5333
Temptation Tours, Inc.	Road-based Vehicle Tour	1541	1537	4
Travel Plaza Transportation, LLC	Road-based Vehicle Tour	8022	8022	0

TABLE 13. 2010 CUA TOUR OPERATORS

CUA Holder	CUA Type	Total # of Clients Served	# Clients Summit Only	# Clients Kīpahulu Only
Valley Isle Excursions	Road-based Vehicle Tour	24873	0	24873
Bike It Maui No Ka Oi	*Road-based with bicycle option	3887	3887	0
Cruiser Phil's Volcano Riders	*Road-based with bicycle option	6111	6111	0
Haleakalā Bike Company	*Road-based with bicycle option	11986	11986	0
Maui Downhill	*Road-based with bicycle option	10565	10565	0
Maui Mountain Cruisers	*Road-based with bicycle option	7663	7663	0
Mountain Riders	*Road-based with bicycle option	6543	6543	0
Maui Sunriders Bike CO.	*Road-based with bicycle option	5462	5462	0

Source: Haleakalā National Park Annual Reports for Commercial Use Authorization Holders 2010

Note: Those businesses listed N/A above for 2010 did not hold a CUA.

*Downhill bicycle tours are not permitted within the boundaries of the Haleakalā National Park. The following companies provide a road-based vehicle tour within the park and start bike tours outside the park.

**Indicates a discrepancy in the way the data were reported.

AREA SPECIFIC OPPORTUNITIES

Visitors come to Haleakalā National Park to experience the natural and Native Hawaiian cultural wonders the park was designated to protect. A brief description for opportunities in each area of Haleakalā National Park follows.

Summit

The most traveled access corridor into the park is Highway 378, continuing as the main park road to the summit of Haleakalā. The journey to the crater rim takes the visitor up a narrow, winding road from sea level to the subalpine shrubland and a remote alpine landscape. After paying the park entrance fee, visitors can stop at the headquarters visitor center (elevation 7,000 feet above sea level) before continuing to the summit. Puʻuʻulaʻula (Red Hill) is the highest point on Maui (10,023 feet above sea level) and is the site for viewing sunrise, sunset, and celestial events. Visitor use areas at the summit include the Haleakalā Visitor Center on the crater rim and the Red Hill overlook located at the summit crest. Kalahaku Overlook is another option for parking near the summit area. From these vantage points, other islands of the Hawaiian chain can be seen. Cinder cones, silverswords, native birds, scenic views, and natural sounds are a few of the resources that visitors can experience in this part of the park. The landscape of the summit is rocky, sparsely vegetated, richly colored, and subject to dramatic weather changes during the day.

Kīpahulu

The Kīpahulu area, on the southeastern end of Maui, can be accessed by driving 10 miles past the town of Hana, on the famous Hana

Road that circumscribes the northeast coast of Maui. The site is remote with driving times from the north side of the island being an hour or more. The Kīpahulu area encompasses both the easily accessed coastal section and the highly restricted, biological reserve that is closed for scientific research and management work.

Kīpahulu is a lush tropical rainforest sitting atop a seaside cliff. The weather is humid, warm to hot depending on the season, and prone to sudden heavy rains and winds. Whales, turtles, dolphins, and seabirds can sometimes be seen offshore. The setting provides visitors with hiking opportunities, education about Native Hawaiian culture, and the chance to experience the stream in ʻOheʻo Gulch. There are scheduled cultural demonstrations in the visitor center. Layers of history are laid out before the visitor as they explore the way that people have interacted with the land here for hundreds of years.

NUMBER AND DIVERSITY OF COMMERCIAL ACTIVITIES

The commercial services provided in the park vary based on location and the types of experiences that are supported in these locations. The nature of visitor opportunities and the associated commercial services for specific areas of the park are discussed below.

Summit

The Haleakalā Visitor Center provides educational and interpretive materials about park resources and related information at the Hawaii Pacific Parks Association bookstore. Additional commercial services provided at the summit include road-based tours (especially for sunrise viewing), horseback tours, hiking tours, and astronomy tours/lectures. Details about horseback and hiking tours that enter the wilderness area will not be covered under the scope of this plan, but will be addressed as part of the wilderness stewardship plan. Although bicycle tours are not allowed within park boundaries, some of the road-based tours provide a bicycling option outside of park boundaries after taking visitors to the summit to experience the sunrise. Sunrise tours are limited to CUA holders who have maintained a current commercial use authorization with sunrise authorization since 2006. Each company is allowed to have two commercial vehicles (not exceeding 25 passenger minibuses) and can park only in the Haleakalā Visitor Center parking lot until 20 minutes after sunrise.

Astronomy tours generally cater to international tourists. Of the four astronomy providers with commercial use authorizations, only one operates at sunrise. The others come to the park at sunset and remain in the park for a few hours after dark. This service is available most nights of the week and the stargazing groups are generally small. Approximately 4,208 visitors used astronomy services in the summit area in 2010. Astronomy tours are restricted to the paved areas and may use up to three adjacent parking stalls for vehicles. Equipment may be placed in the crosshatch area.

Nineteen road-based vehicle tour companies bring visitors to Haleakalā National Park. These tours also include visits to other sites of interest on Maui that are not focused on the park. Approximately 153,261 people visited the summit on road-base tours in 2010. Of those, 52,217 also participated in tours with a bicycling option once outside of the park (Haleakalā National Park Annual Reports for Commercial Use Authorization Holders 2010).

Kīpahulu

The commercial visitor services currently provided at Kīpahulu include the HPPA bookstore at the visitor center, road-based tours, horseback riding, and guided hiking. Four hiking companies regularly visit

Kīpahulu. Commercially led hiking is typically a 2-mile trek to Waimoku Falls. In 2010, 1,652 park visitors used commercial hiking services at Kīpahulu.

View to Waimoku Falls

There is currently only one permittee for guided horseback riding at Kīpahulu. This provider offers a 2-mile trek each way to see the waterfalls. Up to two tours are offered per day, with a maximum of 12 riders (including guides). This activity features both cultural and natural resource education and interpretation. Approximately 1,245 visitors used commercial horseback riding services at Kīpahulu in 2010.

In 2010, road-based tours to the Kīpahulu area were offered by six of the commercial service providers that serve the summit. Due to the narrow, winding road conditions on this side of Maui, only smaller multipassenger vans (maximum 25 passengers) are permitted to tour this area. These tours often visit other sites on Maui and are not focused solely on the park. According to the park records for commercial use authorization holders, approximately 59,746 commercial visitors visited Kīpahulu on road-based tours in 2010.

ACCESS AND QUALITY OF EXPERIENCE

Summit

Attending sunrise is a popular activity for both commercial and noncommercial visitors to Haleakalā National Park. Availability of commercial services provides many visitors with opportunities that otherwise may not be available due to lack of options, skill, or awareness. In this way, commercial services are facilitating access, and many visitors are satisfied with their experiences. Unfortunately, crowding and congestion have affected many visitor experiences during the sunrise at the summit and has detracted from understanding of the area as a sacred place. Conflicts have occurred between guided tour groups and individual visitors vying for parking spaces and for standing and viewing spaces. In a visitor survey conducted by the University of Idaho in 2000, respondents at the summit area provided feedback on a variety of important visitor use topics including commercial activities, safety, crowding, and interpretation. Visitors to the summit area were asked to rate how crowded they felt by other people during their visit. Some visitors to the summit did not feel crowded at all (44%), yet the rest of the visitors (56%) felt somewhat crowded, crowded, very crowded, or extremely crowded (see figure 10). Most of the visitors (82%) felt crowded during the morning from 4 a.m. to noon. Another visitor study was completed by the University of Vermont in 2004; visitor surveys and observations were conducted in the park. A large portion of the visitor survey was designed to address visitor-based standards of quality for crowding-related issues (University of Vermont 2004). This survey found that many visitors rated the numbers of people at viewing areas and the Haleakalā Visitor Center as one of the biggest problems in the park. The survey respondents also believed that the number of commercial groups was another one of the park's biggest problems.

CROWDED SUMMIT AREA PARKING AT SUNRISE

In addition to seeking certain experiential conditions, visitors come to national parks with an expectation of finding pristine resource conditions in both frontcountry and backcountry areas. A study by Virginia Polytechnic Institute and State University (2009) identified concerns for summit area natural and cultural resources and values due to impacts from high visitation. These include running over native plant and animal habitat and blocked viewsheds due to vehicles parked along road edges. These conditions degrade the national park experience and offend cultural resource values (Marion 2009).

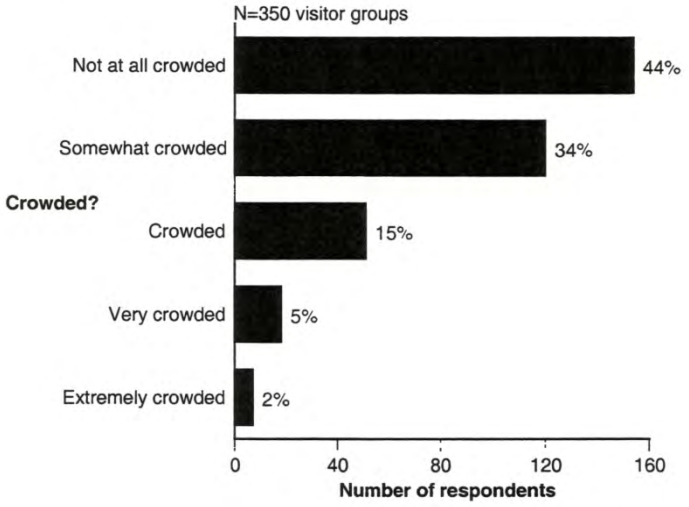


FIGURE 10. LEVEL OF CROWDING BY PEOPLE AT SUMMIT (UNIVERSITY OF IDAHO 2000)

Kīpahulu

Visitors to the Kīpahulu area have many options for active and passive recreation, and for exploration of the area. Some of the reasons that visitors enjoy the Kīpahulu area the most include taking a trip to the waterfalls and ʻOheʻo Pools, enjoying the scenery and views, and experiencing the ocean coastline and natural features in the area (VPI 2008b). However, many Kīpahulu tours have similar schedules and itineraries, which results in companies arriving at the same time. The outcome is often crowding and traffic congestion. In a visitor survey conducted by the University of Idaho (2000), respondents at the Kīpahulu area provided feedback on a variety of important visitor use topics including commercial activities, safety, crowding, and interpretation. Visitors to the Kīpahulu area were asked to rate how crowded they felt by other people during their visit. At Kīpahulu, 28% of visitors did not feel crowded at all and the rest of the respondents (72%) felt somewhat crowded, crowded, very crowded, or extremely

crowded (see figure 11). Most of the visitors felt crowded during the afternoon from noon to 6 p.m. In another survey by Virginia Polytechnic Institute and State University, about one-fifth of visitors reported that crowds and the behavior of other visitors was what they like least about their visit to the Kīpahulu area of the park (VPI 2007a). Other issues identified by visitors included evidence of visitors going off trail and trampling vegetation, poor trail conditions, lack of ranger-led programs, and difficulty way finding (VPI 2007a).

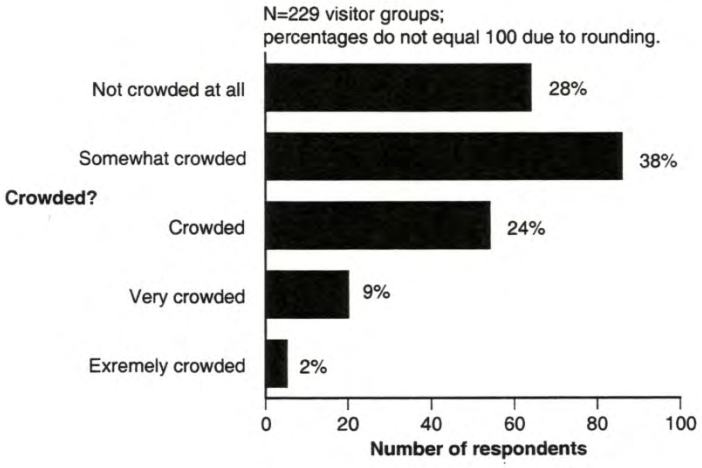


FIGURE 11 LEVEL OF CROWDING BY PEOPLE AT KĪPAHULU (UNIVERSITY OF IDAHO 2000)

OPPORTUNITIES FOR SOLITUDE AND QUIET

The opportunity to experience solitude, quiet, and natural sounds are important when defining the quality of visitor experiences in parks (Gramann 1999). In fact, a survey of the American public showed that 95% of people believed that experiencing natural peace and the sounds of nature were important reasons to preserve national parks (Haas and Wakefield 1998). Another survey of park visitors showed that 91% of respondents believed that enjoyment of natural quiet and the sounds of nature were compelling reasons for visiting national parks (McDonald et al. 1995).

For the visitor use and experience section only, soundscapes refer to the human perception of the acoustical environment. Similarly, quiet has been defined as the absence of human caused noise. By stating that an area is quiet does not necessarily mean that there is no sound. It means there is no human-caused noise interfering with appropriate natural, cultural, or historical sounds or the type of visitor experience desired for particular areas of the park. It is important to note these distinctions to prevent confusion with similar definitions in the "Soundscapes" section of this document. In summer 2007, a study was conducted by Virginia Polytechnic Institute and State University that evaluated visitor responses to Haleakalā soundscapes. Surveys were conducted on the trail to Waimoku Falls in the Kīpahulu area. Relevant findings from the survey are summarized in figure 12. The

figures show the percentage of visitors who heard specified sounds at this location as well as the mean rating for those sounds. For example, natural sounds such as wind, bird song, flowing water, and waves were rated as very acceptable for the specified location. However, human-caused sounds, such as loud groups and aircraft, were generally rated as unacceptable.

Soundscapes are not only valued by visitors, but have been identified by the National Park Service as a resource that must be protected. Haleakalā National Park is managed to protect resources and experiential values that are fundamental to its purpose and significance, including the natural, cultural, and historical soundscapes of Haleakalā. It should be noted that the natural ambient sound level—that is, the environment of sound that exists in the absence of human-caused noise—is the baseline condition, and the standard against which current conditions in a soundscape [acoustic resource] will be measured and evaluated" (NPS 2006b). However, the desired acoustic condition may also depend upon the resources and the values of the park, the land use, and the kinds of activities and developments that are appropriate for the purpose of the park. For instance, "culturally appropriate sounds are important elements of the national park experience in many parks (NPS 2006b).

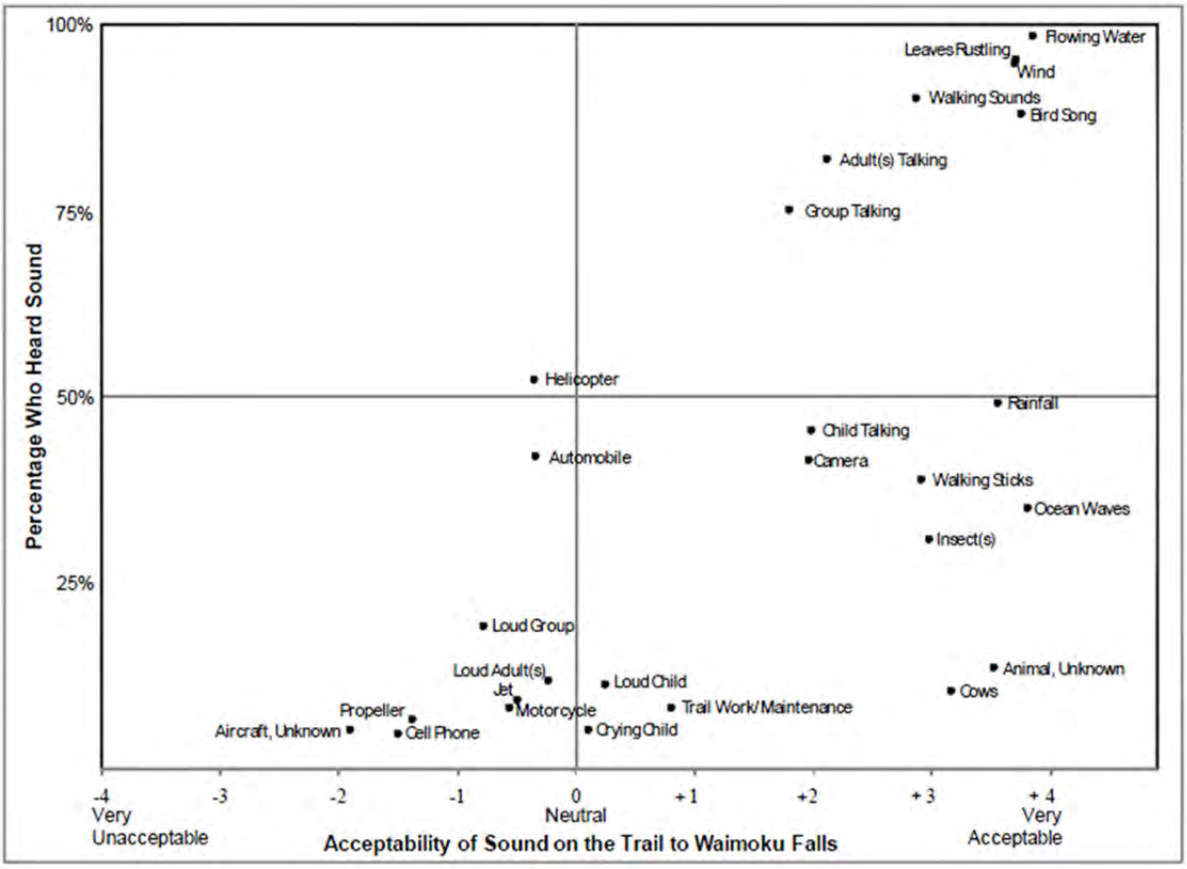


FIGURE 12. VISITORS' MEAN ACCEPTABILITY RATINGS OF SOUNDS HEARD DURING ATTENDED LISTENING ON THE TRAIL TO WAIMOKU FALLS BY PERCENTAGE OF VISITORS WHO HEARD EACH SOUND (VPI 2007B)

The National Park Service Natural Sounds Program conducted acoustical monitoring at three locations within Haleakalā National Park in spring 2008. The two monitoring

locations relevant to this plan include Halemauʻu Trail and the Kīpahulu area. Although acoustic measurements were not taken specifically to investigate areas where CUA tours operate, some of the locations overlap. Therefore, basic findings from this monitoring effort are useful for considering cumulative impacts in this commercial services plan. Overall, the NPS Natural Sounds Program staff found the selected sites to be affected by extrinsic noise most during daytime hours. The dominant extrinsic noise from 7 a.m. to 7 p.m. at all sites was helicopters, while the dominant noise source from 7 p.m. to 7 a.m. was high altitude jets (Lynch and McCusker 2008). During peak morning hours, helicopters were audible between 35% and 41% of the time. Propellers were also audible during both time periods, but less frequently. Yearly air tour overflight operations were estimated to be 3,452 for south slope (Rain Gauge) and 9,344 for the Kīpahulu area (Lynch and McCusker 2008).

As a reference point for helicopter noise as compared to other common sounds, table 14 shows a list of common sound sources and their corresponding decibel levels. Similarly, table 15 represents the relevance of certain decibel levels and possible effects they may have on visitors. It is useful to know that 52 dBA is loud enough to interrupt an interpretive program, and 60 dBA would prevent a person from having a conversation with a friend.

TABLE 14. INTERPRETING SOUND LEVELS

Park Sound Sources	Common Sound Sources	dBA
Crater (Haleakalā NP)	Human breathing at 3 meters	10
Leaves rustling (Canyonlands NP)	Whispering	20
Crickets at 5m (Zion NP)	Residential area at night	40
Conversation at 5m (Whitman Mission National Historic Site)	Busy restaurant	60
Snowcoach at 30m (Yellowstone NP)	Curbside of busy street	80
	Helicopter Overflight (Eurocopter EC 130 at 200 feet above ground level)	85
Thunder (Arches NP)	Jackhammer at 2m	100
Military jet at 100m AGL(Yukon-Charley Rivers National Preserve)	Train horn at 1m	120

Note: An increase of 10 dBA represents a tenfold multiplication of energy

TABLE 15. EXPLANATION OF SOUND LEVEL VALUES

Sound Levels (dBA)	Relevance
35	Blood pressure and heart rate increase in sleeping humans (Haralabidis et al. 2008)
45	World Health Organization's recommendation for maximum noise levels inside bedrooms (Berglund et al. 1999)
52	Speech interference for interpretive programs (EPA 1974)
60	Speech interruption for normal conversation (EPA1974)

Table 15 summarizes sound level values that relate to human health and speech, as documented in the scientific literature. Human responses can serve as a proxy for potential impacts to other vertebrates because humans have more sensitive hearing at low frequencies than most species (Dooling and Popper 2007).

LEVEL AND QUALITY OF INTERPRETATION AND EDUCATION

Through quality interpretation and education, Haleakalā National Park has the ability to inform and enlighten visitors about the multitude of opportunities and natural and cultural resources within the park. Visitors to Haleakalā can learn about Native Hawaiian culture, volcanic formations, diversity of plants and wildlife, and active park management. Providing meaningful interpretation can inspire and provoke visitors to broaden their horizons and make connections to this special place. Educating visitors on regulations and safety also helps ensure that visitors enjoy an incident-free experience in the park.

According to the Haleakalā special use authorization guidelines, CUA holders must ensure that educational information is provided through tour leaders, brochures, and literature or advertising to park visitors. The information must be accurate and reflect the most current information available to depict park flora, fauna, geology, culture, and history. This includes the proper use of Hawaiian words and place names. The park staff encourages all CUA holders to locate accurate interpretive materials at the park website, by calling the interpretation division, or by locating publications that are available through the Hawaii Natural History Association. However, the National Park Service currently does not provide or require training for CUA guides, does not provide interpretive materials to guides, and does not require them to include interpretive booklets as part of their tours.

Many commercial service providers take pride in providing accurate information to their clients, although some CUA holders have provided their clients with inaccurate or insufficient information that is not consistent with the park's mission or NPS interpretive standards. Another issue is that some clients may not be informed of the designation of Haleakalā as a national park, and therefore do not understand the role or mission of the National Park Service in managing the area. In a study conducted by the University of Vermont (2004), commercial bicycle tour respondents were asked if they knew what type of park they were visiting before arriving. A slight majority of visitors (54.6%) did realize they were entering a national park; however, the rest of the respondents (45.4%) did not realize that they were entering a national park, thought it was a state or private park or did not know what type of park it was.

Because some clients have not received adequate information about the park's natural resources or safe behavior while visiting, they are believed to be contributing to natural resource impacts and impacts to the experience of other park visitors. A study by the Virginia Polytechnic Institute and State University showed there is considerable confusion at the summit about the different types of trails in the park. Visitors often do not understand the difference between informal and formal trails. The study suggested that trail maintenance and improved visitor education and signs about trails should be able to address trail degradation problems (Marion 2009). In the Kīpahulu area, visitors identified the lack of directional signs and informational signs about natural and cultural history to be among the most significant problems in the area.

In a survey conducted by the University of Idaho (2000), visitors responded that the highest quality information at both the summit and Kīpahulu areas was received from park staff. The most commonly used information at the summit was obtained from the park map/brochure and the Haleakalā Visitor Center. At Kīpahulu, the most used sources of information included the park map/brochure and self-guiding trail signs and brochures.

PUBLIC HEALTH AND SAFETY

GENERAL

The health and safety of park visitors, staff, and neighbors are of great importance to the National Park Service. Park staff is responsible for maintaining conditions that protect the health and safety of employees and the public in the park. Statutory and regulatory provisions applicable to national park system units require the National Park Service to not only provide safe facilities, utilities, and grounds within the park, but also promote safety in park program and project operations (NPS *Management Policies, 2006*, section 8.2.5). In its centennial strategy for Haleakalā National Park, the National Park Service aimed to reorient visitor expectations and perceptions away from thrill-seeking recreation and toward appreciation of wild and natural environments (NPS 2007).

In a visitor survey conducted by the University of Idaho (2000), respondents at the summit and Kīpahulu areas provided feedback for a variety of important visitor use topics including perceived safety. Most visitors to the summit felt safe (63%) or somewhat safe (21%). However, a small percentage of visitors felt somewhat unsafe (6%) or very unsafe (3%). Reasons for feeling unsafe included weather conditions, narrow and windy roads, lack of guardrails, bicycles on road, and other cars and buses. Most Kīpahulu visitors also felt very safe (67%) or somewhat safe (23%). A small percentage felt somewhat unsafe (8%). Reasons for feeling unsafe included the road to Oheʻo pools, lack of road signs, and hiking on slippery rocks. In the Kīpahulu area, park staff is particularly interested in addressing health and safety issues for visitors who choose to explore the ʻOheʻo pools. In a study by Virginia Polytechnic Institute and State University, most visitors considered exploration of the ʻOheʻo pools area to be an important reason for their visit (VPI 2008b). Visitors are allowed to explore and swim in the pools. Park staff gate the trail and post the area as closed when water levels are high. However, there is no foolproof method of monitoring water levels and the National Park Service strongly discourages swimming in the pools for safety, public health, resource protection. To discourage exploration of the pools, the National Park Service has provided signs and interpretive information in the visitor center and along trails. This information explains the dangers and hazards of entering and exploring the pools. Results of a visitor study showed that delivering this information to visitors prior to their arrival at the park would enhance the effectiveness of the information in changing behavior (VPI 2008b).

Public awareness of the threats a national park poses are increased by providing sufficient information about health and safety. Park facilities are open to visitors every day of the year, except for closures during severe weather occurrences, and park personnel are present throughout the year to respond to the safety needs of staff and visitors. Education and outreach information is provided by the park staff and to commercial tours to address safety concerns. Visitor safety messages are also shared through a variety of media including web-based training, digital media distributed at the park gate, visitor center exhibits, a park film, real-time weather and viewing conditions displays, and uniformed staff in the frontcountry and backcountry. The park's website, brochures, and postings at entrance kiosks, trailheads, and visitor centers alert visitors to the dangers of recreating in high altitudes in the summit area and at the Kīpahulu area near the ocean.

Because the park has four user groups providing commercial services within the park, the following information addresses

health and safety for all CUA groups including astronomy tours, hiking tours, horseback tours, and road-based vehicle tours. However, a large portion of the following text also discusses the history of safety issues related to bicycle tours that occurred in the park from 1986 until the bicycle tour safety stand-down in October of 2007.

Haleakalā National Park requires all CUA holders to submit a biannual safety report confirming that adequate safety requirements are met for the following categories: vehicle, employee and client, equipment, and public health. In addition to this report, each CUA holder must sign the special conditions of authorization and an addendum depending on the type of tour provided. The special conditions of authorization ensures that all CUA holders not only have a commitment to safety of employees and clients but also for visitors and employees of Haleakalā National Park. Safety topics that must be discussed with clients include high elevation issues, weather conditions, roadway conditions, and trail conditions. Safety topics which CUA employees must be aware of include equipment maintenance, training, and public health. Awareness of public health includes understanding guidance for handling food, potable water, human waste, vector-borne and zoonotic diseases, and illness reporting. CUA holders must also meet emergency medical and safety requirements including cardiopulmonary resuscitation (CPR) and standard first aid certifications for astronomy tours, hiking and backcountry tours, horse tours, and road-based tours. The addendum for each tour type provides additional information about conducting the tours and includes safety and public health information specific to each activity type. For example, astronomy tours must not create a safety hazard and must illuminate equipment during nighttime hours. They are to remain on the pavement in designated areas and must not block the flow of traffic in the parking area, on trails, or on sidewalks. Similarly, hiking tours must provide clients with all equipment needed for a safe trip, ensure that clients stay on the trail, and provide directions for sanitary food preparation and waste disposal. Horseback riding tours must follow health and safety guidelines similar to those followed by hikers. They also ensure the safety of clients by inspecting the animals and associated equipment before each ride and by regulating the speed of travel on the trail.

The level of public health and safety is largely reflected in the incidence statistics collected by the park. Table 16 provides incident details for the years 2006–2009. An accident or incident is defined as an accidental event affecting a non-NPS employee that results in a death or a serious injury or illness requiring medical treatment. Due to the remote nature of the backcountry, park visitors assume some risks in visiting and using these areas of the park.

Table 17 provides incident details for the years 2006–2009 and demonstrates incidents resulting from private use versus commercial use.

TABLE 16. INCIDENT TOTALS, 2006–2009

Type of Incident	Number of Incidents 2006
Motor vehicle accidents (combined private use and commercial vehicles)	15
Traffic Violations (combined private use and commercial vehicles)	106
Emergency Medical Services incidents, including trauma, medical, and first aid only	151
Search and rescue operations	18

*2006 data were provided by Gier 2007

TABLE 17. INCIDENT TOTAL DETAILS 2006–2009

Type of Incident	Number of Incidents 2006	Number of Incidents 2007	Number of Incidents 2008	Number of Incidents 2009
Motor vehicle accidents (private use / commercial vehicles)	5 / 0	8 / 0	6 / 0	7 / 0

BICYCLE USE

The NPS *Safety Analysis Report for Commercially Guided Bicycle Tours* (2008) summarized health and safety information for bicycle tours that occurred within Haleakalā National Park from 1986 to 2007. These tours, approximately 30 miles in length, began at the crater parking area at approximately 10,000 feet in elevation and descended 11 miles and 3,500 feet of elevation through the park. The tours then continued outside the park boundary for approximately 20 more miles and finished in various locations at or near the ocean. The road inside the park is two lanes, has no shoulder, experiences sections of 5%–6% grades, and has paved pullouts approximately every 1–2 miles. The terrain adjacent to the roadway is steep, rocky, and unforgiving of those riders who were unfortunate enough to leave the roadway.

When the park superintendent (at the time) authorized this commercial activity for the first time in 1986, the total client numbers were 24,000. Numbers increased steadily with the highest recorded client total reaching 106,000 in 2005. In October 2005, the National Park Service implemented an interim operations plan to manage commercial services at sunrise at the summit while the commercial services plan was being developed (NPS 2005). Under the interim operations plan, total bicycle tour client numbers were capped at 90,000 per year. Figure 13 displays the number of visitors on guided bicycle tours from 1999–2006 for five bicycle tour companies. Figure 14 displays the total number of bicycle

accidents from 1999–2006. Some accidents did not produce injuries, but because all accidents represent an undesirable event that could produce an injury, the 2007 safety analysis team included all accidents in most of its analyses (NPS 2008a, 2008c).

Commercial bicycle tours within Haleakalā National Park have had a history of serious accidents and injuries. After a client fatality in 1998, the NPS conducted a root cause analysis and established a bicycle work group to develop and implement a safety action improvement plan. The root cause analysis determined that weather (leader should have aborted the ride), equipment (brake failure, helmet fit), and speed were the primary causes of accidents. As a result, the National Park Service added to the permits an addendum of specific park conditions. The addendum added new and strengthened existing operational and safety requirements including bike safety inspections, maximum group size limits, launch intervals, additional personal protective equipment, bicycle leader and a vehicle escorts, accident reporting, and at least one first aid/first responder-level qualified employee per tour group. Starting in 2001, client injury rates declined considerably and remained relatively steady over the next several years. This decline was likely because of the above changes and increased oversight of the program; however, the seriousness of the injuries, including the two fatalities in 2007, prompted the National Park Service to reassess the safety and future viability of commercial bicycle tours at Haleakalā National Park.

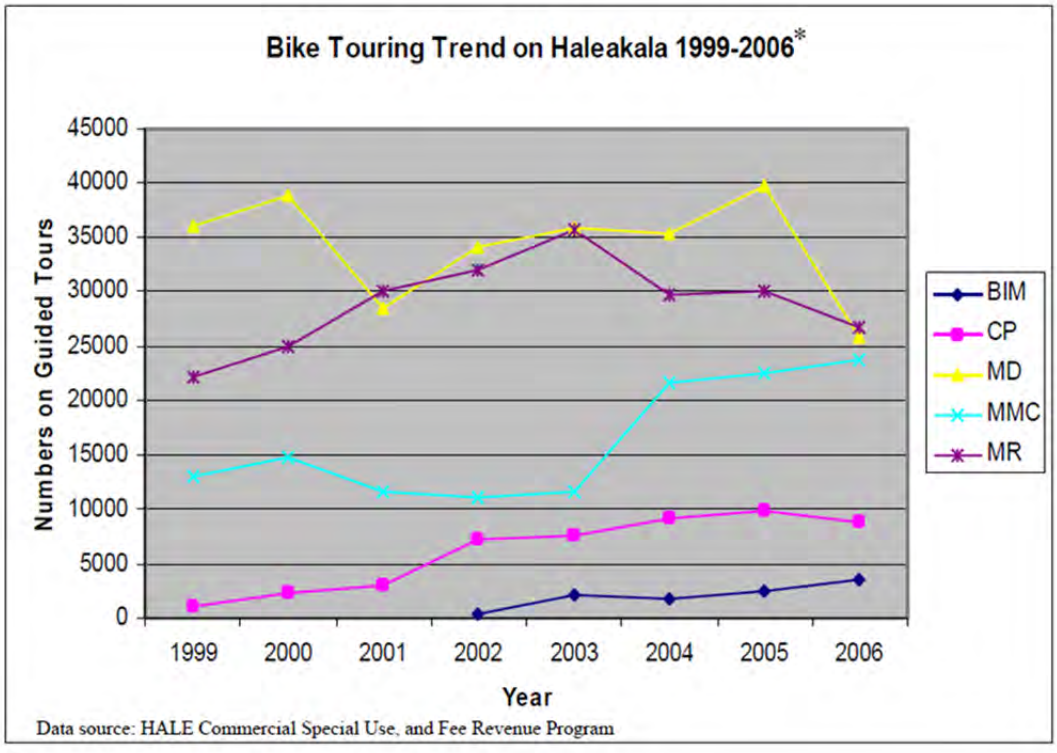


FIGURE 13. NUMBER OF BICYCLE TOURS FROM 1999 TO 2006 (NPS 2008A)

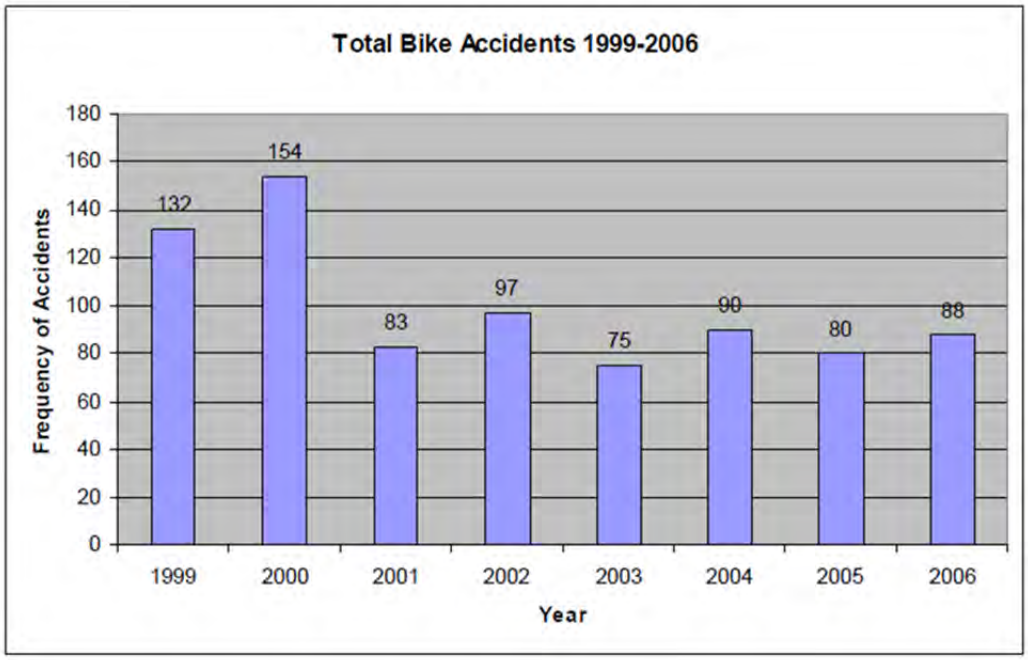


FIGURE 14. TOTAL BIKE ACCIDENTS 1999–2006 (NPS 2008A)

On December 10, 2007, the NPS safety analysis team convened at the park to conduct a risk-based assessment of this activity. After a full review of safety issues related to bicycle tours, the safety analysis team concluded that commercial bicycle tours at Haleakalā National Park, as operated and managed prior to the safety stand-down and as measured by the GAR (green-amber-red) risk assessment model, posed moderately high risks to the tour participants (NPS 2008c). In evaluating the risk categories, the team identified a range of operational and managerial actions that the team believed could reduce the risk of this activity. A subsequent NPS board of review (NPS 2008d) evaluated the safety analysis team's draft report and made the following findings:

1. **Commercially guided bicycle tours at Haleakalā National Park, as operated and managed prior to the safety stand-down, pose an unacceptably high risk to park visitors.** Although the accident rate for this activity decreased significantly between 2000 and 2001, when the National Park Service mandated additional controls for the activity, and remained stable, commercially guided bicycle operations consistently resulted in 60 participant injuries within the park annually. This number of injuries exceeds injury rates in other comparable commercially guided recreational activities (NPS 2008d).

2. **Additional management and operational changes to this activity may mitigate this risk to an acceptable level**. Management controls instituted in 2001 following the NPS root cause analysis in 1999 appear to correlate directly to a significant decline in accident rates that had been sustained, even as the numbers of tour participants increased. Additional controls instituted in 2005 reduced the number of tours, which reduced participant numbers from a high of 105,000 to a steady 90,000 participants annually. Finally, different bicycle companies had different accident rates, indicating that specific management practices influence the safety of the activity. The board directed

that a number of bicycle tour operational changes be further developed by Haleakalā

3. NPS staff with the assistance of regional concessions staff for consideration by the superintendent and regional director. These operational changes would be designed to reduce participant risk in each of the risk categories identified by the Safety Analysis Team (NPS 2008d)

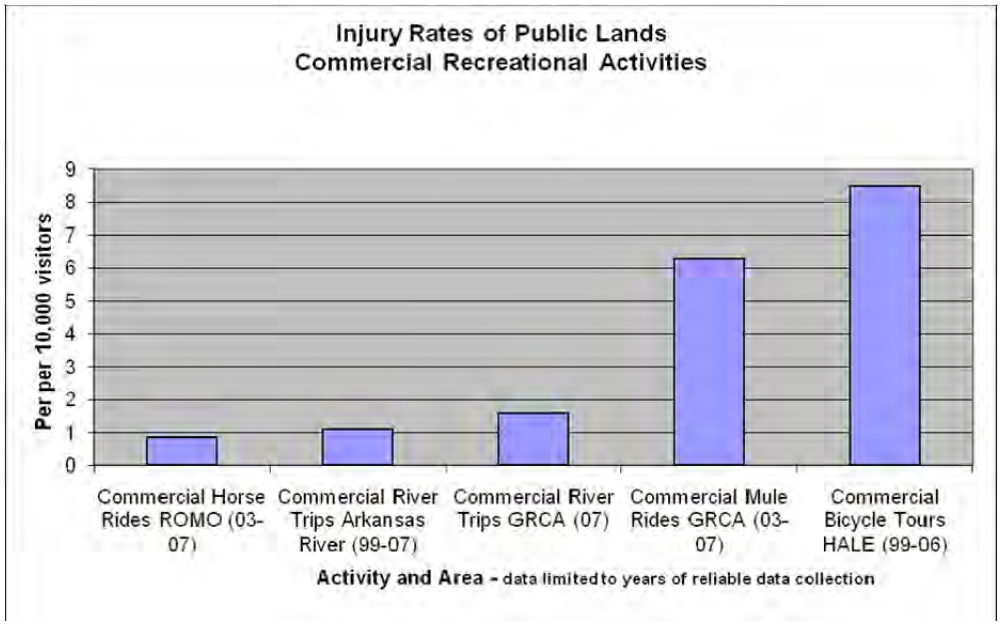


FIGURE 15. INJURY RATES ON PUBLIC LANDS DURING COMMERCIAL RECREATIONAL ACTIVITIES (NPS 2008C)

In addition to the safety analysis conducted by the National Park Service, the *Maui County Downhill Bicycle Tour Study* discussed public concerns related to the safety of bicycle tours and disruption to local traffic (Maui County Department of Public Works 2010). This report made recommendations for conducting safer bicycle tours in the future. In 2007, a statute was enacted by the state legislature creating a legal basis for changing the *Code of the County of Maui, Hawai'i* and allows the county to regulate commercial bicycle tours within the county.

SOCIOECONOMICS

HAWAIʻI ECONOMIC OVERVIEW

Hawaiʻi has four counties that comprise the island chain. The state's total population was estimated to be 1.3 million in 2008 (U.S. Census Bureau 2010). The state's largest employers are education and health services (19%); recreation, accommodation and food services (15%); and retail trade (12%) (U.S. Census Bureau 2010). As of September 2010, the state's unemployment is the sixth lowest in the nation, at 6.3%. However, unemployment has increased significantly since its historical low in January 2007 (BLS 2010), due primarily to the nationwide economic downturn over the last few years. The state government predicts slow economic recovery and growth over the next few years (DBEDT Outlook for the Economy).

The visitor industry has been an economic mainstay for Hawaiʻi since statehood in 1959. The State of Hawaiʻi Department of Business, Economic Development, and Tourism (DBEDT) reported that 6.5 million tourists arrived to the islands and spent $10 billion in the state in 2009 (DBEDT Outlook for the Economy). Tourism touches nearly all aspects in Hawaiʻi and is the primary source of revenue for many communities. As the chief generator of employment in the state, the visitor industry accounts for 20% of all Hawaiʻi jobs (Hawaiʻi Office of Economic Development 2010).

Hawaiʻi has seven national park system units ranging from the USS *Arizona* Memorial in Honolulu, to the geologic wonders of Hawaiʻi Volcanoes National Park, to small parks that protect cultural sites and practices. These parks receive 4.5 million visitors annually, who spend $243 million in the state in association with their park visit. Nearly 6,000 jobs are supported through the Hawaiʻi national parks, both through visitor spending on entertainment, food, and lodging; as well as jobs directly provided through employment with the NPS (Stynes 2009).

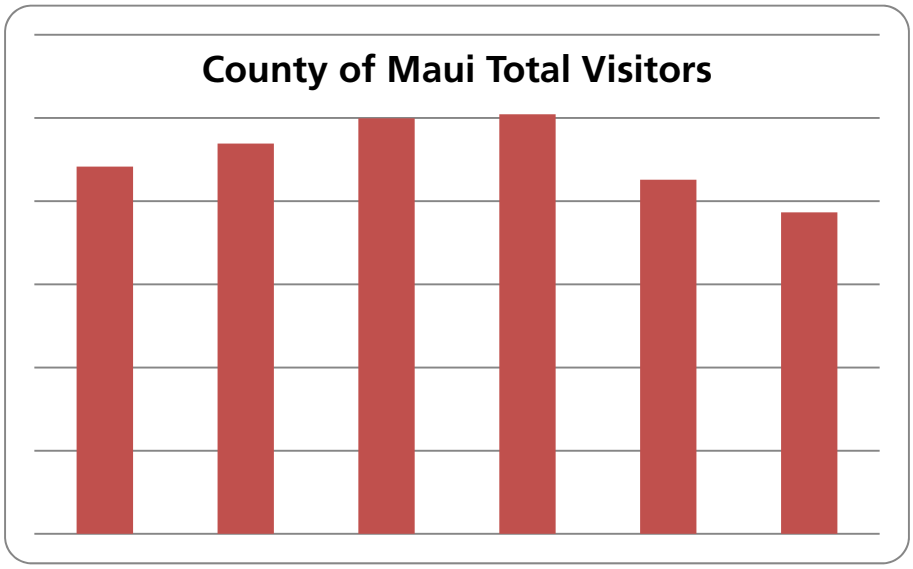
COUNTY OF MAUI ECONOMIC OVERVIEW

The County of Maui has three inhabited islands, Maui, Molokaʻi, and Lanaʻi, and one uninhabited island, Kahoʻolawe. The county's population center is Wailuku-Kahului, located on the north shore of the island of Maui. This town is the island's civic and business center and home to the seaport and airport. Beyond the urbanized area are surrounding agricultural lands, small towns, and seacoast resorts. Main cities and towns include Kahului, Kihei, Lahaina, Lanaʻi City, and Kaunakakai.

The population of the County of Maui was estimated at 144,000 in 2008 (U.S. Census Bureau 2010). From 2000 to 2008, the resident population in the county increased by 12%. The population of the county is growing faster than the state overall, with a projected annual growth rate of over 1% for the next 30 years (County of Maui 2006).

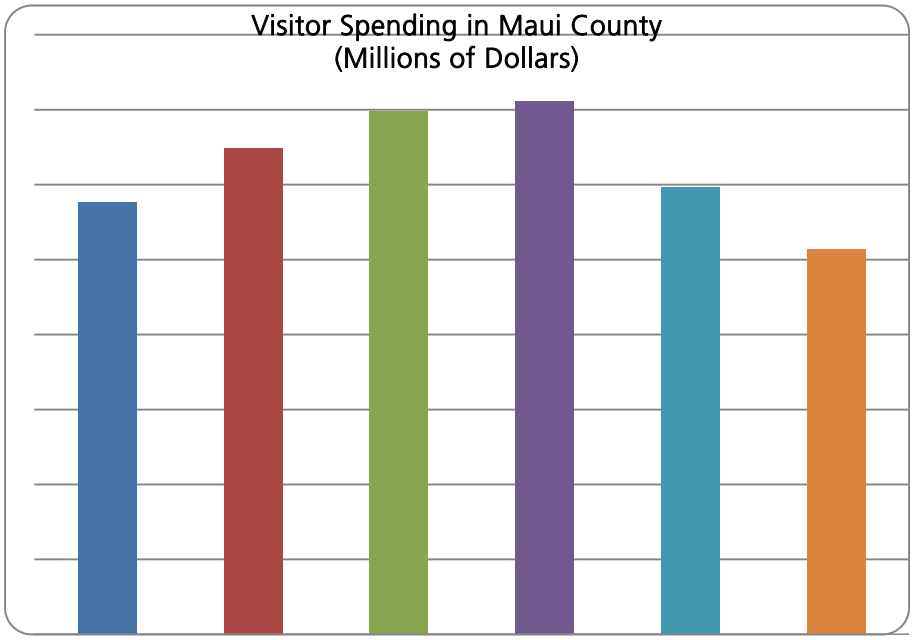
The economy of the County of Maui has a high reliance on the visitor industry, with 28,500 jobs (38%), being visitor-related in the categories of accommodations and food service, entertainment, and retail trade (DBEDT Quarterly Economic Indicators 2010). The county has a higher unemployment rate than does the state, at 8.5% in 2010 (DBEDT Quarterly Economic Indicators 2010).

The number of visitors to the County of Maui has decreased since 2007, and visitor spending has followed the same trend. However, the Department of Business, Economic Development, and Tourism projects visitation to the county to return to 2005 and 2006 levels in the near future. Visitation in 2010 is already up 7.8%.



Source: DBEDT, Historical Visitor Statistics

FIGURE 16. COUNTY OF MAUI VISITORS, 2004-2009



Source: DBEDT, Historical Visitor Statistics

FIGURE 17. COUNTY OF MAUI VISITOR SPENDING, 2004–2009

Economic Impacts of Park's Commercial Service Providers

Within the scope of this plan, 26 businesses in 2009 were permitted to offer tours within the national park, and they typically provide tours to 15%–30% of Haleakalā National Park visitors in any given year. The companies offer a variety of experiences to their clients. The companies rely on touring within the park to varying degrees, some visiting the park on all tours, while others take some tours to the park, but also offer other tours that do not enter the park. Total revenues of $8.9 million were reported for tours visiting the park. On average, 21% of these companies' revenues were generated by tours that visit the park.

Table 18 summarizes the reported revenue for tours visiting the park by commercial service providers in 2009, as well as the average percentage of revenue that is attributable to tours that visit the park. Higher percentage numbers indicate a larger dependency on touring within the park. Horseback tours and road-based vehicle tours (with bicycle option outside the park) generated over half their revenue from tours that visited the park. Therefore, on average, those tour operators rely on more than half of their revenue from tours that include the park. The other three types of tours generated less than half of their revenue from tours visiting the park. While these numbers give a picture of the types of tours that rely on income generated from in park tours, operators are not necessarily consistent within each category.

TABLE 18. COMMERCIAL SERVICE PROVIDER REVENUES FOR 2009

Provider	No. of Vendors	Revenue Attributable to Park	Revenue Attributable to Park as Percent of Total Revenue
Astronomy Lectures/Tours	4	$350,000	23%
Guided Hiking and Guided Hiking with Astronomy	6	$305,000	13%
Horseback Tours	2	N/A	N/A*-
Road-based Vehicle Tours	12	$4,777,000	15%
Road-based Vehicle Tours (with Bicycle Option outside the national park)	7	$3,404,000	68%
TOTALS	**26**	**$8,940,000**	**21%**

Source: CUA forms

Astronomy Tours

Stargazing services in the park are currently provided by four CUA holders who pay the $350 annual permit fees (administration fee and application fee). Gross revenues for tours visiting the national park were approximately $350,000, making up 23% of total revenue. The companies had between 440 and 2,000 clients for the year. The stargazing groups are generally small, with patrons paying $65 to $150 for the service. Three of the four companies make most of their revenue from in-park tours

Hiking Tours

Five hiking tour companies operated under CUAs at Haleakalā National Park in 2009, plus one company that provided guided hiking with astronomy tours. Total permit fees paid to the park by the hiking tour CUA holders are $350 annually for each company.

Approximately 1,900 visitors came to the park on guided hiking tours in 2009. Two of the hiking tour companies are daily or weekly users. Four companies lead hikes less frequently. Commercially guided hiking prices range from $130 to $150. Gross revenues for tours that visit the park were approximately $305,000, making up 13% of total revenue.

Horseback Tours

Two horseback tour companies operated under CUAs in 2009, but only one tour company led tours in the park. Riders generally paid between $120 and $300 per tour, depending on discounts, ride length, and the amenities provided. The companies pay annual permit fees of $350 to the National Park Service.

Road-based Vehicle Tours

In 2009, there were 19 CUA holders that offered road-based vehicle tours to parts of Haleakalā National Park. These tours generally visit other parts of Maui as well as the park. Vehicle tours are conducted in multi-passenger vehicles with up to 45 passengers. Thirteen road-based vehicle tour companies held CUAs for sunrise at the summit. The historical vehicle occupancy rate for sunrise tours has been approximately 60%.

In 2009, rates for road-based tours ranged from $20 to $125, depending on many factors, such as the type of service, discounts, the number of sites visited, and overall length of the tour. Gross revenues for tours visiting the park were approximately $4.8 million, making up 15% of total operator revenue. Each of the road-based vehicle tour providers pays entrance fees to the park based on ridership. One company reported nearly all revenues generated from tours that visited the park. Several other companies reported a portion of revenues generated from tours that visit the park, and a few companies reported no revenues from in-park tours, or did not provide information.

Road-based Vehicle Tours with Optional Bicycle Tours

Seven of the 19 road-based vehicle tour CUA holders operated bike tours outside of the park boundary in 2009. This number has been relatively stable since the bicycle safety stand down in October 2007. The companies take clients to the summit for sunrise, and then return down the park road, stopping outside of the park boundary to launch bicycle tours. Five companies operated escorted tours and two operated independent rides (Maui Downhill Bicycle Tour Study 2010). Tour prices range from $35 to $270, and gross revenues were approximately $3.4 million, making up 68% of total revenue. Companies with a bicycle option (outside of the park), overall generated a high proportion of revenues from tours which visited the park.

PARK OPERATIONS

ORGANIZATION

The superintendent of Haleakalā National Park is responsible for managing the park, its staff, commercial services, all of its programs, and its interactions with persons, agencies, and organizations interested in the park. The superintendent is assisted by a management team. Park staff provide the full scope of functions and activities to accomplish management objectives, including interpretation and education, resource protection, law enforcement, emergency services, public health and safety, science, visitor services, utilities, and management support. In 2010, there were 95 employees whose duties and assignments are distributed among five operational programs within the park: protection, interpretation, resource management, maintenance, and administration. There are two areas of operations: the summit area and Kīpahulu. In 2010, the park employed 58 permanent employees and 37 term, temporary, seasonal, or intermittent employees.

Staff expertise and specialties are summarized by the following programs:

The **protection program** with its six employees is responsible for resource protection, visitor safety services, and park protection. Duties include road and trail patrols, law enforcement, resources protection, emergency medical assistance, fire protection, and search and rescue.

The **interpretation program**, with its 15 employees (including four term, temporary, or intermittent employees), is responsible for all park activities related to providing visitors with a safe and educational park experience. Duties include interpretation, visitor center management, interpretive media, and visitor safety services. In conjunction with this division, the Hawai'i Natural History Association supports park interpretation with staff at the three visitor centers and returns to the park a portion of its revenue.

The 31 employees of the **resources management program** (including 14 term and two intermittent employees) are responsible for all activities related to the management, preservation, and protection of the park's cultural and natural resources. This includes maintaining boundary and strategic fences to exclude feral animals, monitoring of natural and cultural resources, restoring native plant communities, monitoring of natural and cultural resources, and control of nonnative and invasive plant and animal species. This division also manages environmental compliance for the park.

The **administration program** has 15 employees (including two intermittent employees) who are responsible for all parkwide management and administrative support activities, park-level planning, human resources management, information technology, procurement and contracting, entrance fee collection, and financial management. The division coordinates daily internal operations at the park and works with external constituencies. This division also manages and oversees all in-park commercial services and fee collection.

The **facilities management program** has 26 employees (including 13 term and one seasonal employee) who are responsible for all activities required to manage and operate the park's infrastructure on a daily basis through substantial repair, replacement or rehabilitation of park assets, such as buildings, roads, trails, facilities, fleet vehicles, and equipment. Work includes cyclic and routine maintenance, inspection, general preventative maintenance, and renovation projects. Park facilities include

three visitor centers with exhibits and bookstore operations, four campgrounds, 38.2 miles of trails, three trail bridges, eight parking areas, and two picnic areas.

ADMINISTRATION OF COMMERCIAL SERVICES

Currently, management of the park's fee revenue program and commercial services program (within the administration program) is done by one full-time employee. This staff member also works with the park management team and resource management program to determine whether services are safe, necessary and/or appropriate, and do not generate unacceptable levels of resource impacts. Management of the commercial services program is currently understaffed.

An estimated 15%–30% of park visitors are accompanied by commercial providers, with up to 70% of summit visitors at sunrise being on commercial tours. Staffing needs, particularly for the law enforcement, interpretation, maintenance, and administration programs are affected by the levels and patterns of commercial visitors.

COMMERCIAL SERVICES REVENUE TO THE PARK

Permit fees and entrance fees comprise the commercial service provider payments made to the park. Road-based vehicle tours pay a commercial entrance fee based on the number of passengers per vehicle. For Haleakalā National Park, the fees are summarized in the table below.

TABLE 19. HALEAKALĀ NATIONAL PARK COMMERCIAL TOUR ENTRANCE FEE SCHEDULE

Haleakalā National Park Commercial Tour Entrance Fees*		
Type of Vehicle	Number of Passengers	Entrance Fee
Sedan	1-6	$30 plus $5 per passenger
Van	7-15	$45
Minibus	16-25	$45
Motor Coach	26+ persons	$100

*These fees apply to road-based vehicle tours only.

Astronomy, horseback, and hiking tour companies pay an annual administrative fee of $250 to cover NPS staff work regarding communication and monitoring of the permits. They also pay an annual application fee of $100. Some tour companies bring their clients in the park, while others meet their clients within the park. When clients ride into the park with the tour company, the company pays a $5 per person entrance fee. When clients enter the park on their own, they pay an entrance fee like any other visitor.

TABLE 20. TOTAL FEES PAID TO PARK

Fees Paid to the Park by Commercial Providers (2009)	
Tour Companies, Except Road-based Vehicle Tours	
Type of Fee	**Amount**
Total Administrative Fees ($250 per company)	$3,000
Total Application Fees ($100 per company)	$3,100
Other Entrance Fees (paid by clients individually entering the park)	This amount is not readily discernible, but is part of the total fees collected at entrance stations
Road-based Vehicle Tour Companies	
Type of Fee	**Amount**
Total Commercial Entrance Fees (see table 19 for fee schedule)	$566,880

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Environmental Consequences

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INTRODUCTION

The National Environmental Policy Act requires that environmental documents discuss the environmental impacts of a proposed federal action, feasible alternatives to that action, and any adverse environmental effects that cannot be avoided. In this case, the proposed federal action would be the adoption of a new commercial services management plan, focused on commercial tours at Haleakalā National Park. This chapter analyzes the environmental impacts of implementing the three action alternatives on natural resources, cultural resources, wilderness character, visitor experience, public health and safety, socioeconomics, and park operations. The analysis is the basis for comparing the beneficial and adverse effects of implementing the alternatives.

This chapter begins with a description of the methods and assumptions used for each impact topic. Impact analysis discussions are organized by impact topic and then by alternative under each impact topic. The existing conditions for all of the impact topics that are analyzed were identified in chapter 3. All of the impact topics are assessed for each alternative.

The analysis of the no-action alternative (the continuation of current management) identifies the future conditions in Haleakalā National Park, and specifically at the summit and Kīpahulu areas, if no changes to management of commercial services occurred. The three action alternatives are then compared to the no-action alternative to identify the incremental changes in conditions that would occur because of changes in park facilities.

Each alternative discusses cumulative impacts; these are identified when this plan is considered in conjunction with other actions occurring in the park and adjacent lands. The discussion of cumulative impacts is followed by a conclusion statement. The impacts of each alternative are briefly summarized at the end of chapter 2.

METHODS AND ASSUMPTIONS FOR ANALYZING IMPACTS

The planning team based the impact analysis and the conclusions in this chapter primarily on the review of existing literature and studies, information provided by experts in the National Park Service, and staff insights and professional judgment. The team's method of analyzing impacts is further explained below. It is important to remember that all the impacts have been assessed assuming that mitigative measures would be implemented to minimize or avoid impacts. If mitigative measures described in the chapter 2 were not applied, the potential for resource impacts and the magnitude of those impacts would increase.

The environmental consequences for each impact topic were identified and characterized based on impact type, intensity, context, and duration.

Impact intensity refers to the degree or magnitude to which a resource would be beneficially or adversely affected. Impacts were identified as negligible, minor, moderate, or major in conformance with the definitions for these classifications provided for each impact topic. Because this is a programmatic document, the intensities were expressed qualitatively.

Context refers to the setting within which an impact may occur, such as the affected region or locality. In this document most impacts are either localized (site-specific) or parkwide.

Impact duration refers to how long an impact would last. The planning horizon for this plan is approximately 10 to 15 years. Unless otherwise specified, in this document the following terms are used to describe the duration of the impacts:

> ***Short-term***: The impact would be temporary in nature, lasting one year or less, such as the impacts associated with construction.
>
> ***Long-term***: The impact would last more than one year and could be permanent in nature, such as the loss of soil due to the construction of a new facility. Although an impact may only occur for a short duration at one time, if it occurs regularly over a longer period of time the impact may be considered to be a long-term impact. For example, the noise from a vehicle driving on a road would be heard for a short time and intermittently, but because vehicles would be driving the same road throughout the 15-year life of the plan, the impact on the natural soundscape would be considered to be long term.

Note: As stated in chapter 1, this commercial services plan has a duration of 10 to 15 years. None of the actions being proposed would be temporary or last less than one year. Thus, for this environmental assessment, all of the impacts of the actions being analyzed are long-term impacts—there would be no short-term impacts that result from the alternatives. However, when other actions independent of this plan are analyzed together with the alternatives in the cumulative impacts analysis, there is the possibility of short-term, cumulative impacts.

Effects also can be *direct* or *indirect*. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later or farther away, but are still reasonably foreseeable. This document discloses and analyzes both direct and indirect effects, but does not differentiate between them in the discussions in order to simplify the narrative.

The impacts of the action alternatives describe the *difference between* implementing the no-action alternative and implementing the action alternatives. To understand a complete picture of the impacts of implementing any of the action alternatives, the reader must also take into consideration the impacts that would occur in the no-action alternative.

GENERAL ASSUMPTIONS

For the purposes of this impact analysis, several assumptions were made in assessing the impacts of the alternatives:

- No changes occur in NPS policies regarding managing of commercial services, including the *Commercial Use Authorizations: Interim Guidelines*.
- No substantial change occurs in interest in visiting the park by commercial or noncommercial visitors. Use levels continue at about existing levels or gradually increase.
- All facilities described in the "Cumulative Impact Analysis Scenario" occur as described. No major changes occur in air tours flying above or near the park.
- All activities requiring commercial use authorizations would to be issued every two years.
- Road-based tour concession (category 3) contracts would be issued every 10 years or less. These tours would begin and end outside of the park. No facilities or infrastructure would be assigned to the companies awarded these contracts. The maximum number of concession contracts allowed under each action alternative would be issued.

NATURAL RESOURCES

Analysis of natural resources (soils, vegetation, several threatened and endangered species, and soundscapes) was based on knowledge of the area's resources, and the best professional judgment of planners, natural resource specialists, and biologists who have experience with similar types of projects. Information on the area's natural resources was gathered from several sources. As appropriate, additional sources of data are identified under each topic heading.

Soundscape (acoustic environment) is considered a natural resource of a park and can be affected by noise. However, noise also affects wildlife and people. For the natural resource impact topic, soundscape only addresses the change in sound levels from natural ambient levels. Changes in the soundscape that affect park visitors are addressed in the "Visitor Use and Experience" section. (Wildlife is not an impact topic in this environmental assessment, and therefore impacts of changes in the soundscape on wildlife are not addressed. Although the environmental assessment does examine the effects of the alternatives on two wildlife species (nēnē and Hawaiian petrel), there is insufficient information to analyze changes in noise levels due to the alternatives that affect these wildlife species in Haleakalā National Park.

SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT AND IMPACTS TO CULTURAL RESOURCES

In this environmental assessment, impacts to cultural resources are described in terms of type, context, duration, and intensity, which is consistent with the regulations of the Council on Environmental Quality that implement the National Environmental Policy Act. These impact analyses are intended, however, to comply with the requirements of both the National Environmental Policy Act and section 106 of the National Historic Preservation Act. In accordance with Advisory Council on Historic Preservation (ACHP) regulations implementing section 106 of the National Historic Preservation Act (36 CFR 800, *Protection of Historic Properties*), impacts to cultural resources were also identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are either listed in or eligible to be listed in the National Register of Historic Places; (3) applying the criteria of adverse effect to affected national register-eligible or national register-listed cultural resources; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under ACHP regulations, a determination of either *adverse effect* or *no adverse effect* must also be made for affected national register-listed or national register-eligible cultural resources. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the National Register of Historic Places, e.g., diminishing the integrity (or the extent to which a resource retains its historic appearance) of its location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur later in time, be farther removed in distance, or be cumulative (36 CFR 800.5, *Assessment of Adverse Effects*). A determination of *no adverse effect* means there is an effect, but the effect would not diminish the characteristics of the cultural resource that qualify it for inclusion in the national register.

CEQ regulations and NPS Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making* also call for a discussion of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, e.g., reducing the intensity of an impact from major to moderate or minor. Any resultant reduction in intensity

of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under the National Environmental Policy Act only. It does not suggest that the level of effect as defined by section 106 is similarly reduced. Once the historic fabric of a resource is gone, nothing can restore its authenticity or gain the information that might have been found through analysis. Therefore, although actions determined to have an adverse effect under section 106 may be mitigated, the effect remains adverse.

The following discussion correlates the different NHPA and NEPA requirements to disclose potential effects on cultural resources and to achieve compliance with both laws.

A section 106 summary is included in the impact analysis sections. The section 106 summary is an assessment of the effect of the undertaking (implementation of the alternative), based upon the criterion of effect and criteria of adverse effect found in ACHP regulations.

ARCHEOLOGICAL RESOURCES, CULTURAL LANDSCAPES, AND HISTORIC STRUCTURES

Archeological resources include a variety of archeological resources at the summit and in other areas of the park, including 13 archeological sites located within 50 feet of areas used by commercial service providers. In the Kīpahulu area of the park, nine archeological sites are located within 50 feet of areas used by commercial service providers.

Two cultural landscapes have been defined within the park. The 10.6-mile park road is a historic cultural landscape (NPS 2008e) with contributing structures that has been determined eligible for listing in the National Register of Historic Places. The developed areas of Hōlua, Kapalaoa, and Palikū are also a cultural landscape, but are not affected by this plan.

There are 54 historic structures within the park that have been determined eligible for listing in the National Register of Historic Places through consultation with the Hawai'i state historic preservation officer under criterion A and/or criterion C and are listed in the National Park Service List of Classified Structures. There are 27 historic structures located within areas used by commercial services providers.

ETHNOGRAPHIC RESOURCES AND CULTURAL PRACTICES

Ethnographic Resources

Certain important questions about human culture and history can only be answered by gathering information about cultural content and context of associated cultural resources. Questions about contemporary peoples or groups, their identity, and their heritage have the potential to be addressed through ethnographic resources. As defined in NPS Director's Order 28: *Cultural Resource Management Guidelines* (NPS 1998) ethnographic resources can be both natural and cultural resources that have been identified as having cultural significance by culturally associated users. They are subsistence and ceremonial locales and sites, structures, objects and rural and urban landscapes assigned cultural significance by traditional users. Some such specific places of traditional cultural use may be eligible for inclusion in the National Register of Historic Places if they are of religious or cultural importance.

Ethnographic resources describe the summit of Haleakalā, including Haleakalā Crater, Kīpahulu Valley, and Kaupō Gap, as a traditional cultural property. The term *traditional cultural property* is used by the National Register of Historic Places to identify a property eligible for inclusion in

the national register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history; and (b) are important in maintaining the continuing cultural identity of the community. Hawaiian traditions tell that Pele, the Goddess of Fire, created the crater and all the cinder cones and vents in the crater at Haleakalā. The summit of Haleakalā, including Haleakalā Crater, Kīpahulu Valley, and Kaupō Gap, has been determined eligible for listing in the National Register of Historic Places through consultation with the Hawai'i state historic preservation officer as a traditional cultural property.

Cultural Practices

In 2008, 4,127 Hawaiians entered the summit area of the park and 1,351 Hawaiians entered the Kīpahulu area of the park for traditional cultural practices. In 2009, 4,857 Hawaiians entered the summit area of the park and 837 Hawaiians entered the Kīpahulu area of the park for traditional cultural practices. In 2010, 2,993 Hawaiians entered the summit area of the park and 493 Hawaiians entered the Kīpahulu area of the park to conduct traditional cultural practices. Cultural practices known to occur within the park include gathering of plants, birth and burial practices, astronomy, travel, performance of ceremonies and spiritual training, and farming.

VISITOR USE AND EXPERIENCE

The impact analysis considers various aspects of visitor use and experience at Haleakalā National Park, including the following:

- number and diversity of commercial activities
- access and quality of experience
- opportunities for solitude and quiet
- interpretation and education

The analysis is primarily qualitative rather than quantitative due to the conceptual nature of the alternatives. Impacts on visitor use and experience were determined considering the best available information.

Information that was considered in the analysis includes the park's annual reporting of visitor use levels to the NPS Public Use Statistics Office, and local and regional travel and tourism data. Additional information was gathered during the planning process for this plan, including opinions from park visitors collected in a variety of park studies and visitor surveys, visitor observations, and information from park staff.

PUBLIC HEALTH AND SAFETY

The impact analysis considered aspects of public health and safety for visitors at Haleakalā National Park, including commercial use and bicycle use. Impacts on public health and safety were assessed using data and information obtained through consultation with park staff and by reviewing various safety analysis reports pertaining to park safety and commercial use at Haleakalā National Park.

SOCIOECONOMIC ENVIRONMENT

Recreation-related tourism is an important element of the island economy, which for the purposes of this analysis is the County of Maui. The park is a popular visitor attraction for visitors to Maui, and as such, plays a role in the county economy. Historically, nearly 60% of visitors to the island of Maui have visited the park (DBEDT 2009). In the County of Maui, 2% of jobs are supported by the park and 2.6% of visitor spending is in association with visiting the park. Thus, any changes to the park that affect local businesses and the economy of Maui are of special interest.

The commercial services plan is unlikely to affect the number of visitors to Maui; however, there may be an impact on the number and patterns of commercial visitors to Haleakalā. In other words, the overall economy of the county would be changed very little by the alternatives, but patterns of visitor spending may change.

Implementation of the commercial services plan will also affect the park commercial providers and commercial tour company employment, and those impacts have been characterized in this section. Socioeconomic issues such as traffic congestion are also considered in this analysis.

The approach used in this analysis considers the following main factors in the alternatives:

- changes in number of commercial use authorizations (CUAs) or concession contracts available to commercial service providers
- changes in federal spending to operate the park

Implementation costs of the alternatives, including staffing were estimated based on current budgets and actual project costs at the park and other national park system units. Actual future outlays would reflect future NPS policies, on-the-ground conditions, unanticipated events and opportunities, and budgets approved by Congress for the National Park Service in general or Haleakalā National Park specifically.

Socioeconomic impacts were determined based on applied logic, professional expertise, and professional judgment. A mostly qualitative analysis was completed given the conceptual nature of the alternatives. However, this is sufficient to compare and disclose the impacts of alternatives for decision-making purposes.

PARK OPERATIONS

The impact analysis evaluated the effects of the alternatives on park operations, including staffing, facilities and maintenance, and concessions management. The analysis focused on how park operations might vary with the different management alternatives. Whether the alternative would result in improved efficiency of park operations, and whether the operations are sustainable under park budgets are considered. The analysis is qualitative rather than quantitative because of the conceptual nature of the alternatives. Consequently, professional judgment was used to reach reasonable conclusions as to the intensity, duration, and type of potential impact.

All of the alternatives propose that commercial use authorizations be available for some activities. Commercial service providers, under a commercial use authorization, would bear the expense of associated management and administrative costs on a cost recovery basis through payment of reasonable fees to the National Park Service. This includes costs to manage commercial providers, protect resources, and other associated costs.

The action alternatives propose concessions contracts as the management tool for commercial road-based vehicle tours. Concession contracts must provide for payment to the government of a franchise fee, i.e., the amount to be indicated in the contract. The franchise fee rate is determined based on the value of the contract, given reasonable opportunity to make a profit. The National Park Service's first priority though, is not the revenue generated to the agency, but the preservation of park areas and provision of necessary and appropriate services for visitors at reasonable rates. Eighty percent of franchise fees collected are available to the park to fund high-priority resource management programs and operations. The remaining 20% is available to projects throughout the national park system.

TABLE 21. IMPACT THRESHOLD DEFINITIONS

Impact Topic and Duration	Negligible	Minor	Moderate	Major
NATURAL RESOURCES—Soils	The action would result in a change in a soil, but the change would be so small that it would not be detectable based on standard scientific methods. The effects on soil productivity would be slight.	The action would result in a detectable change, but the change would be slight. There could be changes in topsoil in a relatively small area, but the change would not noticeably change the potential for erosion. Effects on soil productivity would be slight.	The action would result in a clearly detectable change in a soil. There could be a loss or alteration of the topsoil in a small area, or the potential for erosion to remove small quantities of additional soil would noticeably increase or decrease. The effect on soil productivity would be apparent.	The action would result in the substantial loss or alteration of soils in a relatively large area, or there would be a strong likelihood that erosion would remove large quantities of additional soil. There would be a substantial change in soil productivity.
NATURAL RESOURCES—Terrestrial Vegetation	The action might result in a change in vegetation, but the change would not be measurable or would be at the lowest level of detection.	Effects on multiple plants would be measurable or perceptible. However, the natural function and character of plant communities in terms of growth, abundance, reproduction, distribution, structure, or diversity of native species would only be perceptible in small, localized areas. Changes to local ecological processes would be minimal.	A change would occur in the natural function and character of plant communities in terms of growth, abundance, reproduction, distribution, structure, or diversity of native species, but not to the extent that plant community properties (i.e., size, integrity, or continuity) change. Changes to local ecological processes would be of limited extent.	The action would be severely adverse to a population. The effects would be substantial and highly noticeable, and they could result in widespread change. Effects on plant community properties would be readily apparent and would substantially change the natural function and character of the vegetation community. This could include changes in the abundance or distribution of a local or regional population to the extent that the population would not be likely to recover. Key ecological processes would be altered and landscape-level (regional) changes would be expected.
NATURAL RESOURCES—Selected Special Status Species	The action could result in a change to a population or individuals of a species or designated critical habitat, but the change would be so small that it would not be of any measurable or perceptible consequence and would be well within natural variability. This impact intensity equates to a U.S. Fish and Wildlife Service "may affect, not likely to adversely affect" determination.	The action could result in a change to a population or individuals of a species or designated critical habitat. The change would be measurable, but small and not outside the range of natural variability. This impact intensity equates to a U.S. Fish and Wildlife Service "may affect, not likely to adversely affect" or a "likely to adversely affect" determination.	The action could result in a detectable change to a population or individuals of a species or designated critical habitat. Changes to the population or habitat might deviate from natural variability, but the changes would not threaten the continued existence of the species in the park. This impact intensity equates to a U.S. Fish and Wildlife Service "may affect, not likely to adversely affect"	The action would result in a noticeable effect on the viability of a population or individuals of a species or designated critical habitat. Considerable changes may occur during key time periods for a species. Changes to the population or habitat would substantially deviate from natural variability and threaten or help ensure the continued existence of the species in the park.

TABLE 21. IMPACT THRESHOLD DEFINITIONS

Impact Topic and Duration	Negligible	Minor	Moderate	Major
			or a "likely to adversely affect" determination.	A major adverse impact would be considered a "take situation" and would equate to a U.S. Fish and Wildlife Service "likely to adversely affect" determination.
NATURAL RESOURCES—Soundscape	Natural Areas: The alternative would rarely cause a change in the natural ambient sound conditions and/or there would be little or no change in periods of time between noise events; natural sounds predominate. The amount of time that noise from the alternative is audible would cause changes so slight they would not be measurable or perceptible. Developed/ Frontcountry Areas: Human-caused noise may be present much of the time during daylight hours, but it is concentrated at the sources and only travels short distances from the sources. Natural sounds still predominate in large portions of the frontcountry area. When noise is present, it is mostly at low levels.	Natural Areas: The alternative would occasionally cause a change in the natural ambient sound conditions, and/or there would be a small change in periods of time between noise events. The amount of time that noise is audible from the alternative would change a small amount from the natural ambient sound conditions. Sound sources would be identifiable. Developed/ Frontcountry Areas: Human-caused noise may predominate during daylight hours, but for the majority of the time the noise is at low levels, is only rarely greater than medium levels, and does not travel more than medium distances throughout frontcountry areas.	Natural Areas: The alternative would cause a change in natural ambient sound conditions for an intermediate amount of the day, and/or there would be an intermediate change in periods of time between noise events caused by the alternative. The amount of time that noise is audible would change an intermediate amount from natural ambient. Human-caused sounds would be readily apparent and identifiable. Developed/ Frontcountry Areas: Human caused noise may predominate, but it is at medium or lower levels a majority of the time. Localized areas may experience medium to high levels of human caused noise during half of the daylight hours. Noise travels medium distances throughout frontcountry areas.	Natural Areas: The alternative would cause a change in natural ambient sound conditions for a large amount of the day, and/or there would be more than an intermediate change in periods of time between noise events caused by the alternative. The amount of time that noise is audible would be substantial, and at a level that obscures or mask natural sounds. Developed/ Frontcountry Areas: Human-caused noise predominates during daylight hours and is at greater than medium levels a majority of the time the noise is present. Large portions of the frontcountry area are affected by medium to high levels of noise during a majority of the daylight hours.

TABLE 21. IMPACT THRESHOLD DEFINITIONS

Impact Topic and Duration	Negligible	Minor	Moderate	Major
CULTURAL RESOURCES—Archeological Resources	Impact is at the lowest level of detection with neither adverse nor beneficial consequences and would not alter resource condition. The determination of effect for section 106 would be no effect.	Adverse impact: Alteration of a pattern(s) or feature(s) would not diminish the overall integrity of the resource. The determination of effect for section 106 would be no adverse effect.	Adverse impact: Alteration of a pattern(s) or feature(s) would diminish the overall integrity of the resource. The determination of effect for section 106 would be adverse effect. A memorandum of agreement is executed between the National Park Service and applicable state or tribal historic preservation officer, and, if necessary, the Advisory Council on Historic Preservation, in accordance with 36 CFR 800.6(b).	Adverse impact: Alteration of a pattern(s) or feature(s) would greatly diminish or destroy the overall integrity of the resource. The determination of effect for section 106 would be adverse effect. Measures to minimize or mitigate adverse impacts cannot be agreed upon and the National Park Service and applicable state or tribal historic preservation officer and/or Advisory Council on Historic Preservation are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).
CULTURAL RESOURCES—Cultural Landscapes	Impact is at the lowest levels of detection with neither adverse nor beneficial consequences. The determination of effect for section 106 would be no effect.	Adverse impact: Alteration of a feature would not diminish the overall integrity or character-defining features of a national register-eligible or national register-listed historic property. The determination of effect for section 106 would be no adverse effect.	Adverse impact: Impacts to a national register-eligible or national register-listed historic property would change the character-defining features of the resource, but do not diminish the integrity of the resource to the point of being ineligible. The determination of effect for section 106 would be adverse effect. A memorandum of agreement may be executed between the National Park Service and applicable state historic preservation officer, and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures are identified in the memorandum of agreement to minimize or mitigate adverse impacts and/or preserve important information.	Adverse impact: Impacts to a national register-eligible or national register-listed historic property would change character-defining features of a resource, diminishing the integrity of the resource to the extent that it is no longer eligible for listing in the national register. The determination of effect for section 106 would be adverse effect. Measures to minimize or mitigate adverse impacts cannot be agreed on and the National Park Service, applicable state historic preservation officer, and/or Advisory Council on Historic Preservation are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).

TABLE 21. IMPACT THRESHOLD DEFINITIONS

Impact Topic and Duration	Negligible	Minor	Moderate	Major
CULTURAL RESOURCES—Historic Structures	Impact is at the lowest levels of detection with neither adverse nor beneficial consequences. The determination of effect for section 106 would be no effect.	Adverse impact: Alteration of a structure would not diminish the overall integrity or character-defining features of a national register-eligible or national register-listed structure. The determination of effect for section 106 would be no adverse effect.	Adverse impact: Impacts to a national register-eligible or national register-listed structure would change the character-defining features of the resource, but do not diminish the integrity of the resource to the point of being ineligible. The determination of effect for section 106 would be adverse effect. A memorandum of agreement may be executed between the National Park Service and applicable state historic preservation officer, and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures identified in the memorandum of agreement to minimize or mitigate adverse impacts and/or preserve important information.	Adverse impact: Impacts to a national register-eligible or national register-listed structure would change character-defining features of a resource, diminishing the integrity of the resource to the extent that it is no longer eligible for listing in the national register. The determination of effect for section 106 would be adverse effect. Measures to minimize or mitigate adverse impacts cannot be agreed on and the National Park Service, applicable state historic preservation officer, and/or Advisory Council on Historic Preservation are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).
CULTURAL RESOURCES—Ethnographic Resources and Cultural Practices	The impact(s) would be barely perceptible and would not alter resource conditions such as traditional access or site preservation. The impact(s) would not alter the relationship between the resource and the affiliated group's body of practices and beliefs. There would be no change to a group's body of beliefs and practices. For purposes of NHPA section 106, the determination of effect on the property would be no effect.	Adverse impact: The impact would be slight but noticeable, but would not appreciably alter resource conditions such as traditional access or site preservation. For purposes of NHPA section 106, the determination of effect on the resource would be no adverse effect.	Adverse impact: The impact(s) would be apparent and would negatively alter the relationship between the resource and the affiliated group's beliefs and practices. For purposes of section 106, the determination of effect on the resource would be adverse effect. The determination of effect for section 106 would be adverse effect. A memorandum of agreement may be executed among the National Park Service, applicable state historic preservation officer, affected groups, and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures identified in the	Adverse impact: The impact would greatly alter the relationship between the resource and the affiliated group's body of beliefs and practices. For purposes of section 106, the determination of effect on the resource would be adverse effect. A memorandum of agreement may be executed among the National Park Service, applicable state historic preservation officer, affected groups, and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures to minimize or mitigate adverse impacts cannot be agreed on and the National Park Service, applicable state historic

TABLE 21. IMPACT THRESHOLD DEFINITIONS

Impact Topic and Duration	Negligible	Minor	Moderate	Major
			memorandum of agreement minimize or mitigate adverse impacts.	preservation officer, and/or Advisory Council on Historic Preservation are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).
VISITOR USE AND EXPERIENCE	Most visitors would likely be unaware of any effects associated with the implementation of the alternative.	Actions related to commercial activities would be slight yet detectable, would affect a few visitors, and would not appreciably limit or enhance primary visitor experience, opportunities, and/or setting conditions.	Actions related to commercial activities would be noticeable, would affect many visitors, and could have an appreciable effect on primary visitor experiences, opportunities, and/or setting conditions.	Actions related to commercial activities would be highly apparent, would affect most visitors, and would have severely adverse or exceptionally beneficial effect on primary visitor experiences, opportunities, and/or setting conditions.
PUBLIC HEALTH AND SAFETY	Potential risks related to public health and safety would be small and would be barely perceived, if at all.	Potential risks related to public health and safety would be slightly improved or reduced and would be perceived by some visitors.	Potential risks related to public health and safety would be noticeably improved or reduced; and would be perceived by many visitors.	Potential risks related to public health and safety would be exceptionally improved or severely reduced; and would be perceived by most visitors.
SOCIO-ECONOMICS	Tour Company Employment: Changes in the commercial services program would have little effect on the profitability of individual tour businesses or tour industry employment. Local Communities: Effects on social and economic conditions would be barely detectable or would affect a very small population.	Tour Company Employment: Changes in the commercial services program would measurably affect some tour businesses and tour industry employment. Local Communities: Effects on social and economic conditions would be relatively small, but detectable, and would affect a small number of people.	Tour Company Employment: Changes in the commercial services program would affect many tour businesses or have an effect at the local tour industry level. The changes would widely affect the tour industry employment. Local Communities: Effects on social and economic conditions would be evident, affecting a population segment and/or local businesses.	Tour Company Employment: Changes in the commercial services program would substantially affect many tour businesses, would have a widespread effect on the local tour industry, or would create large shifts in tour industry employment. Local Communities: Effects on social and economic conditions would be apparent on the island of Maui, affecting a large segment of the population and/or many local businesses.
PARK OPERATIONS	Effects would be below the level of detection.	Effects would be small but detectable. The change would be noticeable to staff, but probably not to the public.	Effects would be readily apparent to staff and possibly to the public in terms of effects on visitor experience.	Effects would be readily apparent to staff and the public and would result in substantial, widespread changes.

CUMULATIVE IMPACT ANALYSIS SCENARIO

A cumulative impact is described in the Council on Environmental Quality's regulation 1508.7 as follows:

> *Cumulative impacts* are the impacts that result from incremental impacts of the action when added to other past, present, and reasonably foreseeable actions, regardless of what agency (federal or nonfederal) or person undertakes such other action. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over time.

Each cumulative impact analysis is additive, considering the overall impact of the alternative when combined with effects of other actions—both inside and outside the park—that have occurred or that would likely occur in the foreseeable future.

To determine potential cumulative impacts, past, present, and future potential actions and developments within and surrounding Haleakalā National Park were considered by the planning team. In this case, most of the cumulative impacts that can be analyzed are due to actions that have occurred in the past. Haleakalā National Park is a relatively remote park. Most of the park is wilderness, and its island location isolates it from other adjacent land uses. With a few exceptions, no new actions or developments are foreseen within or adjacent to the park that would affect park resources and uses. No new developments, including tourism developments and roads, or changes in land ownership and management of adjacent lands are expected to occur that would directly or indirectly affect the park. No new uses of the park or changes in transportation to the island are considered likely, independent of what is proposed in the alternatives. Park visitation has been relatively stable and is not expected to substantially change over the time frame being analyzed.

Listed below are several reasonably foreseeable NPS actions that are considered in the cumulative impact analysis:

- The implementation of the Kīpahulu District comprehensive site plan, design program and site plan. Specifics being considered in the master plan are visitor safety/operations, emergency landing zone area, and law enforcement housing.
- Operations—improvements to the base yard (maintenance, resource storage and work areas), expanded or moved visitor center, expanded storage, maintenance staff housing, and off-grid/sustainable utility improvements.
- Visitor experience—improved overflow parking and improved campground.
- Trail improvements—accessible, improved circulation and flow, taking into consideration cultural resource locations.

  (Note: For purposes of this analysis, it is assumed that all new developments would occur in the existing development zone and adjacent disturbed areas; no new trails or other facilities would be built outside of these areas, although some existing facilities (e.g., trails) may be improved.)

- Rehabilitation of parking lots and approximately 4 miles of the park road between the park headquarters/visitor center and the Halemau'u trailhead (Note: For purposes of analysis, it is assumed that all disturbance would occur within the existing road bench.)
- The implementation of an air tour management plan that will govern commercial air tour operators flying over the park (Note: There are currently 12,796 helicopter flights per year, but 26,325 flights are authorized under the interim operating authority (IOA). Although the number of air tours flying over or adjacent to the park could increase to the IOA level, in recent years the number of tours has been declining. Thus, for purposes of analysis it is assumed the number of air tours flying over or adjacent to the park will stay at current levels.)

A non-NPS action that is planned to occur, which would likely affect the park independent of this plan, is the construction by the National Science Foundation (NSF) and operation by Association of Universities for Research in Astronomy (AURA) of a new advanced technology solar telescope adjacent to the summit outside of the park but within the Crater Historic District at the summit.

IMPACTS TO NATURAL RESOURCES

SOILS

Alternative A

Analysis. With the number of commercial groups likely to continue to increase under alternative A, the potential for soils to be trampled at the summit would persist or increase should visitors stray from established trails. Surface disturbance and compaction and pulverization of clinker soils would continue. Changes would occur in the topsoil in localized areas (e.g., loss of surface organic matter, reductions in surface organic horizons, compaction of mineral soil). Some topsoil would continue to be eroded and lost. Guided groups would continue to contribute to this erosion at the summit overlooks, primarily during sunrise and less during other times of the day. However, many of the soils in the overlook areas already have been substantially altered by past use. Thus, continuing soil impacts due to guided groups would be expected to be localized, adverse, minor to moderate, and long term.

At Kīpahulu, some soil erosion would likely continue to occur due to guided hiking groups using the Pīpīwai Trail, although periodic trail maintenance work should minimize this erosion. Ongoing use of the horse trail would likely result in a continuing limited amount of trail incision. The rapid rate of vegetation growth would continue to keep the trail from widening. Thus, alternative A would result in localized, long-term, minor, adverse effects on soils along the horse trail, particularly in wet, muddy areas. Localized long-term, minor, adverse effects on soils also would continue at the points where the horses stop, such as at the turnaround/end point—soil compaction and disturbance would continue to occur at the bases of trees used to tie horses. Overall, alternative A would result in long-term, minor, adverse impacts on soils in localized areas in Kīpahulu.

Overall, from a parkwide perspective, alternative A would have a minor long-term, adverse impact on soils, focused in a few areas.

Cumulative Impacts. The rehabilitation of the park road should occur within the existing road bench. This action would result in the compaction and loss of some soils along the road, resulting in a minor, long-term, adverse impact.

The construction of the solar telescope on the Haleakalā summit, adjacent to the park, would result in land clearing, grading and leveling, excavation, and other disturbance due to earthmoving. This would have a minor, short-term, adverse impact on soils (NSF 2009, 2011).

Possible new developments at Kīpahulu, such as the development of new staff housing, trails, and relocation of the base yard would disturb soils and result in increased impervious surface in the area. These projects would produce localized, long-term, minor to moderate, adverse effects on soils, but they would all occur in already disturbed areas and largely in different areas from the areas affected by guided groups.

When the localized, long-term, minor, adverse effects of guided groups on soils in alternative A are combined with minor, adverse impacts from expected construction projects, there would likely be a minor to moderate, long-term, adverse cumulative impact on soils in localized areas.

Conclusion. Guided groups would continue to trample some soils at the summit and guided hiker and horse group activity at Kīpahulu would produce localized, long-

term, minor, adverse effects on soils. Overall, alternative A would have a minor, long-term, adverse effect on the park's soils.

When the effects of guided visitors and expected future construction projects are added together, there would be a long-term, minor to moderate, adverse cumulative impact on soils in localized areas.

Alternative B

Analysis. Alternative B would have the same type of effects on soils on the summit as alternative A, but the intensity of the impact would differ. With fewer guided groups compared to alternative A, a ban on activities on a couple days per year, and increased training of guides, guided tour groups would still continue to impact soils at the summit, but at a reduced level compared to alternative A. Nevertheless, some surface disturbance and compaction and pulverization of clinker soils due to guided groups walking in the area would still continue, along with changes to topsoil in localized areas (e.g., loss of surface organic matter, reductions in surface organic horizons, compaction of mineral soil), and some erosion and loss of topsoil would continue. Thus, alternative B would result in a localized, long-term, negligible to minor, adverse impact.

At Kīpahulu, the new limits on commercial use, including initiating a few commercial tour-free days, would also reduce guided horse and hiking tours in this area. Some soil erosion would still likely occur due to guided hiking groups using the Pīpīwai Trail, although periodic trail maintenance work should minimize this. A limited amount of trail incision would still be expected to occur due to horse use on the horse-trail, although vegetation growth would continue to keep the trail from widening. Localized long-term, minor, adverse effects on soils would continue along the trail in wet, muddy areas and areas where horses stop, such as at the turnaround/end point—soil compaction and disturbance would occur at the bases of trees used to tie horses. Overall, with fewer guided groups and increased training of guides, alternative B would probably result in less adverse effects on soils in Kīpahulu relative to alternative A—alternative B would likely result in a long-term, negligible to minor, adverse impact on soils in Kīpahulu.

Overall, compared to alternative A from a parkwide perspective, alternative B would have a long-term, minor, adverse impact on the park's soils, focused on a couple areas.

Cumulative Impacts. As described in alternative A, the rehabilitation of the park road would result in the compaction and loss of some soils along the road, resulting in a minor, long-term, adverse impact.

The construction of the solar telescope on the Haleakalā summit, adjacent to the park, would have a minor, short-term, adverse impact on soils (NSF 2009).

As noted in alternative A, a few new developments at Kīpahulu would be expected to occur, which would result in a minor to moderate, long-term, adverse impact on local soil resources. However, these soil impacts would all occur in already disturbed areas and mostly in different areas from the areas affected by guided groups.

When the localized, long-term, adverse effects of guided groups on soils in alternative B are combined with the minor to moderate impacts of new developments in and outside the park, there would likely be a minor to moderate, long-term, adverse, cumulative impact on soils in localized areas.

Conclusion. Some trampling, compaction, and erosion of soils still would occur under alternative B, but with fewer tour groups using the park and increased training of guides, alternative B would likely result in long-term, minor, adverse impacts on soils at the summit and at Kīpahulu—a reduction in impacts compared to alternative A. From a parkwide perspective, alternative B would have a long-term, negligible to minor,

adverse impact on the park's soils, focused in a few small areas.

When the effects of guided visitors are added together along with expected new developments, there would be a long-term, minor, adverse, cumulative impact in localized areas.

Alternative C

Analysis. Alternative C would decrease adverse effects on the summit's soils compared to alternative A. With a reduction in the number of parking spaces for road-based tours at the Haleakalā visitor center and a ban on parking at Red Hill, guided tour groups would continue to trample soils at the summit, but at a reduced level compared to alternative A. Some surface disturbance and compaction and pulverization of clinker soils would still continue due to guided groups walking in the area, along with changes to topsoil in localized areas. Some erosion and loss of topsoil also would continue. With fewer guided groups and increased training of guides there would be fewer soil impacts. Thus, alternative C would result in a localized long-term, negligible to minor, adverse impact on soils on the summit compared to alternative A.

At Kīpahulu, keeping the number of commercial use authorizations at 2009 levels, limiting group sizes of guided horse and hiking groups, and limiting the number of hiking trips per day would reduce the overall number of guided horse and hiking visitors in this area. Some soil erosion still would likely continue to occur due to guided hiking groups using the Pīpīwai Trail, although periodic trail maintenance work should minimize this. With continued horse use, a limited amount of trail incision would still be expected to occur on the horse-trail, although vegetation growth would continue to keep the trail from widening. Localized long-term, minor, adverse effects on soils would continue along the trail in wet, muddy areas and in areas where horses stop, such as at the turnaround/end point area—soil compaction and disturbance would occur at bases of trees used to tie horses. Overall, with fewer and smaller groups and increased training of guides, alternative C would result in a reduction in the level of adverse impacts. Compared to alternative A, alternative C would result in a long-term, negligible to minor, adverse effect on soils in Kīpahulu.

From a parkwide perspective, alternative C would have a long-term, negligible to minor, adverse impact on the park's soils, focused on a couple small areas, compared to alternative A.

Cumulative Impacts. Alternative C would have the same potential for cumulative effects as the previous alternatives. Like the previous alternatives, the rehabilitation of the park road would result in the compaction and loss of some soils along the road, resulting in a minor, long-term, adverse impact.

As described in alternative A, the construction of the solar telescope on the Haleakalā summit, adjacent to the park, would have a minor, short-term, adverse impact on soils (NSF 2009).

As noted in alternative A, a few new developments would be expected in the Kīpahulu area, which would result in a minor to moderate, long-term, adverse impact on local soil resources. However, these soil impacts would all occur in already disturbed areas and mostly in different areas from the areas affected by tour groups.

When the localized, long-term, negligible to minor, adverse effects of guided groups on soils in alternative C are combined with the minor to moderate, long-term, adverse impacts of expected new developments inside and outside the park, there would likely be a minor to moderate, long-term, adverse, cumulative impact in localized areas.

Conclusion. Alternative C would have many of the same effects as alternative B. Some trampling, compaction, and erosion of soils due to guided groups would occur under alternative C, but with fewer, smaller tour groups using the park and increased training of guides, alternative C would likely result in long-term, negligible to minor, adverse impacts on soils at the summit and at Kīpahulu area. From a parkwide perspective, alternative C would have a long-term, negligible to minor, adverse impact on the park's soils, focused on a few small areas.

When the overall effects of guided and unguided visitors and the effects of expected new developments are added together, there would be the potential for a long-term, minor to moderate, adverse, cumulative impact on soils in localized areas relative to alternative A.

Alternative D

Analysis. Alternative D would have similar effects on soils on the summit as alternative A. However, capping the number of commercial service providers, limiting the number of guided hiking trips per day, capping the number of parking spaces for road-based tours, and requiring training of commercial guides would be expected to somewhat reduce the level of adverse impact compared to alternative A. Some surface disturbance and compaction and pulverization of clinker soils due to guided groups walking in the area would still continue, along with changes to topsoil in localized areas. Some erosion and loss of topsoil would continue. With fewer guided groups causing fewer soil impacts, alternative D would result in a localized long-term, minor, adverse impact compared to alternative A.

Alternative D also would have about the same effects as alternative A at Kīpahulu. Localized, long-term, minor, adverse effects would occur on soils along the horse trail due to horse use would result in soil compaction and disturbance in muddy, wet areas, and at points where the horses stop, such as at the bases of trees used to tie horses. Some soil erosion also would still occur due to guided hiking groups walking up the Pīpīwai Trail. Overall, alternative D would result in long-term, minor, adverse impacts on soils in localized areas in Kīpahulu.

Overall, from a parkwide perspective, compared to alternative A. Alternative D would have a long-term, negligible to minor, adverse impact on the park's soils, focused on a couple of small areas, but more potential for impacts than the other alternatives.

Cumulative Impacts. Alternative D would have the same potential for cumulative effects as the previous alternatives. Like the previous alternatives, the rehabilitation of the park would result in the compaction and loss of some soils along the road, resulting in a minor, long-term, adverse impact.

As described under alternative A, the construction of the solar telescope on the Haleakalā summit, adjacent to the park, would have a minor, short-term, adverse impact on soils (NSF 2009).

As noted in alternative A, a few new developments at Kīpahulu would be expected to occur, which would result in a minor to moderate long-term, adverse impact on local soil resources. However, these impacts would all occur in already disturbed areas and mostly in different areas from the areas affected by tour groups.

When the localized, long-term, minor, adverse effects of guided groups on soils in alternative D are combined with the effects of expected new developments inside and outside the park, there would likely be a minor to moderate, long-term, adverse, cumulative impact on soils in localized areas.

Conclusion. Alternative D would likely have about the same minor long-term, adverse effects on soils at the summit and at Kīpahulu as alternative A due to trampling,

compaction, and erosion of soils by guided horse and hiking groups. From a parkwide viewpoint, alternative D would have a long-term, negligible to minor, adverse impact on the park's soils, focused on a couple of small areas.

When the adverse effects of guided visitors and expected new developments are added together, there would be a long-term, minor to moderate, adverse, cumulative impact on soils in a few localized areas.

VEGETATION

Alternative A

Analysis. With increased numbers of guided groups and higher numbers of guided road-based hiking and astronomy visitors, under alternative A, the potential for adverse impacts to the summit's vegetation would be expected to increase. Trampling and crushing of vegetation would likely increase. Some vegetation also would be lost or damaged due to the disturbance of the soil substrate and downhill sliding of soils onto vegetation. This would have a minor, long-term, adverse impact in localized areas, particularly at the summit overlooks (although the terrain, sidewalks, and guardrails would largely limit these impacts).

At Kīpahulu, the vegetative cover and soils are more suited for horse use than those of the crater. With increased hiking and horse traffic in alternative A, increased disturbance to vegetation would occur in localized areas, primarily trampling and crushing vegetation. Horses would have the potential to introduce and spread nonnative vegetation. Some vegetation also would still be damaged or lost due to guided hiking groups walking up the Pīpīwai Trail, going slightly off-trail in areas without boardwalks to avoid muddy areas or obstructions, which would result in a long-term, negligible, adverse impact. On the horse trail, horses would continue to nibble on vegetation. Areas along the trail where horses stop and are tied up, also would likely continue to experience vegetation loss due to trampling and grazing. However, the vegetation in these areas is largely nonnative. Overall, increased guided hiking and horse groups in alternative A would be expected to result in localized, long-term, minor, adverse effects on vegetation, primarily along the horse trail.

Overall, from a parkwide perspective, alternative A would likely have a minor, adverse impact on the park's vegetation, focused in a few areas.

Cumulative Impacts. The rehabilitation of the park road should occur within the existing road footprint. Thus, this action should not affect native vegetation along the roadside.

The construction of the solar telescope on the Haleakalā summit, adjacent to the park, would result in the loss of vegetation on the site due to earth movement. With the application of mitigation measures, this would have a negligible, long-term, adverse impact on vegetation (NSF 2009).

Possible new developments at Kīpahulu, such as the development of new staff housing, trails, and relocation of the base yard would result in the loss and disturbance of vegetation in localized areas, but they would mostly occur in areas that already have been disturbed and in different areas from the areas affected by tour groups. These projects would likely produce localized long-term, negligible to minor, adverse effects on the area's vegetation. The construction of the solar telescope on the Haleakalā summit would have a long-term, minor, adverse impact on vegetation (NSF 2009).

When the minor adverse effects of guided groups on vegetation in alternative A are combined with the future possible construction projects in and outside of the park, there would likely be a minor, long-term, adverse, cumulative impact on vegetation in localized areas.

Conclusion. With increased use by guided groups in alternative A, it is expected overall that there would continue to be localized, long-term, minor, adverse effects on vegetation in areas such as the summit and along trails in the Kīpahulu area. From a parkwide perspective, alternative A would have a long-term, minor, adverse impact on the park's vegetation.

When the effects of guided visitors, and expected future construction projects are added together, there would be a long-term, minor, adverse, cumulative impact on vegetation in localized areas.

Alternative B

Analysis. With a freeze on the number of commercial use authorizations issued at 2009 levels, a ban on guided activities on a couple days, and increased training of guides, guided road-based hiking and astronomy tour groups would still continue to impact vegetation at the summit, but at a reduced level compared to alternative A. With fewer guided groups, trampling and crushing of vegetation would likely decrease. Thus, compared to alternative A, alternative B would have a reduced long-term, negligible, adverse impact on vegetation in localized areas, particularly at the summit overlooks.

The same conditions noted above in alternative A also would apply in the Kīpahulu area. Some trampling and crushing of vegetation would still occur due to guided hiker groups going off the Pīpīwai Trail to avoid muddy areas or obstructions. On the horse trail, there would be the potential for horses to introduce and spread nonnative vegetation. Horses would continue to nibble on vegetation. Areas along the trail where horses stop and are tied up at the bases of trees, also would likely continue to experience vegetation loss due to trampling and grazing. However, the vegetation in these areas is largely nonnative. With reduced use levels and more training of guides, vegetation loss and disturbance would be expected to decline compared to alternative A, resulting in a long-term, negligible impact to vegetation along Kīpahulu trails.

Overall, from a parkwide perspective, alternative B would reduce the impact on the park's vegetation, resulting in a long-term, negligible, adverse impact on the park's vegetation relative to alternative A.

Cumulative Impacts. As noted in alternative A, the rehabilitation of the park road should have no effect on native vegetation, assuming all disturbances occur within the existing road bench.

With mitigation, the construction of the solar telescope on the Haleakalā summit, adjacent to the park, would have a negligible, long-term, adverse impact on vegetation (NSF 2009).

As noted in alternative A, a few new developments in Kīpahulu would be expected to occur, which would result in the loss and modification of vegetation in localized areas. However, the vegetation in these areas is mostly nonnative, and these impacts would mostly occur in different areas from those affected by tour groups. Thus, the adverse impacts of the new developments would likely be localized, negligible to minor, and long term.

When the negligible adverse effects of guided groups on vegetation in alternative B are combined with the impacts of new developments in and outside the park, there would likely be a minor, long-term, adverse, cumulative effect on vegetation in localized areas. However, the increment added by alternative B to the overall cumulative impact would be very small.

Conclusion. Guided groups in alternative B would still result in some loss and disturbance of vegetation at popular use areas, including the summit's overlooks and the Kīpahulu area. With reduced numbers of guided groups and increased training of guides, fewer vegetative impacts would be

expected. Overall, alternative B would have less of an impact on vegetation in localized areas, compared to alternative A, resulting in a long-term, negligible, adverse impact. There also would be the potential for a minor, long-term, adverse, cumulative effect on vegetation in localized areas when the effects of guided visitor use and expected new developments are added together.

Alternative C

Analysis. Under alternative C guided road-based hiking and astronomy tour groups would still continue to trample and crush vegetation at the summit, but at a reduced level compared to alternative A. With a reduction in the number of commercial use providers, a reduction in hiker group sizes, a reduction in parking spaces for road-based tours at the Haleakalā visitor center, a ban on parking at Red Hill, and increased training of guides, trampling and crushing of vegetation by guided tour groups would likely decrease. Thus, compared to alternative A, alternative C would have a reduced long-term, negligible, adverse impact on vegetation in localized areas, particularly at the summit overlooks.

The same conditions noted above also would apply in the Kīpahulu area. Some trampling and crushing of vegetation would still occur due to guided hiker groups going slightly off the Pīpīwai Trail to avoid muddy areas or obstructions. On the horse trail, there would always be the potential for horses to introduce and spread nonnative vegetation. Horses would continue to nibble on vegetation. Areas along the trail where horses stop and are tied up at the bases of trees, also would likely continue to experience vegetation loss due to trampling and grazing. However, the vegetation in these areas is largely nonnative. And with reduced use levels and more training of guides, vegetation loss and disturbance would be expected to decline compared to alternative A, resulting in a reduced long-term, negligible, adverse impact to vegetation along Kīpahulu trails.

Overall, from a parkwide perspective, alternative C would have fewer impacts on the park's vegetation, resulting in a long-term, negligible, adverse impact on the park's vegetation relative to alternative A.

Cumulative Impacts. As noted in alternative A, the rehabilitation of the park road should have no effect on native vegetation, assuming all disturbance occurs within the existing road prism.

With mitigation, the construction of the solar telescope on the Haleakalā summit, adjacent to the park, would have a negligible, long-term, adverse impact on vegetation (NSF 2009).

As noted in alternative A, new developments occur in the Kīpahulu area dependent on the outcome of the Kīpahulu District comprehensive site plan process. New development would result in the loss and modification of the area's vegetation. However, these impacts would mostly occur in already disturbed areas with nonnative vegetation and in different areas from those affected by tour groups. Thus, the adverse impacts of the new developments would likely be localized, negligible to minor, and long term.

When the negligible, adverse effects of guided groups on vegetation in alternative C are combined with the impacts of new developments inside and outside the park, there would likely be a minor, long-term, adverse, cumulative effect on vegetation in localized areas. However, the increment added by alternative C to the overall cumulative impact would be very small.

Conclusion. Alternative C would have many of the same effects as alternative B. Guided groups in alternative C would still cause some loss and disturbance of vegetation at popular use areas, such as the summit's overlooks. With reduced numbers of guided groups and increased training of guides, fewer vegetative impacts would be expected. Overall, alternative C would have a less of an impact on vegetation in localized areas,

compared to alternative A, resulting in a long-term, negligible, adverse impact. There also would be the potential for a minor, long-term, adverse, cumulative impact on vegetation in localized areas when the effects of guided visitor use and expected new developments in and outside the park are added together.

Alternative D

Analysis. Alternative D would have similar effects on vegetation on the summit as alternative A. Guided road-based hiking and astronomy groups would still trample and crush vegetation. (Bike tours would be expected to stay on paved areas and would not affect vegetation.) However, capping the number of commercial service providers, limiting the number of hiking trips per day, and requiring training of commercial guides would be expected to reduce the level of impact compared to alternative A. With fewer guided groups causing fewer vegetation impacts, alternative D would result in a reduced, localized, long-term, negligible, adverse impact to vegetation on the summit compared to alternative A.

Alternative D also would have similar effects as alternative A at Kīpahulu. With increased use levels, some vegetation would be damaged or lost due to guided hiking groups walking up the Pīpīwai Trail. As in all of the alternatives, horses would have the potential to introduce and spread nonnative vegetation. Localized, long-term, minor, adverse effects would occur on vegetation along the horse trail due to horses trampling and feeding on plants, particularly in areas along the trail where horses stop and are tied up at the bases of trees. However, the vegetation in these areas is largely nonnative. With limits on how much guided group use could increase, and with increased training of guides, alternative D would be expected to have fewer adverse impacts than alternative A—alternative D would result in reduced, localized, negligible, adverse impacts on vegetation along the Pīpīwai Trail compared to alternative A.

Overall, from a parkwide viewpoint, alternative D would have less of an impact on the park's vegetation compared to alternative A, resulting in a long-term, negligible, adverse impact.

Cumulative Impacts. Alternative D would have the same potential for cumulative impacts as the previous alternatives. As noted in alternative A, the rehabilitation of the park road would have no effect on native vegetation, assuming all disturbance occurs within the existing road prism.

With mitigation, the construction of the solar telescope on the Haleakalā summit, adjacent to the park, would have a negligible, long-term, adverse impact on vegetation (NSF 2009).

As noted in alternative A, a few new developments would be expected to occur in the Kīpahulu area, which would result in the loss and modification of vegetation in localized areas. However, these areas already have been disturbed and the impacts would mostly occur in different areas from the areas affected by tour groups. Thus, the effect of the new developments would be a negligible to minor, long-term, adverse impact on the area's vegetation.

When the negligible, adverse effects of guided groups on vegetation in alternative D are combined with the impacts of new developments in and outside the park, there would likely be a minor, long-term, adverse cumulative effect on vegetation in localized areas. However, the increment added to the overall cumulative impact by alternative D would be very small.

Conclusion. With increased use, guided groups in alternative D would result in vegetation damage and loss at the summit, and at Kīpahulu. However, with the limits on future increases in use, unlike alternative A, and increased training of guides, the impacts of alternative D would be somewhat less than alternative A. Overall, alternative D would be expected to have less of an impact on vegetation in localized areas relative to

alternative A, resulting in a long-term, negligible, adverse impact. When the effects of guided visitors and likely future construction projects are added together, there would be a long-term, minor, adverse, cumulative effect on vegetation in localized areas.

SPECIAL STATUS SPECIES

Alternative A

Analysis. As noted in chapter 1, four federally listed species are analyzed in this assessment—Haleakalā silversword, nohoanu, nēnē, and Hawaiian petrel. Critical habitats for the silversword and nohoanu are also analyzed. (There are no designated critical habitats for the nēnē and Hawaiian petrel.)

Humans have affected, and likely would continue to affect, all of these listed species. However, it is not usually known if guided or unguided visitors, or both groups, are affecting the four species or to what degree they are being affected. Under alternative A guided visitor groups walking on the summit would probably unknowingly trample some silversword seeds and seedlings, affecting the recovery of the species. Nēnē may be fed by visitors in tour groups who are not being watched by guides, nesting geese may be disturbed by a group walking by, and it is possible that a vehicle driven by commercial operator could occasionally hit and kill or injure a nēnē. Likewise, vehicles driving up the road for astronomy tours may occasionally collide with Hawaiian petrels. For all these species it is possible under alternative A that continued use of the park by guided groups, and potentially increased use in the future, would result in minor to moderate, long-term, adverse impacts. However, although some individuals may be lost, injured, or their behavior altered, it is likely that this use would not threaten the continued existence of the species.

None of the actions in alternative A would alter or degrade the essential habitat features for the Haleakalā silversword or the nohoanu, as described in chapter 3 (e.g., lava flows, precipitation). Thus, there would be no effects of alternative A on the designated critical habitats of the two listed plant species.

Cumulative Impacts. None of the possible new developments and expansion or rehabilitation of existing facilities on park lands identified in the "Cumulative Impacts Scenario" would affect the silversword, nohoanu, Hawaiian petrel, and nēnē or their habitats.

As noted by the National Science Foundation, development of the new solar telescope on the Haleakalā summit (with mitigation) would be expected to have negligible, short- and long-term, adverse impacts on the silversword and moderate, long-term, adverse impacts on the Hawaiian petrel and nēnē (NSF 2009, 2011). No other impacts on the four listed species would be expected due to present and future actions taken by other entities.

When the minor to moderate adverse effects of alternative A are added to the above effects, there would likely be a minor, long-term, adverse, cumulative impact on these species.

Because alternative A would have no effects on critical habitats of the species, the alternative would not contribute to cumulative effects on designated critical habitat.

Conclusion. With continued use, and probably increased use, by guided groups under alternative A, minor to moderate, long-term, adverse impacts could occur to the federally listed Hawaiian petrel, nēnē, Haleakalā silversword, and nohoanu. These impacts would be both disturbance and possible injury and loss of some individuals. While the National Park Service believes that alternative A would have negligible, long-term impacts on the four species, the effects

of activities in alternative A cannot be uncoupled from other park activities. These effects are also being analyzed and addressed through a programmatic consultation under section 7 of the Endangered Species Act with the U.S. Fish and Wildlife Service. The programmatic consultation is taking place in 2012 and will be incorporated into the decision for this document.

Alternative B

Analysis. As noted in alternative A, humans have affected, and likely would continue to affect, individuals of the federally listed Haleakalā silversword, nohoanu, nēnē, and Hawaiian petrel. However, it is usually not known if guided or unguided visitors, or both groups, are affecting these species and their habitats, or to what degree they are being affected. As in all of the alternatives, it is possible in alternative B that guided visitor groups walking on the summit would unknowingly trample some silversword seeds and seedlings; vehicles driving up the road for astronomy tours may occasionally collide with Hawaiian petrels; and nēnē may be fed by visitors in tour groups who are not being watched by guides, nesting geese may be disturbed by a group walking by, or a vehicle driven by commercial operator could occasionally hit and kill or injure a nēnē. However, with a reduction in the number of commercial service providers; limits on the number of trips per day that hiking, horseback riding, and astronomy commercial service providers can offer; a ban on all guided use several days per year; and increased training of guides, the potential for adverse impacts on the species would decline relative to alternative A. Thus, although there would be the potential for some individuals of the four species to be lost, injured, or the behavior of the two animal species to be altered, compared to alternative A, alternative B would have less of a long-term, adverse impact on the four listed species—alternative B would be expected to have a long-term, minor, adverse impact on the four species.

None of the actions in alternative **B** would alter or degrade the essential habitat features for the Haleakalā silversword or the nohoanu, as described in chapter 3 (e.g., lava flows, precipitation). Thus, there would be no effects of alternative B on the designated critical habitats of the two listed plant species.

Cumulative Impacts. None of the proposed new developments and expansion or rehabilitation of existing facilities on park lands identified in the "Cumulative Impacts Scenario" would affect the silversword, nohoanu, Hawaiian petrel, nēnē or their habitats.

As noted by the National Science Foundation, development of the new telescope on the Haleakalā summit (with mitigation) would be expected to have negligible, short- and long-term impacts on the silversword and moderate, adverse, long-term impacts on the Hawaiian petrel and nēnē (NSF 2009, 2011). No other impacts on the four listed species would be expected due to present and future actions taken by other entities.

When the minor, adverse effects of alternative A are added to the above effects, there would likely be a minor, long-term, adverse, cumulative impact on these species.

Because alternative B would have no effects on critical habitats of the two plant species, the alternative would not contribute to cumulative effects on designated critical habitats of the two species.

Conclusion. Under alternative B, there would continue to be the potential for disturbance and possible injury and loss of some Haleakalā silverswords, nohoanus, nēnēs, and Hawaiian petrels. However, the continued use of the park by guided groups in alternative B would not threaten the continued existence of the species. With limits on the increase of guided groups, bans on guided use several days per year, and increased training of guides, the potential for these impacts on the species would decline

compared to alternative A. Overall, alternative B would have a minor, long-term, adverse impact on the four listed species.

When the effects of alternative B are combined with other present and future actions independent of this plan, there would likely be a minor, long-term, adverse, cumulative impact on the four federally listed species. Based on the definitions of the U.S. Fish and Wildlife Service, alternative B may affect but would not be likely to adversely affect the four federally listed species in the park and would not affect designated critical habitats for the two plant species.

While the National Park Service believes that alternative B would have negligible to minor, long-term impacts on the four species, the effects of activities in alternative B cannot be uncoupled from other park activities. These effects are also being analyzed and addressed through a programmatic consultation under section 7 of the Endangered Species Act with the U.S. Fish and Wildlife Service. The programmatic consultation is taking place in 2012 and will be incorporated into the decision for this document.

Alternative C

Analysis. As noted in the previous alternatives, humans have affected, and likely would continue to affect, individuals of the federally listed Haleakalā silversword, nohoanu, nēnē, and Hawaiian petrel. However, it is usually not known if guided or unguided visitors, or both groups, are affecting these species and their habitats, or to what degree they are being affected. As in all of the alternatives, it is possible in alternative C that guided visitor groups walking on the summit would unknowingly trample some silversword seeds and seedlings; some nohoanu may be trampled or eaten by horses in guided groups at the top of the Kaupō Trail; vehicles driving up the road for astronomy tours may occasionally collide with Hawaiian petrels; and nēnē may be fed by visitors in tour groups who are not being watched by guides, nesting geese may be disturbed by a group walking by, or a vehicle driven by commercial operator could occasionally hit and kill or injure a nēnē. However, with a reduction in the number of commercial service providers; limits on the number of trips per day hiking, horseback riding, and astronomy commercial service providers can offer; a reduction in the group size for horseback riding and astronomy tours; and increased training of guides, the potential for adverse impacts on the species would decline relative to alternative A. Thus, although there would be the potential for some individuals of the four species to be lost or injured, or the behavior of the two animal species to be altered, compared to alternative A, alternative C would have less of a long-term, adverse impact on the four listed species—alternative C would be expected to have a minor, long-term, adverse impact on the four listed species.

Like the previous alternatives, none of the actions in alternative C would alter or degrade the essential habitat features for the Haleakalā silversword or the nohoanu, as described in chapter 3. Thus, there would be no effects of alternative C on the designated critical habitats of the two listed plant species.

Cumulative Impacts. None of the proposed new developments and expansion or rehabilitation of existing facilities on park lands identified in the "Cumulative Impacts Scenario" would affect the silversword, nohoanu, Hawaiian petrel, nēnē or their habitats.

As noted by the National Science Foundation, development of the new telescope on the Haleakalā summit (with mitigation) would be expected to have negligible, short- and long-term, impacts on the silversword, and moderate, long-term, adverse impacts on the Hawaiian petrel and nēnē (NSF 2009, 2011). No other impacts on the four listed species would be expected

due to present and future actions taken by other entities.

When the minor, adverse effects of alternative C are added to the above effects, there would likely be a minor, long-term, adverse, cumulative impact on these species.

Because alternative C would have no effects on critical habitats of the two plant species, the alternative would not contribute to cumulative effects on designated critical habitats of these species.

Conclusion. Under alternative C there would continue to be the potential for disturbance and possibly the injury and loss of some Haleakalā silverswords, nohoanus, nēnēs, and Hawaiian petrels. However, the continued use of the park by guided groups in alternative C would not threaten the continued existence of the species. With limits on increased use by guided groups, a reduction in some group sizes, and increased training of guides, the potential for these impacts on the species would decline. Compared to alternative A, alternative C would have a long-term, minor, adverse impact on the four listed species. When the effects of alternative C are combined with other present and future actions independent of this plan, there would likely be a minor, long-term, adverse, cumulative impact on the four federally listed species. Based on the definitions of the U.S. Fish and Wildlife Service, alternative C may affect but would not be likely to adversely affect the four federally listed species in the park and would not affect designated critical habitats for the two plant species.

While the National Park Service believes that alternative C would have a minor, long-term effect on the four species, the effects of activities in alternative C cannot be uncoupled from other park activities. These effects are also being analyzed and addressed through a programmatic consultation under section 7 of the Endangered Species Act with the U.S. Fish and Wildlife Service. The programmatic consultation is taking place in 2012 and will be incorporated into the decision for this document.

Alternative D

Analysis. As noted in the previous alternatives, humans have affected, and likely would continue to affect, individuals of the federally listed Haleakalā silversword, nohoanu, nēnē, and Hawaiian petrel. However, it is usually not known if guided or unguided visitors, or both groups, are affecting these species and their habitats, or to what degree these species are being affected. As in all of the alternatives, it is possible in alternative D that guided visitor groups walking on the summit would unknowingly trample some silversword seeds and seedlings; that vehicles driving up the road for astronomy tours may occasionally collide with Hawaiian petrels; and that nēnē may be fed by visitors in tour groups who are not being watched by guides, nesting geese may be disturbed by a group walking by, or a vehicle driven by commercial operator could occasionally hit and kill or injure a nēnē. Unlike the other action alternatives, commercial guided groups could increase in number in alternative D, which could increase the potential for impacts. However, with limits on the number of commercial service providers; limits on the number of trips per day hiking, horseback riding, and astronomy commercial service providers can offer; and increased training of guides, the potential for adverse impacts on the species would decline relative to alternative A. There would be the potential for some individuals of the four species to be lost or injured, or for the behavior of the two animal species to be altered; however, compared to alternative A, alternative D would have less of a long-term, adverse impact on the four listed species—alternative D would be expected to have a minor, long-term, adverse impact on the four species.

Like the previous alternatives, none of the actions in alternative D would alter or degrade the essential habitat features for the

Haleakalā silversword or the nohoanu, as described in chapter 3. Thus, there would be no effects of alternative D on the designated critical habitats of the two listed plant species.

Cumulative Impacts. None of the proposed new developments and expansion or rehabilitation of existing facilities on park lands identified in the "Cumulative Impacts Scenario" would affect the silversword, nohoanu, Hawaiian petrel, nēnē or their habitats.

As noted by the National Science Foundation, development of the new telescope on the Haleakalā summit (with mitigation) would be expected to have negligible, short- and long-term impacts on the silversword, and moderate, long-term, adverse impacts on the Hawaiian petrel and nēnē (NSF 2009, 2011). No other impacts on the four listed species would be expected due to present and future actions taken by other entities.

When the minor adverse effects of alternative D are added to the above effects, there would likely be a minor, long-term, adverse, cumulative impact on these species.

Because alternative D would result in no effects on critical habitats of the species, the alternative would not contribute to cumulative effects on designated critical habitats of the two plant species.

Conclusion. Under alternative D there would continue to be the potential for disturbance and possibly the injury and loss of some Haleakalā silverswords, nohoanus, nēnēs, and Hawaiian petrels. However, the continued use of the park by guided groups in alternative D would not threaten the continued existence of the species. With limits on increased use of guided groups and increased training of guides, the potential for such impacts on the species would decline. Compared to alternative A, alternative D would have a minor, long-term, adverse impact on the four listed species. When the effects of alternative D are combined with other present and future actions independent of this plan, there would likely be a minor, long-term, adverse cumulative impact on the four federally listed species. Based on the definitions of the U.S. Fish and Wildlife Service, alternative D may affect but would not be likely to adversely affect the four federally listed species in the park and would not affect designated critical habitats for the two plant species.

While the National Park Service believes that alternative D would have minor, long-term impacts on the four species, the effects of activities in alternative D cannot be uncoupled from other park activities. These effects are also being analyzed and addressed through a programmatic consultation under section 7 of the Endangered Species Act with the U.S. Fish and Wildlife Service. The programmatic consultation is taking place in 2012 and will be incorporated into the decision for this document.

SOUNDSCAPE

Note: This section only examines the effects of changes in sounds on the soundscape. The effect of noise on the visitor experience is evaluated under "Opportunities for Solitude and Quiet" in the "Visitor Use and Experience" section.

Alternative A

Analysis. Under alternative A most of the park's soundscape would continue to be primarily comprised of natural-caused sounds. In developed areas, including the summit and Kīpahulu area, and the road to the summit, noise from people, horses, and vehicles would continue to generate noise above the natural ambient sound level. With increased guided use in the future, noise levels would be expected to increase, particularly in popular areas, resulting in a minor to moderate, long-term, adverse impact to the soundscape in localized

frontcountry areas (e.g., the summit and Kīpahulu).

Overall, from a parkwide perspective, alternative A would have a minor to moderate, long-term, adverse impact on the park's soundscape.

Cumulative Impacts. The major source of human-caused noise for parts of Haleakalā National Park, particularly the Kīpahulu area, is from air tours and park administrative flights. Based on acoustic data collected in 2008, these aircraft are affecting the park's soundscape (Lynch and McCusker 2008). In the Kīpahulu area, noise from air tours would also affect sound levels, although noise from the Waimoku Falls would somewhat mask the aircraft noise in a localized area. Assuming there are no substantial changes in the types of aircraft, the number of administrative flights, or the number of helicopter air tours that fly over the park and the routes they typically take, air tours and park administrative aircraft probably would continue to have a long-term, moderate to major, adverse impact on the soundscape of the crater and a moderate adverse impact on the soundscape in the Kīpahulu area.

Noise from any proposed construction activities in the Kīpahulu developed area and the rehabilitation of part of the summit road would predominate during most of the daylight hours at low or medium levels. This would result in a moderate, short-term, adverse impact to the soundscape in these localized areas.

Noise from vehicles driving up and down the summit road to build the solar telescope and from construction-related noise on the summit (outside of the park) would result in a short-term, major, adverse impact. Noise from operation of the telescope would result in a minor, long-term, adverse impact on the soundscape (NSF 2009).

When all of the effects from actions in and outside the park are added to the noise from guided visitors in alternative A, there would be the potential for a moderate to major, short-term and a moderate to major, long-term, adverse, cumulative impact in localized areas of the park's soundscape. However, the increment added by alternative A to the overall cumulative impact would be very small—the impacts of alternative A would not result in a substantive contribution to the existing adverse cumulative impacts.

Conclusion. Alternative A would have a minor to moderate, long-term, adverse impact on the park's soundscape. Most of the park's soundscape would not be affected by the alternative. However, there would continue to be a minor to moderate, long-term, adverse impacts to the soundscape in localized areas of the park's popular frontcountry areas due to noise from continuing and increasing numbers of guided groups. These impacts would be most evident at the summit, on trails and in the Kīpahulu developed area. When the noise from helicopter air tours and administrative aircraft flying over or near the park and noise from construction activities inside and outside the park are added to the noise from guided visitors in alternative A, there would be the potential for a moderate to major, short-term and a moderate to major, long-term, adverse, cumulative impact in localized areas of the park's soundscape. Alternative A would add a very small increment to this overall moderate to major adverse cumulative impacts.

Alternative B

Analysis. Alternative B would primarily affect the soundscape in a few areas. In developed areas, including the summit and Kīpahulu area, and the road to the summit, the presence of guided visitors, horses, and vehicles would continue to generate noise above the natural ambient sound level. However, with a reduction in the number of commercial service providers, limits on the number of trips per day hiking, horseback riding and astronomy commercial service providers can offer, a ban on all guided use several days per year, and increased training

of guides, noise levels would probably decline somewhat. Compared to alternative A, alternative B would result in a reduced long-term, minor, adverse impact to the soundscape in localized areas in the frontcountry (e.g., the summit and Kīpahulu).

Overall, from a parkwide perspective, alternative B would have a less of an adverse impact on the park's soundscape compared to alternative A, resulting in a long-term, minor, adverse.

Cumulative Impacts. As in alternative A, helicopter air tours and NPS administrative flights probably would have a long-term, moderate to major, adverse impact on the soundscape of the crater and a moderate, adverse impact on the soundscape in the Kīpahulu area, assuming there are no substantial changes in the types of aircraft and the number of administrative aircraft and helicopter air tours that fly over the park and the routes they typically take.

As noted in alternative A, noise from any proposed construction activities in the Kīpahulu developed area and the rehabilitation of part of the summit road would result in a short-term, moderate, adverse impact.

Also as described in alternative A, noise from vehicles driving up and down the summit road to build the solar telescope and from construction activities on the summit, outside of the park, would result in a short-term, major, adverse impact. Noise from operation of the telescope would result in a minor, long-term, adverse impact on the soundscape (NSF 2009).
When all of the effects from actions in and outside the park are added to the noise from guided visitors, there would be the potential for a moderate to major, short-term, adverse cumulative impact in localized areas in the frontcountry. However, the increment added by alternative B would have a very small effect on the overall adverse cumulative impacts.

Conclusion. Overall, alternative B would have less of an impact on the park's soundscape compared to alternative A, resulting in a long-term, minor, adverse impact. There would be some adverse impacts on the soundscape in localized areas due to noise from guided groups at the summit, and in the Kīpahulu developed area, but actions taken to manage commercial use (e.g., limits on the increase of guided groups, bans on guided use several days per year, and increased training of guides) would reduce these impacts compared to alternative A. When the noise from helicopter air tours and administrative aircraft flying over or near the park and from likely future construction activities in and outside the park are added to the noise from guided visitors in alternative B, there would be the potential for a moderate to major, short-term, adverse cumulative impact in localized areas of the park's frontcountry. However, the increment added by alternative B would have a very small effect on the overall adverse cumulative impacts.

Alternative C

Analysis. Like all of the alternatives, alternative C would primarily affect a few areas of the park. In developed areas, including the summit and Kīpahulu areas, and the road to the summit noise from guided visitors, horses, and vehicles would continue to generate noise above the natural ambient sound level. However, with a reduction in the number of commercial service providers, limits on the number of trips per day hiking, horseback riding and astronomy commercial service providers can offer, a reduction in the group size for horseback riding and astronomy tours, and increased training of guides, noise levels would probably decline. Compared to alternative A, alternative C would result in a reduced long-term, minor, adverse impact to the soundscape in localized areas in the frontcountry (e.g., the summit, and Kīpahulu.

From a parkwide perspective, alternative C would less of an impact on the park's soundscape relative to alternative A, resulting in a long-term, minor, adverse impact.

Cumulative Impacts. Like the previous alternatives, helicopter air tours and park administrative flights probably would have a long-term, moderate to major, adverse impact on the soundscape of the crater and a moderate, long-term, adverse impact on the soundscape in the Kīpahulu area, assuming there are no substantial changes in the types of aircraft, the number of helicopter air tours and administrative aircraft that fly over the park and the routes they typically take.

As noted in alternative A, noise from any proposed construction activities in the Kīpahulu developed area and rehabilitation of part of the summit road would result in a short-term, moderate, adverse impact.

Noise from vehicles driving up and down the summit road to build the solar telescope and from construction activities on the summit, outside of the park, would result in a short-term, major, adverse impact. Noise from operation of the telescope would result in a minor, long-term, adverse impact on the soundscape (NSF 2009).

When all of the effects from actions in and outside the park are added to the noise from guided visitors, there would be the potential for a moderate to major, short-term, adverse cumulative impact in localized areas in the frontcountry soundscape. However, the increment of alternative C would have a very small effect on the overall adverse cumulative impacts.

Conclusion. Alternative C would have less of an impact on the park's soundscape than alternative A, resulting in a long-term, minor, adverse impact. Most of the park would not be affected by the alternative. There would be some adverse impacts to localized areas of the park's soundscape due to noise from guided groups at the summit, and in the Kīpahulu developed area, but actions taken to manage commercial use (e.g., a reduction in the number of commercial service providers, increased training of guides) would reduce these impacts compared to alternative A. When the noise from helicopter air tours and park administrative aircraft flying over or adjacent to the park and from any possible future construction activities inside and outside the park are added to the noise from guided visitors in alternative C, there would be the potential for a moderate to major, short-term, adverse cumulative impact in localized areas in the frontcountry. But the increment of alternative C would have a very small effect on the overall adverse cumulative impacts.

Alternative D

Analysis. Like all of the alternatives, under alternative D most of the park's soundscape would continue to be primarily comprised of natural-caused sounds. In developed areas, including the summit and Kīpahulu areas, the road to the summit, noise from guided visitors, horses, and vehicles would continue to generate noise levels above the natural ambient level. Unlike the other action alternatives, commercial guided groups could increase in number in alternative D. However, limits on the number of commercial service providers, limits on the number of trips per day hiking, horseback riding and astronomy commercial service providers can offer, and increased training of guides would help reduce noise levels somewhat. Thus, compared to alternative A, alternative D would result in a reduced, long-term, minor, adverse impact to the soundscape in localized areas in the frontcountry (e.g., the summit and Kīpahulu).).

From a parkwide perspective, alternative D would have less of an impact on the park's soundscape relative to alternative A, resulting in a long-term, minor, adverse impact.

Cumulative Impacts. As in all of the alternatives, helicopter air tours and NPS administrative flights probably would have a long-term, moderate to major, adverse impact on the soundscape of the crater and a moderate adverse impact on the soundscape in the Kīpahulu area, assuming there are no substantial changes in the types of aircraft, the number of helicopter air tours and administrative aircraft that fly over the park and the routes they typically take.

As noted in alternative A, noise from construction activities in the Kīpahulu developed area and rehabilitation work on part of the summit road would result in a short-term, moderate, adverse impact.

Also as described in alternative A, noise from vehicles driving up and down the summit road to build the solar telescope and from construction activities on the summit, outside of the park, would result in a short-term, major, adverse impact. Noise from operation of the telescope would result in a minor, long-term, adverse impact on the soundscape (NSF 2009).

When all of the effects from actions in and outside the park are added to the noise from guided visitors, there would be the potential for a moderate to major, short-term, adverse cumulative impact in localized areas in the frontcountry soundscape and a moderate to major, long-term, adverse cumulative impact in localized areas of the wilderness soundscape. However, the increment of alternative D would have a very small effect on the overall adverse cumulative impacts.

Conclusion. Overall, alternative D would have less of an impact on the park's soundscape compared to alternative A, resulting in a long-term, minor, adverse impact. Like all the alternatives, alternative D would not affect most of the park's soundscape. There would be some adverse impacts to localized areas of the park's soundscape due to noise from guided groups at the summit, and in the Kīpahulu developed area, the actions taken to manage commercial use (e.g., limits on the number of commercial service providers, limits on the number of trips per day hiking, horseback riding, and astronomy commercial service providers can offer, increased training of guides) would reduce these impacts compared to alternative A. When the noise from helicopter air tours and park administrative aircraft flying over or adjacent to the park, and from likely future construction activities in and outside the park are added to the noise from guided visitors in alternative D, there would be the potential for a moderate to major, short-term, adverse cumulative impact in localized areas of the park's. The increment added by alternative D would have a very small effect on the overall adverse cumulative impact.

IMPACTS TO CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES

Alternative A (no action)

Impact on archeological resources and other cultural resources emanate essentially from increase in visitor use, development of new facilities, and management programs, such as research or preservation of historic settings. The first two sources vary in their impact depending on the area of the park and on the amount and type of use expected (NPS 1995a). Archeological resources can be affected by visitors, including those who are part of commercial services operations. Visitors create informal trails outside of defined visitor use areas. Archeological sites in these areas can be damaged by visitors doing things like rock stacking, vandalism and artifact collecting when they walk off established trails.

Analysis. The no-action alternative describes the NPS approach to management of commercial services at the summit prior to 2005, with the exception that bicycle tours would continue to be prohibited in the park. Under the no-action alternative, archeological resources would continue to be adversely impacted. However, it is not usually known if guided or unguided visitors, or both groups, are affecting archeological resources or to what degree they are being affected. Some guided visitors would continue to leave established trails and walk through archeological resources. Some vandalism, rock stacking, and collection of artifacts would continue to occur. Guided horse groups would continue to have conflicts with hikers and create shortcuts and informal trails that diminish the integrity of archeological resources. Archeological resources adjacent to or easily accessible from trails and developed areas would be vulnerable to surface disturbance, inadvertent damage, and vandalism. The loss of surface archeological materials, alteration of artifact distribution, and reduction of contextual evidence would continue to occur. As in all of the alternatives, park managers would take necessary actions to resolve unanticipated problems as they arise. NPS managers would continue to strive to protect and preserve natural and cultural resources in the park. Impacts to archeological resources under alternative A would be long-term, minor, and adverse. (Note: All cultural resource impacts would be confined locally to the park.)

Cumulative Impacts. Past, present, and reasonably foreseeable future projects with the potential to affect archeological resources include (1) NPS implementation of the Kīpahulu District comprehensive site plan and design program;(2) rehabilitation of 3.77 miles of park road between park headquarters/visitor center and Halemau‘u trailhead; and (3) construction and operation of a new telescope within the Crater Historic District at the summit.

The Kīpahulu District comprehensive site plan is currently being developed by the National Park Service with a focus on improving visitor experience, natural and cultural resource protection, and park operations. It is assumed that any new development would be in the existing development zone and adjacent disturbed areas; no new trails or other facilities would be built outside of these areas, although some existing facilities (e.g., trails) may be improved. Implementation of the Kīpahulu District comprehensive site plan would have negligible, long-term, adverse impacts on archeological resources.

Rehabilitation of the main park road will occur within the existing road prism and will not involve expansion of the road or disturbance of adjacent lands and as such would have no impact on archeological resources.

Construction and operation of a new telescope at the summit will result in long-term, negligible, adverse, direct impacts on archeological resources (NSF 2009).

The effects or past, present, and reasonably foreseeable future actions on archeological resources would be long term, negligible to minor, and adverse.

Conclusion. As described above, implementation of alternative A would result in long-term, minor, adverse, and direct impacts on archeological resources.

When the impacts of alternative A are combined with other past, present, and reasonably foreseeable actions, there would likely be long-term, negligible to minor, adverse, and direct cumulative impacts to archeological resources.

Section 106 Summary. After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative A would result in determination of no adverse effect.

Alternative B (Preferred Alternative)

Analysis. Alternative B is intended to limit commercial services and reduce the number of commercial services visitors in the park. Alternative B would have the same type of effects on archeological resources at the summit as alternative A, but the intensity and frequency of the impacts would decrease slightly. Alternative B would freeze the number of guided groups to 2009 levels, prohibit commercial services activities on three to five days a year, limit sunrise commercial services to road-based tours, prohibit road-based tours from using motor coaches, reduce the number of parking spaces for road-based tours (from 13 under alternative A to 8 under alternative B); reduce the number of commercial service providers that can offer road-based hiking and horseback tours; reduce the number of hiking, horseback, and astronomy trips per day for each provider; and require all commercial guides to participate in training and be certified to operate in the park. Guided tour groups would continue to adversely impact archeological resources at the summit, but at a reduced level compared to alternative A. Some disturbance of archeological resources due to guided groups walking in the area would continue. Fewer guided groups, smaller group sizes, prohibiting commercial tours three to five days per year, and better trained/certified guides would result in fewer impacts, compared to alternative A. Alternative B would result in fewer long-term, minor impacts on archeological resources.

The new limits on commercial use, including initiating three to five commercial tour-free days per year, would also reduce guided horse and hiking tours in Kīpahulu. Some damage to archeological resources would still likely occur due to guided hiking groups using the Pīpīwai Trail.

Overall alternative B would result in fewer long-term, minor, adverse impacts on archeological resources when compared to alternative A.

Cumulative Impacts. As discussed under Alternative A, cumulative impacts from all past, present, and reasonably foreseeable actions would be long term, negligible to minor, and adverse.

Conclusion. As described above, implementation of alternative B would result in fewer long-term, minor effects to archeological resources when compared to alternative A.

When the impacts of alternative B are combined with other past, present, and reasonably foreseeable future actions there would likely be long-term, negligible to minor, adverse impacts to archeological resources when compared to alternative A.

Section 106 Summary. After applying ACHP criteria of adverse effect (36 CFR Part

800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative B would result in determination of no adverse effect.

Alternative C

Analysis. Alternative C would have the same type of effects on archeological resources at the summit as alternative A; however, the intensity and frequency of the impact would decrease significantly. Alternative C would limit sunrise tours to road-based tours; reduce the number of parking spaces (from 13 in alternative A to 6 in alternative C) for road-based tours at the summit; ban parking at Red Hill; reduce the number of commercial service providers that offer road-based hiking and horseback tours; limit the number of trips per day each provider could offer tours; and require commercial guides to participate in training and become certified to operate in the park.

Guided tour groups would likely continue to impact archeological resources at the summit, but at a reduced frequency and intensity compared to alternative A. Some disturbance of archeological resources would continue due to guided groups walking in the area. However, with fewer guided groups, smaller group sizes and increased training and certification of guides there would be fewer impacts to archeological resources.

At Kīpahulu, limiting the number of commercial use authorizations to one, limiting group sizes of guided hiking groups to six individuals, and limiting the number of hiking trips to one per day would reduce the overall number of hiking visitors in this area. Some impact on archeological resources would likely continue to occur due to guided hiking groups using the Pīpīwai Trail.

Overall implementation of alternative C would result in localized, long-term, negligible impacts on archeological resources.

Cumulative Impacts. As discussed under Alternative A, cumulative impacts from all past, present, and reasonably foreseeable actions would be long term, negligible to minor, and adverse.

Conclusion. Overall implementation of alternative C would result in localized, long-term, negligible impacts on archeological resources.

When the impacts of alternative C are combined with the impacts of other past, present, and reasonably foreseeable actions, the result would likely be long-term, negligible to minor, adverse impacts on archeological resources compared to alternative A.

Section 106 Summary. After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative C would result in a determination of no adverse effect.

Alternative D

Analysis. Alternative D would have the same type of effects on archeological resources at the summit as alternative A, but the intensity and frequency of the impact would increase compared to alternative A. Alternative D would increase the number of commercial use authorizations to established caps, establish up to five concession contracts for road-based tours, increase the number of parking stalls for road-based tours to 15 at the summit and 2 at Red Hill, and would authorize a new interpretive bicycle tour on the summit road. Alternative D would also allow each road-based tour operator to run an unlimited number of trips in Kīpahulu.

Guided tour groups would likely continue to impact archeological resources at the summit. The establishment of up to five concession contracts, increased number of parking stalls, a new interpretive bicycle tour, and increasing the number of commercial use authorizations up to

established caps would result in increased impacts on archeological resources compared to alternative A.

Alternative D would allow an unlimited number of trips would be allowed in Kīpahulu. Alternative D would require guides to participate in training and to be certified to operate in the park. At Kīpahulu some impact on archeological resources would likely continue to occur due to guided hiking groups using the Pīpīwai Trail.

Overall, with increased training and certification of guides, alternative D would result in long-term, minor to moderate, adverse impact on archeological resources in localized areas compared to alternative A.

Cumulative Impacts. As discussed under Alternative A, cumulative impacts from all past, present, and reasonably foreseeable actions would be long term, negligible to minor, and adverse.

Conclusion. Implementation of alternative D would result in long-term, minor to moderate adverse impacts on archeological resources.

When the impacts of alternative D are combined with the impacts of other past, present, and foreseeable actions, there would likely be long-term, minor to moderate, adverse cumulative impacts on archeological resources.

Section 106 Summary. After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative D would result in a determination of adverse effects to archeological resources.

CULTURAL LANDSCAPES

Alternative A (no action)

Analysis. Impacts to cultural landscapes emanate essentially from three sources—increasing visitor use; development of new facilities; and management programs, such as research or preservation of historic settings. The first two sources vary in their impact depending on the area of the park and on the amount and type of use expected (NPS 1995). Cultural landscapes can be affected by visitors, including those who are part of commercial services operations. Impacts to the Haleakalā Highway landscape are associated with visitor use of the park road. .

The no-action alternative describes the NPS approach to management of commercial services at the summit prior to 2005, with the exception that bicycle tours would continue to be prohibited in the park.

Commercial service providers operate within the Haleakala Highway of cultural landscape. The park road provides access to and egress from the developed areas. However, it is not usually known if guided or unguided visitors, or both groups, are affecting these cultural landscapes or to what degree they are being affected

As in all of the alternatives, park managers would take necessary actions to resolve unanticipated problems that arise. NPS managers would continue to strive to protect and preserve natural and cultural resources including cultural landscapes in the park.

Under alternative A, impacts to cultural landscapes would be long-term, minor, and adverse.

Cumulative Impacts. Past, present, and reasonably foreseeable future projects with the potential to affect cultural landscapes include (1) NPS implementation of the Kīpahulu District site plan and design program; (2) rehabilitation of 3.77 miles of the park road between the park headquarters / visitor center and the Halemauʻu trailhead; and (3) construction and operation of a new telescope within the Crater Historic District at the summit.

The Kīpahulu District comprehensive site plan is currently being developed by the

National Park Service with a focus on improving visitor experience, natural and cultural resource protection, and park operations. It is assumed that any proposed new development would be in the existing development zone and adjacent disturbed areas; no new trails or other facilities would be built outside of these areas, although some existing facilities (e.g., trails) may be improved.
Implementation of the Kīpahulu District comprehensive site plan would have no impact on cultural landscapes.

Rehabilitation of the main park road will occur within the existing road prism and will not involve expansion of the road or disturbance of adjacent lands and as such should have no impact on cultural landscapes.

Construction and operation of a new telescope at the summit will result in short-term, minor to moderate, adverse, direct impacts to cultural landscapes within the park (NSF 2009).

Overall impacts on cultural landscapes from all past, present, and reasonably foreseeable actions would be short term, minor to moderate, and adverse.

Conclusion. Overall impacts to cultural landscapes from alternative A would be long term, minor, and adverse. In conjunction with past, present, and reasonably foreseeable future actions, impacts would be short term, minor to moderate, and adverse.

Section 106 Summary. After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative A would result in a determination of no adverse effect to cultural landscapes.

Alternative B (Preferred Alternative)

Analysis. Alternative B is intended to limit commercial services and reduce the number of commercial services visitors in the park.

Alternative B would have the same type of effects on the cultural landscape at the summit as alternative A, but the intensity and frequency of the impacts would decrease slightly. Some wear and tear impacts, occasional vehicle accidents, as well as some graffiti and vandalism from commercial services providers using the park road would continue to occur.

Alternative B would freeze the number of guided groups to 2009 levels; prohibit commercial services activities on three to five days a year; limit sunrise commercial services to road-based tours, prohibit road-based tours from using motor coaches; reduce the number of parking spaces for road-based tours(from 13 under alternative A to 8 under alternative B); reduce the number of commercial service providers that can offer road-based hiking and horseback tours; reduce the number of hiking and astronomy trips per day for each provider; and require that all commercial guides participate in training and become certified to operate in the park.

Under alternative B, guided tour groups would likely continue to adversely impact the cultural landscape at the summit, but at a reduced level compared to alternative A. Some disturbance of the cultural landscape due to guided groups walking in the area would continue. Fewer guided groups, smaller group sizes, the prohibition of commercial tours three to five days per year, and better trained/certified guides would result in fewer impacts, compared to alternative A. Alternative B would result in fewer long-term, minor, adverse impacts on cultural landscapes.

Cumulative Impacts. As discussed under alternative A cumulative impacts on cultural landscapes from all past, present, and

reasonably foreseeable actions would be short term, minor to moderate, and adverse.

Conclusion. As described above, implementation of alternative B would result in long-term, minor to moderate, adverse effects to cultural landscapes.

The impacts of alternative B, in combination with the impacts of other past, present, and reasonably foreseeable future actions would result in short- and long-term, minor to moderate, adverse impacts compared to alternative A.

Section 106 Summary. After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative B would result in a determination of no adverse effect to cultural landscapes.

Alternative C

Analysis. Alternative C would have the same type of effects on the cultural landscape at the summit as alternative A; however, the intensity and frequency of the impact would decrease significantly. Some wear and tear impacts, occasional vehicle accidents, as well as some graffiti and vandalism from commercial services providers using the park road would continue to occur.

Alternative C would limit sunrise tours to road-based tours; reduce the number of parking spaces (from 13 in alternative A to 6 in alternative C) for road-based tours at the summit; ban parking at Red Hill; reduce the number of commercial service providers that offer road-based hiking and horseback tours; limit the number of trips per day each provider could offer; and require commercial guides to participate in training and be certified to operate in the park.

Guided tour groups would likely continue to adversely impact the cultural landscape at the summit, but at a reduced frequency and intensity compared to alternative A. Some disturbance of the cultural landscape due to guided groups walking in the area would continue. However, with fewer guided groups, smaller group sizes and increased training and certification of guides there would be fewer impacts to cultural landscapes. Thus, alternative C would result in localized, long-term, negligible to minor, adverse impacts on the cultural landscape at the summit compared to alternative A.

Overall implementation of Alternative C would result in a localized, long-term, negligible to minor, adverse impacts on cultural landscapes.

Cumulative Impacts. As discussed under alternative A cumulative impacts on cultural landscapes from all past, present, and reasonably foreseeable actions would be short term, minor to moderate, and adverse.

Conclusion. Implementation of alternative C would result in long-term, negligible to minor, adverse impacts on cultural landscapes.

The impacts of alternative C combined with the impacts of other past, present, and reasonably foreseeable actions would result in short- and long-term, minor to moderate, adverse impacts on cultural landscapes compared to alternative A.

Section 106 Summary. After applying ACHP criteria of adverse effect (36 CFR part 800.5, assessment of adverse effects), the national park service concludes that implementation of alternative c would result in a determination of no adverse effect to cultural landscapes.

Alternative D

Analysis. Alternative D would have the same type of effects on the cultural landscape at the summit as alternative A, but the intensity and frequency of the impact would increase compared to alternative A. Some wear and tear impacts, occasional vehicle accidents, as well as some graffiti and vandalism from

commercial services providers using the park road would continue to occur.

Alternative D would increase the number of commercial use authorizations up to established caps, establish up to five concession contracts for road-based tours, increase the number of parking stalls for road-based tours to fifteen at the summit and two at Red Hill, and would authorize a new interpretive bicycle tour on the summit road. Alternative D would also allow each road-based tour operator to run an unlimited number of trips in Kīpahulu.

Under alternative D, guided tour groups would likely continue to adversely impact the cultural landscape at the summit, but at an increased frequency and intensity compared to alternative A. The establishment of up to five concession contracts, increased number of parking stalls, a new interpretive bicycle tour, and an increased number of commercial use authorizations up to established caps would result in localized, long-term, minor, adverse impacts on the cultural landscape at the summit compared to alternative A.

Overall, alternative D would result in long-term, minor to moderate, adverse impacts on the cultural landscapes compared to alternative A.

Cumulative Impacts. As discussed under alternative A cumulative impacts on cultural landscapes from all past, present, and reasonably foreseeable actions would be short term, minor to moderate, and adverse.

Conclusion. Overall, alternative D would result in long-term, minor to moderate, adverse impacts on the cultural landscapes compared to alternative A.

When the impacts of alternative D are combined with the impacts of other past, present, and foreseeable actions there would likely be long-term, minor to moderate, adverse impacts on cultural landscapes.

Section 106 Summary. After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative D would result in a determination of adverse effect to cultural landscapes.

HISTORIC STRUCTURES

Alternative A (no action)

Several of the park's 54 historic national register-eligible structures are being affected by visitor use. However, it is not usually known if guided or unguided visitors, or both groups, are affecting these historic resources or to what degree they are being affected; except for guided horse tours. Thirteen historic structures are located in areas used by commercial service providers. Some intentional vandalism and graffiti damage diminishes the integrity of these historic resources. Additional damage is attributable to regular wear and tear caused by use of the historic buildings and the historic park road. Commercial service activities are likely contributing to all of these impacts.

Analysis. The no-action alternative describes the NPS approach to management of commercial services at the summit prior to 2005, with the exception that bicycle tours would continue to be prohibited in the park. Under the no-action alternative, historic structures would continue to be adversely impacted by commercial services activities at the current level. Some visitors would damage historic structures by adding graffiti and vandalizing historic structures.

As in all of the alternatives, park managers would take necessary actions to resolve unanticipated problems as they arise. NPS managers would continue to strive to protect and preserve historic structures in the park.

Impacts to historic structures under alternative A would be long term, minor to moderate, adverse, and direct.

Cumulative Impacts. Past, present, and reasonably foreseeable future projects with the potential to affect historic structures include (1) NPS implementation of the Kīpahulu District comprehensive site plan, and design program; (2) rehabilitation and expansion of the Kīpahulu visitor center / ranger station; (3) rehabilitation of 3.77 miles of the park road between the park headquarters/visitor center and the Halemau'u trailhead; and (4) construction and operation of a new telescope within the Crater Historic District at the summit.

The Kīpahulu District comprehensive site plan currently being developed would focus on improving visitor experience, natural and cultural resource protection, and park operations. New development would occur in the existing development zone and adjacent disturbed areas, although some existing facilities may be improved. Implementation of the Kīpahulu District comprehensive site plan would have long-term, negligible adverse impacts on historic structures.

Rehabilitation and expansion of the Kīpahulu visitor center / ranger station, including new construction and trenching for utilities in previously undisturbed areas should have no impact on historic structures.

Rehabilitation of the main park road (considered a historic structure) will occur within the existing road prism and would not involve expansion of the road or disturbance of adjacent lands; therefore, it would have a minor, long-term, adverse impact on historic structures other than the road itself. Impacts to the historic park road resulting from the rehabilitation project would include small changes in the road's original width in select areas. During construction, segments of the road may experience temporary lane closures. Overall, the park road rehabilitation project would have short- and long-term, minor, adverse direct impacts on historic structures.

Construction of a new telescope at the summit will require full closure of the main park road to visitor traffic to accommodate extremely wide trucks. Large vehicles traveling the main park road have the potential to adversely impact features of the historic road.

Therefore, the effects on historic structures, within the park road corridor associated with the construction and operation of a new telescope at the summit would result in short- and long-term, negligible to minor, adverse, direct impacts (NSF 2009, 2011).

Overall past, present, and reasonably foreseeable actions should have short- and long-term, negligible to minor, adverse, and direct impacts on historic structures.

Conclusion. As described above, implementation of alternative A would result in a short- and long-term, moderate, adverse, and direct impact on historic structures.

When the impacts of alternative A are combined with the impacts of other past, present, and reasonably foreseeable actions, there would likely be short- and long-term, moderate, adverse, and direct impacts to historic structures.

Section 106 Summary. After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative A would result in a determination of no adverse effect to historic structures.

Alternative B (Preferred Alternative)

Analysis. Alternative B is intended to limit commercial services and reduce the number of commercial services visitors in the park. Alternative B would have the same type of effects on historic structures as alternative A

but the intensity and frequency of the impacts would decrease slightly. Alternative B would freeze the number of guided groups to 2009 levels, prohibit commercial services activities on three to five days a year; limit sunrise commercial services to road-based tours; prohibit road-based tours from using motor coaches; reduce the number of parking spaces for road-based tours (from 13 in alternative A to 8 in alternative B); reduce the number of commercial service providers that can offer road-based hiking and horseback tours; reduce the number of hiking, horseback, and astronomy trips per day for each provider; and require all commercial guides to participate in training and become certified to operate in the park.

Guided tour groups would continue to adversely impact historic structures, but at a reduced level compared to alternative A. Some disturbance of historic structures due to guided groups would continue. Fewer guided groups, smaller group sizes, the prohibition of commercial tours three to five days per year, and better trained/certified guides would result in fewer incidents of graffiti and vandalism on historic structure and fewer impacts, compared to alternative A. Continued use of the historic cabins, trails, and park road would continue to result in wear and tear and contribute to damage.

Alternative B would result in long-term, moderate, adverse, direct impacts on historic structures.

Cumulative Impacts. As described under alternative A, cumulative impacts from all past, present, and reasonably foreseeable actions should have short- and long-term, negligible to minor, adverse, and direct impacts on historic structures.

Conclusion. Implementation of alternative B would result in long-term, moderate, adverse impacts on historic structures.

When the impacts of alternative B are combined with the impacts of other, past, present, and reasonably foreseeable actions, there would likely be short- and long-term, moderate, adverse, and direct impacts to historic structures.

Section 106 Summary. After applying the Advisory Council on Historic Preservation's criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative B would result in a determination of no adverse effect to historic structures.

Alternative C

Analysis. Alternative C would have the same type of effects on historic structures as alternative A; however, the intensity and frequency of the impact would decrease significantly. Alternative C would limit sunrise tours to road-based tour; reduce the number of parking spaces (from 13 in alternative A to 6 in alternative C) for road-based tours at the summit; ban parking at Red Hill; reduce the number of commercial service providers that offer road-based hiking and horseback tours; limit the number of trips per day each provider could offer; and require commercial guides to participate in training and become certified to operate in the park. Individuals on guided tour groups would likely continue to add graffiti and occasionally vandalize historic structures. Historic structures would continue to be used by guided visitors and that use would continue to contribute to the impacts from wear and tear.

Overall implementation of alternative C would result in localized, long-term, negligible to minor, adverse, direct impacts on historic structures.

Cumulative Impacts. As described under alternative A, cumulative impacts from all past, present, and reasonably foreseeable actions should have short- and long-term, negligible to minor, adverse, and direct impacts on historic structures.

Conclusion. Implementation of alternative C would result in long-term, negligible to minor, adverse effects to historic structures.

When the impacts on historic structures of alternative C are combined with the impacts of other past, present, and reasonably foreseeable future actions, there would likely be short- and long-term, negligible to minor, adverse, direct impacts.

Section 106 Summary. After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative C would result in a determination of no adverse effect to historic structures.

Alternative D

Analysis. Alternative D would have the same type of effects on historic structures as alternative A, but the intensity and frequency of the impact would increase compared to alternative A. Alternative D would increase the number of commercial use authorizations to established caps, establish up to five concession contracts for road-based tours, increase the number of parking stalls for road-based tours to 15 at the summit and 2 at Red Hill, and would authorize a new interpretive bicycle tour on the summit road. Alternative D would also allow each road-based tour operator to run an unlimited number of trips in Kīpahulu. Individuals with guided tour groups would likely continue to add graffiti to historic structures and would likely occasionally vandalize historic structures. Historic structures would continue to be used by guided visitors and that use would continue to contribute to the impacts from wear and tear.

Overall, even with increased training and certification of guides, alternative D would result in long-term, minor to moderate, adverse, direct impacts on historic structures compared to alternative A.

Cumulative Impacts. As described under alternative A, cumulative impacts from all past, present, and reasonably foreseeable actions should have short- and long-term, negligible to minor, adverse, and direct impacts on historic structures.

Conclusion. Implementation alternative D would result in long-term, minor to moderate, adverse impacts on the cultural landscapes compared to alternative A.

When the impacts in alternative D are combined with the impacts of other past, present, and foreseeable actions there would likely be long-term, minor to moderate, adverse impacts on historic structures.

Section 106 Summary. After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative D would result in a determination of adverse effect to historic structures.

ETHNOGRAPHIC RESOURCES AND CULTURAL PRACTICES

Alternative A (no action)

Analysis. Many areas within Haleakalā National Park are culturally and spiritually important to Native Hawaiians and would be affected by management decisions under this plan. These areas (traditional cultural properties) have been used by Native Hawaiians for a wide range of traditional activities from pre-European contact (before 1779) to present day. Impacts to ethnographic resources and cultural practices include visitor noise and the presence of non-Hawaiians during traditional practices, which are both disruptive to the quiet and solitude required for most traditional practices.

The no-action alternative describes the NPS approach to management of commercial

services at the summit prior to 2005, with the exception that bicycle tours would continue to be prohibited in the park. Under the no-action alternative, ethnographic resources and cultural practices would continue to be adversely impacted by commercial services activities at the current level. Some guided visitors and guided horse groups would continue to leave established trails and trample native vegetation that is important for traditional Hawaiian gathering. Guided groups would also continue to contribute to local crowding, increased levels of noise, and inappropriate behavior, all of which interfere with traditional cultural practices and reduce the opportunity for silence and solace necessary for most ceremonial activities.

NPS managers would continue to strive to protect and preserve ethnographic resources and provide opportunities for traditional cultural practices in the park. As in all of the alternatives, park managers would take necessary actions to resolve unanticipated problems that arise. Impacts to ethnographic resources and cultural practices would therefore continue to be long term, minor to moderate, and adverse.

Cumulative Impacts. Past, present and reasonably foreseeable future projects with the potential to affect ethnographic resources and cultural practices include(1) NPS implementation of the Kīpahulu District comprehensive site plan and design program; (2) implementation of an air tour management plan for commercial air tours over the park;(3) rehabilitation and expansion of the Kīpahulu visitor center / ranger station; (4) rehabilitation of 3.77 miles of the park road between the park headquarters/visitor center and the Halemauʻu trailhead; and (5) construction and operation of a new telescope within the Crater Historic District at the summit.

The Kīpahulu District comprehensive site plan is currently being developed by the National Park Service with a focus on improving visitor experience, natural and cultural resource protection, and park operations. It is assumed that all new development would be in the existing development zone and adjacent disturbed areas; no new trails or other facilities would be built outside of these areas, although some existing facilities (e.g., trails) may be improved. Implementation of the Kīpahulu District comprehensive site plan would have negligible, long-term, adverse impacts on ethnographic resources or cultural practices.

An air tour management plan is also being drafted by the National Park Service and Federal Aviation Administration to minimize visual and sound impacts due to commercial air tours over the park. This planning effort is in the early stages and no preferred alternative has been identified to date. Currently, air tour overflights are limited to 26,325 flights annually as authorized under the interim operating authority. The current level of helicopter flights in the park is 12,796 annually. Continued overflights create noise and intrude on the natural sense of quiet and solitude required by many cultural practices. In general, limiting air tours to current levels would have short- and long-term, minor, adverse impacts on ethnographic resources and cultural practices.

With regard to the rehabilitation and expansion of the Kīpahulu visitor center / ranger station, new construction and trenching for utilities in previously undisturbed areas has the potential for short-term, negligible to minor, adverse impacts on ethnographic resources and cultural practices.

Rehabilitation of the park road, within the existing road prism, would not involve expansion of the road or disturbance of adjacent lands between the visitor center and Halemauʻu trailhead; therefore, it would have no impacts on ethnographic resources or cultural practices. Construction would require traffic restrictions during the construction period. Traffic delays resulting from lane restrictions would create traffic backups and inconvenience all visitors and Hawaiians who wish to conduct traditional

cultural practices. The impacts to ethnographic resources and cultural practices would be short term, minor, and adverse.

Construction and operation of a new telescope at the summit would have long-term, moderate, adverse, direct impacts to ethnographic resources and cultural practices within the park (NSF 2009).

Overall impacts from all past, present, and reasonably foreseeable actions would be short-and long-term, moderate and adverse

Conclusion. Under alternative A, impacts to ethnographic resources and cultural practices would continue to be long term, major, and adverse.

When the impacts of alternative A are combined with the impacts of other past, present and reasonably foreseeable future actions, the resulting impacts would likely be short and long term, minor to moderate, and adverse.

Section 106 Summary. After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative A would result in a determination of adverse effect on ethnographic resources.

Alternative B (Preferred Alternative)

Analysis. Alternative B would have the same type of effects on ethnographic resources at the summit as alternative A, but the intensity and frequency of the impact would decrease slightly. Alternative B would offer up to four concession contracts for road-based tours; freeze the number of guided groups to 2009 levels; limit sunrise commercial services to road-based tours; prohibit road-based tours from using motor coaches; reduce the number of parking spaces for road-based tours (from 13 in alternative A to 8 in alternative B); reduce the number of commercial service providers that can offer road-based hiking and horseback tours; reduce the number of hiking, horseback riding, and astronomy trips per day for each provider; and increase training of guides.

Alternative B would also prohibit commercial service activities on three to five days per year to provide some time with smaller crowds and less noise.

Guided tour groups would continue to impact ethnographic resources and cultural practices at the summit and other areas in the park, but at a reduced level compared to alternative A. Some disturbance of ethnographic resources and cultural practices due to guided groups walking in the area would continue. With fewer guided groups causing fewer impacts compared to alternative A, alternative B would result in long-term, minor, adverse, impacts to ethnographic resources and cultural practices.

Cumulative Impacts. As described under alternative A, cumulative impacts from all past, present, and reasonably foreseeable actions would be short- and long-term, major and adverse.

Conclusion. Under alternative B, impacts to ethnographic resources and cultural practices would be long-term, minor, adverse impacts on ethnographic resources and cultural practices.

Overall, impacts on ethnographic resources and cultural practices resulting from alternative B in conjunction with other past, present, and reasonably foreseeable future actions would be short and long-term, major, and adverse.

Section 106 Summary. After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative B would result in a determination of no adverse effect on ethnographic resources and cultural practices.

Alternative C

Analysis. Alternative C would have the same type of effects on ethnographic resources and cultural practices at the summit as alternative A, but the intensity and frequency of the impact would decrease significantly. Alternative C would offer up to three concession contracts for road-based tours; freeze the number of guided groups to 2009 levels; limit sunrise commercial services to road-based tours; prohibit road-based tours from using motor coaches; reduce the number of parking spaces for road-based tours (from 13 in alternative A to 6 in alternative C); reduce the number of commercial service providers that can offer road-based hiking and horseback tours; reduce the number of hiking, horseback riding, and astronomy trips per day for each provider; and increase training and certification of guides.

Guided tour groups would continue to impact ethnographic resources and cultural practices at the summit, but at a reduced level compared to alternative A. Some disturbance of ethnographic resources and cultural practices due to guided groups walking in the area would continue. With fewer guided groups causing fewer impacts compared to alternative A, alternative C would result in long-term, minor, adverse, impacts to ethnographic resources and cultural practices.

Cumulative Impacts. As described under alternative A, cumulative impacts from all past, present, and reasonably foreseeable actions would be short- and long-term, major and adverse.

Conclusion. Under alternative C impacts to ethnographic resources and cultural practices would be long-term, minor, adverse impacts on ethnographic resources and cultural practices.

Overall, the impacts on ethnographic resources and cultural practices of alternative C in conjunction with other past, present, and reasonably foreseeable future actions, would result in short and long term, major, adverse impacts.

Section 106 Summary. After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative C would result in a determination of no adverse effect on ethnographic resources and cultural practices.

Alternative D

Analysis. Alternative D would have the same type of effects on ethnographic resources at the summit as alternative A; however, the intensity and frequency of the impacts would increase. Alternative D would offer up to five concession contracts for road-based tours; increase the number of parking spaces for road-based tours (from 13 in alternative A to 15 spaces at the Haleakalā Visitor Center and 2 spaces at Red Hill); increase the number of commercial use authorizations up to established caps; cap the number of horse tours on the Sliding Sands Trail to 2009 levels; and implement a new bike tour. There would be no further time constraints on commercial use under alternative D. Disturbance of ethnographic resources due to guided groups walking in the area would increase.

With more guided groups causing more impacts, compared to alternative A, alternative D would result in long-term, minor to moderate, adverse impacts on ethnographic resources and cultural practices.

Cumulative Impacts. As described under alternative A, cumulative impacts from all past, present, and reasonably foreseeable actions would be short and long term, major, and adverse.

Conclusion. Under alternative D, impacts to ethnographic resources and cultural practices would be long-term, moderate,

adverse, impact on ethnographic resources and cultural practices compared to alternative A.

Overall, impacts of alternative D on ethnographic resources, in conjunction with the impacts from other past, present, and reasonably foreseeable future actions would be short- and long-term, major, and adverse.

Section 106 Summary. After applying ACHP criteria of adverse effect (36 CFR Part 800.5, Assessment of Adverse Effects), the National Park Service concludes that implementation of alternative D would result in a determination of adverse effects to ethnographic resources.

IMPACTS TO VISITOR EXPERIENCE

ALTERNATIVE A (NO ACTION ALTERNATIVE)

Analysis

Number and Diversity of Commercial Activities. Under alternative A, there would be no changes in the current number and diversity of commercial activities provided. Road-based tours, horseback riding, guided hiking, and astronomy tours would continue with an unlimited number of providers, and bicycle tours would not be allowed inside of the park. As described in chapter 1, the bicycle safety stand down has been in effect for over three years. Therefore, visitors seeking commercially led bicycle tours within the park boundaries would continue to be adversely affected by the loss of what was once a popular activity in the park.

There would be no limits on the number of commercial use authorizations or use levels for all permitted commercial groups, with parking capacity being a constraint. Under this alternative, motor coaches would continue to be prohibited from driving to the summit at sunrise, which would have beneficial effects on crowding and congestions on the roads and in parking areas during busy times. However, crowding would continue to occur at the summit and Kīpahulu areas. Congestion on the roadways and in the parking lots near the summit would be especially apparent to those visiting the park for the sunrise experience. Impacts to visitors would vary depending on the time and season of the visit. Because the number of tours could keep increasing under this alternative, further crowding would occur and continue to cause long-term, moderate, adverse impacts to the visitor experience.

Access and Quality of Experience. Under alternative A, access and the quality of the visitor experience would remain the same with commercial access being provided seven days a week. Additionally, all tour operators with commercial use authorizations would be permitted access to the summit at sunrise. Because some visitors to Haleakalā have limited time to spend in the area, unlimited access seven days a week would ensure that most visitors are able to participate in commercially guided tours and would have a beneficial impact for visitors on tight schedules. However, crowding and congestion would continue to affect the quality of some visitor experiences in the Kīpahulu area and at the summit, especially during the sunrise. Unlimited access to commercial tours would allow few opportunities for Native Hawaiians to practice cultural activities at the summit. Because some Native Hawaiians wish to practice cultural activities without the presence of outside visitors, continued commercial access seven days a week would have adverse impacts on Native Hawaiians. Unlimited access would also affect noncommercial visitors who would like to experience the park with less crowding. Overall, unlimited access would continue to cause long-term, moderate, adverse impacts for most visitors.

Opportunities for Solitude and Quiet. For the purpose of the visitor use and experience impact analysis only, *solitude* refers to perceived experiences of solitude. This is different than *solitude* as defined under the Some visitors may perceive a sense of solitude even when they are surrounded by other visitors. For example, visitors to the summit may experience freedom from modern reminders of society as they watch the sunrise. They may even have a sense of isolation while enjoying the view from this busy frontcountry area. However, as crowding, noise, and other distractions increase, perceived solitude may decrease. For the visitor use impact analysis only,

soundscapes refer to the human perception of the acoustical environment. Similarly, quiet has been defined as the absence of human caused noise. By stating that an area is quiet does not necessarily mean that there is no sound. It means there is no human caused noise interfering with appropriate natural, cultural, or historical sounds, or the type of visitor experiences desired for particular areas of the park. It is important to note these distinctions to prevent confusion with similar definitions in the soundscape sections of this document.

Under alternative A, opportunities for solitude and quiet in frontcountry areas where commercial tours operate would continue to be limited, especially at the summit area during sunrise. Quiet natural and cultural soundscapes and opportunities for solitude at the summit would continue to be adversely impacted due to the unlimited number of commercial visitors, and unlimited access for commercial tours seven days a week. It should be noted that "the natural ambient sound level—that is, the environment of sound that exists in the absence of human-caused noise—is the baseline condition, and the standard against which current conditions in a soundscape [acoustic resource] will be measured and evaluated" (NPS 2006b). However, the desired acoustic condition may also depend upon the resources and the values of the park, the land use, and the kinds of activities and developments that are appropriate for the purposes of the park. For instance, culturally appropriate sounds are an important element of the Haleakalā National Park experience, especially for Native Hawaiians practicing cultural activities within the park. Because opportunities for solitude would be minimal and the natural ambient sound levels would continue to be affected by unlimited commercial use; this alternative would cause long-term, moderate, adverse impacts on the visitor experience in relation to opportunities for solitude and quiet.

Interpretation and Education. Under alternative A, the overall quality of interpretation and education provided by commercially guided tours would continue to be basic with some inconsistent interpretive and educational messages provided, no formal training of guides, and no interpretive booklets required. Without consistent educational messages, training, or interpretive materials; many visitors would continue to be unaware of that they are traveling in national park, would not have consistent messaging on interesting and intriguing information related to resources and cultural practices, and may be uninformed on important safety messages. Therefore, this alternative would have long-term, moderate adverse impacts to commercial visitor experiences in relation to interpretive and educational opportunities.

Alternative A would result in long-term, moderate, adverse impacts to the overall visitor experience due to unlimited commercial tours and use levels all year long, limited opportunities to experience solitude and quiet, and no requirements for interpretive and educational materials.

Cumulative Impacts

Several past, present, or reasonably foreseeable actions may affect the visitor experience at Haleakalā National Park. Past actions such as the development of the NPS commercial use authorization system have allowed visitors from around the country and the world to experience Haleakalā National Park on guided tours. This has had a beneficial effect on visitors by allowing them to experience the park in ways that may not otherwise be accessible via private trip. In addition to companies operating under commercial services use authorizations, seven helicopters and three fixed wing operators presently have interim operating authority to fly over the park, thereby providing visitors with the opportunity to view the park from the air. This has beneficially affected a small percentage of visitors using this service, but has adversely affected many visitors experiencing the park during the flyovers.

Examples of adverse impacts can include noise and detractions to the visual scenery and sense of solitude during flyovers. There are currently 12,796 helicopter flights per year, but 26,325 flights are authorized under the interim operating authority. Although the number of air tours flying over or adjacent to the park could increase to the IOA level, in recent years the number of tours has been declining. Thus, for purposes of analysis it is assumed the number of air tours flying over or adjacent to the park stays at current levels. According to the VPI study (2007b), helicopters are rated as slightly unacceptable by visitors. Therefore, adverse effects on visitors in the park would continue in localized zones where air tours occur. For example, helicopter noise would likely cause a moderate to major, adverse impact on visitors near the crater, and a moderate adverse impact in the Kīpahulu area.

In addition to air tours, other foreseeable future actions include the construction and operations of a new solar telescope outside of the park at the summit, road rehabilitation between the park headquarters/visitor center and the Halemauʻu trailhead, rehabilitation and expansion of the Kīpahulu visitor center / ranger station, and implementation of the Kīpahulu District comprehensive site plan and design program. While some of the proposed future actions may have short-term, adverse impacts during implementation (construction) stages, the purpose of the aforementioned NPS projects is to improve the quality of visitor experiences, natural and cultural resource protection, and park operations. The road rehabilitation would cause short term, moderate, adverse effects to traffic flow during construction. However, the completed improvements to the road between the park headquarters visitor center and the Halemauʻu trailhead would provide long-term, beneficial effects on traffic flow, viewsheds, and road safety. The Kīpahulu District comprehensive site plan would have a long-term, beneficial effect on the visitor experience with improved overflow parking and campgrounds, an emergency landing zone, bridge improvements over the pools for better flow of visitors, and trail improvements for better accessibility, way finding, and circulation of visitors.

There would be beneficial impacts from past and future projects to improve visitor experience / facilities, and minor to major, adverse impacts from air tours. Overall, there would be long-term, beneficial cumulative effects to visitor experience when the effects of alternative A are added to other foreseeable actions (e.g., improved visitor facilities, roads, and trails) and moderate to major adverse cumulative impacts when the effects of alternative A are added to the effects resulting from air tour overflights.

Conclusion

Alternative A would result in long-term, moderate, adverse impacts to the overall visitor experience due to unlimited commercial tours and use levels all year long, limited opportunities to experience solitude and quiet, and the lack of a requirement for interpretive and educational materials.

Overall, there would be long-term, beneficial cumulative effects to visitor experience when the effects of alternative A are added to other foreseeable actions (e.g., improved visitor facilities, roads, and trails) and moderate to major, adverse cumulative impacts when the effects of alternative A are added to the effects resulting from air tour overflights. The impact of alternative A would contribute a relatively small increment to the overall cumulative impact.

ALTERNATIVE B

Analysis

Number and Diversity of Commercial Activities. Under alternative B, there would be no changes in the current type of

commercial activities offered, but commercial services would not have access to the park on three to five days per year. The number of CUA / concession trips per day would be limited all year. Road-based tours, horseback riding, guided hiking, and astronomy tours would continue with a limited number of providers; and bicycle tours would not be allowed inside of the park. As described in chapter 1, the bicycle safety stand down has been in effect for over three years. Visitors seeking commercially led bicycle tours within the park boundaries would continue to be adversely affected by the loss of what was once a popular activity in the park. Under this alternative, there would be some limitations on group size and on the number of CUAs / concessions issued to all four commercial user groups. Additionally, parking capacity for road based commercial groups would be slightly reduced at the summit area. The reduction in commercial parking spaces would reduce the number of commercial groups in the park, and provide additional parking for other park visitors. Therefore, crowding due to commercial tours would be reduced at the summit and Kīpahulu areas. Under this alternative, motor coaches would not be permitted in the park, which would have beneficial effects on crowding and congestions on the roads and in parking areas, but would cause adverse effects by reducing the capacity for visitors to enter the park via commercial tours. Congestion on the roadways and in the parking lots near the summit would be slightly reduced for those visiting the park for the sunrise experience. Adverse impacts to visitors would continue to vary depending on the time and season of the visit. Because the number of tours could not keep increasing under this alternative, further crowding would not be expected to occur. Compared to alternative A, this alternative would have long-term, beneficial impacts to the visitor experience.

Access and Quality of Experience. Under alternative B, commercial tours would not have access to the park three to five days per year. This alternative would have a small beneficial impact on those visitors that indicated their personal park experiences were diminished by commercial services. Limiting commercial access on three to five days per year would prevent a few visitors from participating in commercially guided tours and would have an adverse impact for a very small percentage of visitors. However, reduced crowding and congestion on those days would improve the quality of other visitor experience in the Kīpahulu area and at the summit, especially during the sunrise. Limiting access to commercial tours on certain days would allow more opportunities for Native Hawaiians to practice cultural activities at the summit. Because some Native Hawaiians wish to practice cultural activities without the presence of outside visitors, limiting commercial access three to five days per year would have beneficial impacts on Native Hawaiians. Limited access on these days would have minor beneficial effects on noncommercial visitors who would like to experience the park with less crowding. Additionally, only road-based tours would be permitted at the summit during sunrise, having a beneficial effect on visitors at the summit during these hours. Finally, no horse tour groups would be permitted at the backcountry campsites for overnight stays. Overall, limiting access would cause long-term, beneficial impacts on most visitor experience.

Opportunities for Solitude and Quiet. For the purpose of the visitor use and experience impact analysis only, *solitude* refers to perceived experiences of solitude. Some visitors may perceive a sense of solitude even when they are surrounded by other visitors. For example, visitors to the summit may experience freedom from modern reminders of society as they watch the sunrise. They may even have a sense of isolation while enjoying the view from this busy frontcountry area. However, as crowding, noise, and other distractions increase, perceived solitude may decrease. For the visitor use impact analysis only, soundscapes refer to the human perception of the acoustical environment. Similarly, quiet has been defined as the absence of human caused noise. By stating that an area is quiet

does not necessarily mean that there is no sound. It means there is no human caused noise interfering with appropriate natural, cultural, or historical sounds, or with the type of visitor experiences desired for particular areas of the park. It is important to note these distinctions to prevent confusion with similar definitions in the soundscape sections of this document.

Under alternative B, opportunities for solitude and quiet in frontcountry areas where commercial tours operate would be intermittently improved, especially at the summit area on the three to five days when commercial tours would not have access to the park. Quiet natural and cultural soundscapes and opportunities for solitude at the summit would be more apparent due to the limited number of commercial visitors, limited access for CUA/concession operators at sunrise, and the ban on commercial access three to five days per year. It should be noted that "the natural ambient sound level—that is, the environment of sound that exists in the absence of human-caused noise—is the baseline condition, and the standard against which current conditions in a soundscape [acoustic resource] will be measured and evaluated" (NPS 2006b). However, the desired acoustic condition may also depend upon the resources and the values of the park, the land use, and the kinds of activities and developments that are appropriate for the purposes of the park. For instance, culturally appropriate sounds are an important element of the Haleakalā National Park experience, especially for Native Hawaiians practicing cultural activities within the park. Under this alternative, opportunities for solitude would be slightly improved and natural ambient sound levels would be less impacted by human caused noise on noncommercial days. Therefore, this alternative would cause a long-term, beneficial impact on the visitor experience in terms of opportunities for solitude and quiet.

Interpretation and Education. Under alternative B, the overall quality of interpretation and education provided by commercially guided tours would be improved by requiring formal training of guides and the use of interpretive and educational booklets on tours. With consistent educational messages, training, and interpretive materials provided; many visitors would become aware that they are traveling in a national park and would also have improved opportunities to learn about park features, resources, cultural practices, and important safety messages. Therefore, compared to alternative A, this alternative would have a long-term, beneficial impact on commercial visitor experiences in relation to interpretive and educational opportunities.

Alternative B would result in long-term, beneficial impacts to the overall visitor experience due to some limits on commercial use authorization / concessions and use levels, some limits on access by commercial tours during the year, intermittent improvements in opportunities to experience solitude and quiet, and requirements for interpretive and educational materials.

Cumulative Impacts

Several past, present, or reasonably foreseeable actions may affect the visitor experience at Haleakalā National Park. Past actions such as the development of the NPS commercial services program have allowed visitors from around the country and the world to experience Haleakalā National Park on guided tours. This has had a beneficial effect on visitors by allowing them to experience the park in ways that may not otherwise be accessible via private trip. In addition to companies operating under commercial use authorizations and concession contracts in the park in alternative B, seven helicopters and three fixed-wing operators presently have interim operating authority to fly over the park, thereby providing visitors with the opportunity to view the park from the air. This has beneficially affected a small percentage of visitors using this service, but

has adversely affected many visitors experiencing the park during the flyovers. Examples of adverse impacts can include noise and detractions to the visual scenery and sense of solitude during flyovers. There are currently 12,796 helicopter flights per year, but 26,325 flights are authorized under the interim operating authority. Although the number of air tours flying over or adjacent to the park could increase to the IOA level, in recent years the number of tours has been declining. Thus, for purposes of analysis it is assumed the number of air tours flying over or adjacent to the park stays at current levels. According to the VPI study (VPI 2007b), helicopters are rated as slightly unacceptable by visitors. More than a fourth of visitors noticed helicopter noise on the Waimoku Falls Trail (VPI 2007b). Therefore, adverse effects on visitors in the park would continue in localized zones where air tours occur. For example, helicopter noise would likely cause a moderate to major adverse impact on visitors near the crater, and a moderate adverse impact in the Kīpahulu area.

In addition to air tours, other foreseeable future actions include the construction and operations of a new solar telescope outside of the park at the summit, road rehabilitation between the park headquarters/visitor center and the Halemau'u trailhead, rehabilitation and expansion of the Kīpahulu visitor center/ranger station, and implementation of the Kīpahulu District comprehensive site plan, and design program. While some of the proposed future actions may have short-term adverse impacts during implementation (construction) stages, the purpose of the aforementioned NPS projects is to improve the quality of visitor experiences, natural and cultural resource protection, and park operations. The road rehabilitation would cause short-term, moderate, adverse effects to traffic flow during construction. However, the completed improvements to the road between the park headquarters/visitor center and the Halemau'u trailhead would provide long-term, moderate, beneficial effects on traffic flow, view sheds, and road safety. The Kīpahulu District comprehensive site plan would have a long-term, beneficial effect on the visitor experience with improved overflow parking and campgrounds, an emergency landing zone, bridge improvements over the pools for better flow of visitors, and trail improvements for better accessibility, way finding, and circulation of visitors.

Overall, there would be beneficial impacts from past and future projects to improve visitor experiences/facilities, and moderate to major adverse impacts from air tours. There would be long-term, beneficial cumulative effects to visitor experience when the effects of alternative B are added to other foreseeable actions (e.g., improved visitor facilities, roads, and trails) and moderate adverse cumulative impacts when the effects of alternative B are added to the effects resulting from air tour overflights.

Conclusion

Alternative B would result in long-term, beneficial impacts to the overall visitor experience due to some limits on CUA / concessions and use levels, some limits on access by commercial tours during the year, intermittent improvements in opportunities to experience solitude and quiet, and requirements for interpretive and educational materials.

Overall, there would be long-term, beneficial cumulative effects to visitor experience when the effects of alternative B are added to other foreseeable actions (e.g., improved visitor facilities, roads, and trails) and long-term, moderate, adverse cumulative impacts when the effects of alternative B are added to the effects resulting from air tour overflights. The beneficial impact of alternative B would contribute a considerable increment to the overall cumulative impact.

ALTERNATIVE C

Analysis

Number and Diversity of Commercial Activities. Under alternative C, no changes in the type of commercial activities would occur, but levels of commercial use would be reduced. Alternative C would require the most restrictive limits on the number of commercial providers and trips, on parking spaces, and on group size. These reductions would have a beneficial effect by reducing crowding and congestion, but an adverse effect on visitors that are unable to book a tour due to use reductions. Road-based tours, horseback riding, guided hiking, and astronomy tours would continue; and bicycle tours would not be allowed inside the park. As described in chapter 1, the bicycle safety stand down has been in effect for over three years. Visitors seeking commercially led bicycle tours within the park boundaries would continue to be adversely affected by the loss of what was once a popular activity in the park. A strict reduction in commercial parking spaces at the Haleakalā Visitor Center and elimination of road-based tour parking at Red Hill would also reduce the number of commercial groups in the area, thereby creating more parking for general visitors. Under this alternative, motor coaches would continue to be prohibited from driving to the summit at sunrise, which would have beneficial effects on crowding and congestions on the roads and in parking areas during busy times. Overall, crowding would be reduced at the summit and Kīpahulu areas. Reduced congestion on the roadways and in the parking lots near the summit would be especially apparent to those visiting the park for the sunrise experience. Adverse impacts to visitors would vary depending on location, time, and season of the visit. Because the number and size of tours would be reduced under this alternative, perceptions of crowding would likely be improved, thereby causing long-term, beneficial impacts to the visitor experience.

Access and Quality of Experience. Under alternative C, access to all areas of the park via commercial services would be provided to a limited number of commercial visitors. Strict limitations on tours and group size may prevent some visitors from accessing the park, causing an adverse effect on those visitors. However, a reduction in crowding and congestion would have a beneficial effect on the quality of the visitor experience in the Kīpahulu area and at the summit, especially during the sunrise. Because some Native Hawaiians wish to practice cultural activities without the presence of outside visitors, continued commercial access all year long and seven days a week would have adverse impacts on this group, and on general visitors. Only road-based tours would be permitted at the summit during sunrise, having a beneficial effect on crowding and many visitor experience. No guided hiking tours would be permitted on the summit during sunrise and this user group would be adversely affected by this limitation. Overall, this alternative would have a long-term, beneficial impact on visitors that enjoy reduced crowding and a long-term, minor to moderate, adverse impacts on the visitors that may be prevented from accessing the park via commercial tours.

Opportunities for Solitude and Quiet. For the purpose of the visitor use and experience impact analysis only, *solitude* refers to perceived experiences of solitude. Some visitors may perceive a sense of solitude even when they are surrounded by other visitors. For example, visitors to the summit may experience freedom from modern reminders of society as they watch the sunrise. They may even have a sense of isolation while enjoying the view from this busy frontcountry area. However, as crowding, noise, and other distractions increase, perceived solitude may decrease. For the visitor use impact analysis only, soundscapes refer to the human perception of the acoustical environment. Similarly, quiet has been defined as the absence of human caused noise. By stating that an area is quiet does not necessarily mean that there is no

sound. It means there is no human caused noise interfering with appropriate natural, cultural, or historical sounds, or the type of visitor experiences desired for particular areas of the park. It is important to note these distinctions to prevent confusion with similar definitions in the "Natural Resources" sections of this document.

Under alternative C, opportunities for solitude and quiet in frontcountry areas where commercial tours operate would be improved, especially at the summit area where a strict reduction in commercial parking and in the number and size of commercial tours would occur. Quiet natural and cultural soundscapes and opportunities for solitude at the summit would be more apparent and accessible due to the limited number of commercial visitors. It should be noted that "the natural ambient sound level—that is, the environment of sound that exists in the absence of human-caused noise—is the baseline condition, and the standard against which current conditions in a soundscape [acoustic resource] will be measured and evaluated" (NPS 2006b). However, the desired acoustic condition may also depend upon the resources and the values of the park, the land use, and the kinds of activities and developments that are appropriate for the purposes of the park. For instance, culturally appropriate sounds are an important element of the Haleakalā National Park experience, especially for Native Hawaiians practicing cultural activities within the park. Overall, this alternative would cause a long-term, beneficial impact on the visitor experience in relation to opportunities for solitude and quiet.

Interpretation and Education. Under alternative C, the overall quality of interpretation and education provided by commercially guided tours would be improved by requiring formal training of guides and the use of interpretive and educational booklets on tours. With consistent educational messages, training, and interpretive materials provided, many visitors would become aware that they are traveling in a national park and would also have improved opportunities to learn about park features, resources, cultural practices, and important safety messages. Therefore, compared to alternative A this alternative would have a long-term, beneficial impact on the visitor experience in relation to interpretive and educational opportunities.

Alternative C would generally result in long-term, beneficial impacts to the overall visitor experience due to strict limits on commercial use authorizations/ concessions and use levels (which help reduce crowding and congestion), improved opportunities to experience solitude and quiet, and requirements for interpretive and educational materials.

Cumulative Impacts

Several past, present, or reasonably foreseeable actions may affect the visitor experience at Haleakalā National Park. Past actions such as the development of the NPS commercial services program have allowed visitors from around the country and the world to experience Haleakalā National Park on guided tours. This has had a beneficial effect on visitors by allowing them to experience the park in ways that may not otherwise be accessible via private trip. In addition to companies operating under commercial use authorizations and concession contracts in the park in alternative C, seven helicopters and three fixed wing operators presently have interim operating authority to fly over the park, thereby providing visitors with the opportunity to view the park from the air. This has beneficially affected a small percentage of visitors using this service, but has adversely affected many visitors experiencing the park during the flyovers. Examples of adverse impacts can include noise and detractions to the visual scenery and sense of solitude during flyovers. There are currently 12,796 helicopter flights per year, but 26,325 flights are authorized under the interim operating authority. Although the number of air tours flying over or

adjacent to the park could increase to the IOA level, in recent years the number of tours has been declining. Thus, for purposes of this analysis it is assumed the number of air tours flying over or adjacent to the park stays at current levels. According to the VPI study (2007b), helicopters are rated as slightly unacceptable by visitors. More than a fourth of visitors surveyed noticed helicopter noise on the Waimoku Falls Trail (VPI 2007b). Therefore, adverse effects on visitors in the park would continue in localized zones where air tours occur. For example, helicopter noise would likely cause a moderate to major adverse impact on visitors near the crater, and a moderate adverse impact in the Kīpahulu area.

In addition to air tours, other foreseeable future actions include the construction and operations of a new solar telescope outside of the park at the summit, road rehabilitation between park headquarters/visitor center and the Halemau'u trailhead, rehabilitation and expansion of the Kīpahulu visitor center / ranger station, and implementation of the Kīpahulu District comprehensive site plan and design program. While some of the proposed future actions may have short-term, adverse impacts during implementation (construction) stages, the purpose of the aforementioned NPS projects is to improve the quality of visitor experiences, natural and cultural resource protection, and park operations. The road rehabilitation would cause short term, moderate, adverse effects to traffic flow during construction. However, the completed improvements to the road between the park headquarters/ visitor center and the Halemau'u trailhead would provide long-term, beneficial effects on traffic flow, view sheds, and road safety. The Kīpahulu District comprehensive site plan would have a long-term, beneficial effect on the visitor experience with improved overflow parking and campgrounds, an emergency landing zone, bridge improvements over the pools for better flow of visitors, and trail improvements for better accessibility, way finding, and circulation of visitors.

Overall, there would be beneficial impacts from past and future projects to improve visitor experience / facilities, and moderate to major, adverse impacts from air tours. Adding these impacts to the mostly beneficial impacts described under alternative C, would result in overall long-term, beneficial, cumulative impacts in localized areas of the park where commercial services are provided.

Conclusion

Alternative C would generally result in long-term, beneficial impacts to the overall visitor experience due to strict limits on commercial use authorizations/ concessions and use levels (which help reduce crowding and congestion), improved opportunities to experience solitude and quiet, and requirements for interpretive and educational materials. However, compared to alternative A, the limits on tours and group size would result in a long-term, minor to moderate, adverse effect on some visitor experience.

Overall, there would be long-term, beneficial cumulative effects to visitor experience when the effects of alternative C are added to other foreseeable actions (e.g., improved visitor facilities, roads, and trails) and long-term, moderate, adverse cumulative impacts when the effects of alternative C are added to the effects resulting from air tour overflights. The beneficial impact of Alternative C would contribute a considerable increment to the overall cumulative impact.

ALTERNATIVE D

Analysis

Number and Diversity of Commercial Activities. Under alternative D, increased

levels and diversity of commercial activities would be provided. Road-based tours, horseback riding, guided hiking, and astronomy tours would continue; and two commercial use authorizations would be issued for interpretive bicycle tours. As described in chapter 1, the bicycle safety stand down has been in effect for over three years. This alternative would have a beneficial effect on those visitors seeking opportunities to participate in commercially led bicycle tours inside park boundaries. This alternative would provide few restrictions on the number of commercial use authorizations/ concessions, thereby having a beneficial effect on visitors who indicated that commercial services should be increased. However, crowding would continue to occur at the summit and Kīpahulu areas. Congestion on the roadways and in the parking lots near the summit would adversely affect visitors who came to watch the sunrise. Adverse impacts to visitors would vary depending on the time and season of the visit, and parking capacity would remain as a constraint. Like alternative A, motor coaches would be permitted in the park (except at sunrise) and would have an adverse effect on crowding and congestions on the roads and in parking areas, but would cause beneficial affects by increasing the capacity for visitors to enter the park via commercial services. Compared to alternative A, this alternative would place a limit on the number of commercial tours (commercial use authorizations and concession contracts), and thus would have a long-term, beneficial impact on the visitor experience, reducing crowding (although crowding would still be expected to occur and have an adverse impact on some visitors).

Access and Quality of Experience. Under alternative D, access to all areas of the park via commercial tours would be provided all year long. This alternative requires few limitations on tours and group size to ensure that most visitors could access the park via commercial tours, thereby causing a beneficial impact on those visitors. Under alternative D, there would still be less crowding and congestion to the Kīpahulu area and the summit than under alternative A. Therefore, there would be a long-term, minor, beneficial effect on the quality of the visitor experience, especially at sunrise. Only road based tours would be allowed at the summit during sunrise, which would reduce some crowding and congestion. Commercial hiking groups would be allowed access to the summit during sunrise, which would contribute to crowding and congestion during this popular time to visit. Hiking tours would begin after watching the sunrise. In addition, allowing access by commercial tours all year long would provide few opportunities for Native Hawaiians to practice cultural activities at the summit. Because some Native Hawaiians wish to practice cultural activities without the presence of outside visitors, continued commercial use all year long and seven days a week would cause adverse impacts to this group, and other noncommercial visitors.

Opportunities for Solitude and Quiet. For the purpose of the visitor use and experience impact analysis only, *solitude* refers to perceived experiences of solitude. Some visitors may perceive a sense of solitude even when they are surrounded by other visitors. For example, visitors to the summit may experience freedom from modern reminders of society as they watch the sunrise. They may even have a sense of isolation while enjoying the view from this busy frontcountry area. However, as crowding, noise, and other distractions increase, perceived solitude may decrease. For the visitor use impact analysis only, soundscapes refer to the human perception of the acoustical environment. Similarly, quiet has been defined as the absence of human caused noise. By stating that an area is quiet does not necessarily mean that there is no sound. It means there is no human caused noise interfering with appropriate natural, cultural, or historical sounds, or the type of visitor experiences desired for particular areas of the park. It is important to note these distinctions to prevent confusion with

similar definitions in the Natural Resource sections of this document.

Under alternative D, there would be few opportunities for solitude and quiet in frontcountry areas where commercial tours operate, especially at the summit area where high levels and ranges of commercial visitor opportunities would occur. However, there would be more opportunities to experience solitude and quiet under alternative D than in alternative A.. It should be noted that "the natural ambient sound level—that is, the environment of sound that exists in the absence of human-caused noise—is the baseline condition, and the standard against which current conditions in a soundscape [acoustic resource] will be measured and evaluated" (NPS 2006b). However, the desired acoustic condition may also depend upon the resources and the values of the park, the land use, and the kinds of activities and developments that are appropriate for the purposes of the park. For instance, culturally appropriate sounds are an important element of the Haleakalā National Park experience, especially for Native Hawaiians practicing cultural activities within the park. Overall, this alternative would cause a long-term, beneficial impact on the visitor experience in relation to opportunities for solitude and quiet.

Interpretation and Education. Under alternative D, the overall quality of interpretation and education provided by commercially guided tours would be improved by requiring formal training of guides and the use of interpretive and educational booklets on tours. With consistent educational messages, training, and interpretive materials provided, many visitors would become aware that they are traveling in a national park and would have improved opportunities to learn about park features, resources, cultural practices, and important safety messages. Because interpretive bike tours would be offered under this alternative, visitors would also have an additional opportunity experience active recreation while learning about the park. Therefore, this alternative would have a long-term, beneficial impact on the visitor experience in relation to interpretive and educational opportunities.

Alternative D would generally result in long-term, beneficial impacts to the overall visitor experience due to unlimited commercial use authorizations / concessions and use levels, unlimited access by commercial tours all year long, and few opportunities to experience solitude and quiet. Improved education materials and the addition of an interpretive bike tour would also have beneficial effects on opportunities for interpretation and education.

Cumulative Impacts

Several past, present, or reasonably foreseeable actions may affect the visitor experience at Haleakalā National Park. Past actions such as the development of the NPS commercial services program have allowed visitors from around the country and the world to experience Haleakalā National Park on guided tours. This has had a beneficial effect on visitors by allowing them to experience the park in ways that may not otherwise be accessible via private trip. In addition to companies operating under commercial use authorizations and concession contracts in the park in alternative D, seven helicopters and three fixed wing operators presently have interim operating authority to fly over the park, thereby providing visitors with the opportunity to view the park from the air. This has beneficially affected a small percentage of visitors using this service, but has adversely affected many visitors experiencing the park during the flyovers. Examples of adverse impacts can include noise and detractions to the visual scenery and sense of solitude during flyovers. There are currently 12,796 helicopter flights per year, but 26,325 flights are authorized under the interim operating authority. Although the number of air tours flying over or adjacent to the park could increase to the IOA level, in recent years the number of tours has been declining. Thus, for purposes

of analysis, it is assumed the number of air tours flying over or adjacent to the park stays at current levels. According to the VPI study (2007b), helicopters are rated as slightly unacceptable by visitors. More than a fourth of visitors surveyed noticed helicopter noise on the Waimoku Falls Trail (VPI 2007b). Therefore, adverse effects on visitors in the park would continue in localized zones where air tours occur. For example, helicopter noise would likely cause a moderate to major adverse impact near the crater, and a moderate adverse impact in the Kīpahulu area.

In addition to air tours, other foreseeable future actions include the construction and operations of a new solar telescope outside of the park at the summit, road rehabilitation between Park Headquarters Visitor Center and the Halemau'u trailhead, rehabilitation and expansion of the Kīpahulu visitor center / ranger station, and implementation of the Kīpahulu District comprehensive site plan and design program. While some of the proposed future actions may have short-term, adverse impacts during implementation stages, the purpose of the aforementioned projects is to improve the quality of visitor experiences, natural and cultural resource protection, and park operations. The road rehabilitation would cause short term, moderate, adverse effects to traffic flow during construction. However, the completed improvements to the road between the park headquarters visitor center and the Halemau'u trailhead would provide long-term, beneficial effects on traffic flow, viewsheds, and road safety. The Kīpahulu District comprehensive site plan would have a long-term, beneficial effect on the visitor experience with improved overflow parking and campgrounds, an emergency landing zone, bridge improvements over the pools for better flow of visitors, and trail improvements for better accessibility, way finding, and circulation of visitors.

Overall, there would be beneficial impacts from past and future projects to improve visitor experiences / facilities, and moderate to major adverse impacts from air tours. Overall, there would be long-term, beneficial cumulative effects to visitor experience when the effects of alternative D are added to other foreseeable actions (e.g., improved visitor facilities, roads, and trails) and moderate adverse cumulative impacts when the effects of alternative D are added to the effects resulting from air tour overflights.

Conclusion

Alternative D would generally result in long-term, beneficial impacts to the overall visitor experience due to unlimited commercial use authorizations / concessions and use levels, unlimited access by commercial tours all year long, and few opportunities to experience solitude and quiet. Improved education materials and the addition of an interpretive bike tour would also have beneficial effects on opportunities for interpretation and education.

Overall, there would be long-term, beneficial cumulative effects to visitor experience when the effects of alternative D are added to other foreseeable actions (e.g., improved visitor facilities, roads, and trails) and long-term, moderate, adverse cumulative impacts when the effects of alternative D are added to the effects resulting from air tour overflights. The beneficial impact of Alternative D would contribute a small increment to the overall cumulative impact.

IMPACTS TO PUBLIC HEALTH AND SAFETY

ALTERNATIVE A

Analysis

Under alternative A, there would be no changes to risks associated with public health and safety and commercial use. All tour operators would submit bi-annual safety reports confirming vehicles safety, employee and client safety, equipment safety, and public health. Commercial leaders would continue to discuss required topics with their clients including high elevation issues, weather conditions, roadway conditions, and trail conditions. Although these topics are required to be covered, consistency in safety messaging is currently not being addressed. Under this alternative, the continued inconsistency in interpretive, educational, and safety messages would cause a long-term, minor to moderate, adverse effect for the public health and safety of visitors using commercial services.

This alternative would continue the ban on commercial bicycling inside of the park and would avoid introducing risks associated with bicycles on the roadway. The ban on commercial bike tours inside the park would continue to have a long-term, moderate, beneficial effect on the public health and safety of visitors.

Although commercial bicycle use would not be allowed, there would be unlimited use by other commercial providers increasing risks associated with congestion and user conflicts on narrow winding roads, in parking areas, and on trails. There would be few places for wide, long vehicles to pull over safely on the road to the summit. As a result, motor coaches would continue to be prohibited from the summit area at sunrise, thus preventing risks associated with "close calls" when motor coaches cross the centerline and create high potential for serious accidents during busy times. User conflicts would also be likely to increase as unlimited commercial use authorizations are issued to horse, hiking, road-based, and astronomy commercial groups. Long-term, minor to moderate adverse effects would include crowding and frustration on the roadways, conflicts with more horse and hiker encounters, confusion due to a lack of consistent safety messaging, and a possible increase in hiker safety issues and rescues.

Cumulative Impacts

Past, present, or reasonably foreseeable actions may affect public health and safety at Haleakalā National Park. Completed improvements to the road between the park headquarters/visitor center and the Halemau'u trailhead would provide long-term, minor beneficial effects on traffic flow and road safety. The implementation of the Kīpahulu District comprehensive site plan would have a long-term, moderate, beneficial effect on public health and safety with a new emergency landing zone and trail improvements for better accessibility, way finding, and safety messaging about the dangers of hiking in specified areas.

Overall, there would be long-term, moderate beneficial impacts to public health and safety due to the possible future actions noted. Adding these impacts to the generally adverse impacts described under alternative A would result in overall long-term, minor to moderate, beneficial cumulative impacts to public health and safety, with alternative A adding a noticeable adverse increment to the overall cumulative impact.

Conclusion

Alternative A would result in long-term, minor to moderate, adverse effects on public health and safety due to crowding and

frustration on the roadways, conflicts with horse and hiker encounters, confusion due to a lack of consistent safety messaging, and a possible increase in hiker safety issues and rescues. When the effects of alternative A are added to the effects of the park road rehabilitation and the implementation of the Kīpahulu District comprehensive site plan there would likely be a minor to moderate, beneficial cumulative impacts to public health and safety (with alternative A adding a noticeable adverse increment to the overall cumulative impact).

ALTERNATIVE B

Analysis

Under alternative B, there would be some changes to risks associated with public health and safety and commercial use. All commercial service tour providers would submit bi-annual safety reports confirming vehicles safety, employee and client safety, equipment safety, and public health. Commercial leaders would continue to discuss required topics with their clients including high elevation issues, weather conditions, roadway conditions, and trail conditions. Although these topics are required to be covered, consistency in safety messaging is currently not being addressed. Under this alternative, interpretive booklets would be provided and would allow for consistency in interpretive, educational, and safety messages. Provision of the booklets would cause a long-term, moderate beneficial effect on the public health and safety of visitors using commercial services.

Like alternative A, this alternative would continue the ban on bicycles inside of the park and thus would avoid introducing risks associated with bicycles on the roadway. The ban on commercial bike tours inside the park would continue to have a long-term, moderate, beneficial effect on the public health and safety of visitors.

There would be some limits on use by other commercial providers decreasing risks associated with congestion and user conflicts on narrow winding roads, in parking areas, and on trails. This would slightly help by allowing a few more available places for wide, long vehicles to pull over safely on the road to the summit. On three to five days of the year, there would be no commercial tours allowed in the park. This change would have a long-term, minor beneficial effect on risks associated with commercial use and public health and safety. Under this alternative motor coaches would be prohibited at all times, thereby eliminating risks associated with "close calls" when these wide vehicles cross the centerline and create high potential for serious accidents. User conflicts are also likely to slightly decrease as limited commercial use authorizations would be issued to horse, hiking, and astronomy commercial groups and limited concession contracts would be issued to road-based groups. Long-term, negligible to minor, beneficial effects would include a slight reduction in crowding and frustration on the roadways, in conflicts involving horse and hiker encounters, and decreased potential for hiker safety and rescues due to some limitation on commercial use and consistent safety messages provided in interpretive booklets.

Cumulative Impacts

Past, present, or reasonably foreseeable actions may affect public health and safety at Haleakalā National Park. Completed improvements to the road between the park headquarters/visitor center and the Halemau'u trailhead would provide long-term, minor beneficial impacts to public health and safety due to the possible future actions noted. Adding these impacts to the generally beneficial impacts described under alternative B would result in overall minor to moderate long-term, beneficial cumulative impacts to public health and safety, with alternative B adding a noticeable beneficial increment to the overall cumulative impact.

Conclusion

Alternative B would result in long-term, negligible to minor beneficial effects on public health and safety due to a slight reduction in crowding and visitor frustration on the roadways, in conflicts involving horse and hiker encounters, and decreased potential for hiker safety and rescues because of some limitation on commercial use and consistent safety messages provided in interpretive booklets. When the effects of alternative B are added to the effects of the park road rehabilitation and the implementation of the Kīpahulu District comprehensive site plan there would likely be a minor to moderate, beneficial cumulative impact to public health and safety (with alternative B adding a beneficial increment to the overall cumulative impact).

ALTERNATIVE C

Analysis

Under alternative C, there would be some changes to risks associated with public health and safety and commercial use. All commercial service providers would submit bi-annual safety reports confirming vehicles safety, employee and client safety, equipment safety, and public health. Commercial leaders would continue to discuss required topics with their clients including high elevation issues, weather conditions, roadway conditions, and trail conditions. Although these topics are required to be covered, consistency in safety messaging is currently not being addressed. Under this alternative, interpretive booklets would be provided and would allow for consistency in interpretive, educational, and safety messages; and would cause a long-term, moderate, beneficial effect for the public health and safety of visitors using commercial services.

Like alternative A, this alternative would continue the ban on bicycles inside of the park and would eliminate risks associated with bicycles on the roadway. A continuation of the ban on commercial bike tours inside the park would have a long-term, moderate, beneficial effect on the public health and safety of visitors.

Strict use limits would be set for other commercial providers considerably decreasing risks associated with congestion and user conflicts on narrow winding roads, in parking areas, and on trails. Under this alternative motor coaches would be prohibited on the road to the summit at sunrise, eliminating risks associated with "close calls" when these wide vehicles cross the centerline and create high potential for serious accidents during busy times. User conflicts would also be likely to considerably decrease as limited commercial use authorizations would be issued to horse, hiking, and astronomy tour groups and limited concession contracts would be issued to road-based groups. This alternative allows commercial horse groups to use the Kīpahulu area. Long-term, moderate, beneficial effects would result from a considerable reduction in crowding and frustration on the roadways, a reduction in conflicts involving horse and hiker encounters especially at the summit area, and decreased potential for hiker safety issues and rescues due to strict limitations on commercial use and consistent safety messages provided in interpretive booklets.

Cumulative Impacts

Past, present, or reasonably foreseeable actions may affect public health and safety at Haleakalā National Park. Completed improvements to the road between the park headquarters/visitor center and the Halemau'u trailhead would provide long-term, minor, beneficial effects on traffic flow and road safety. The Kīpahulu master plan would have a long-term, moderate, beneficial effect on public health and safety with a new emergency landing zone and trail

improvements for better accessibility, way finding, and safety messaging about the dangers of hiking in specified areas. Overall, there would be moderate beneficial impacts to public health and safety due to the possible future actions noted.-Adding these impacts to the beneficial impacts described under alternative C would result in overall moderate long-term, beneficial cumulative impacts to public health and safety, with alternative C adding a noticeable beneficial increment to the overall cumulative impact.

Conclusion

Alternative C would result in long-term, moderate, beneficial effects on public health and safety due to a considerable reduction in crowding and visitor frustration on the roadways, in conflicts involving horse and hiker encounters especially at the summit area, and decreased potential for hiker safety issues and rescues due to strict limitations on commercial use and consistent safety messages provided in interpretive booklets. When the effects of alternative C are added to the effects of the park road rehabilitation and the implementation of the Kīpahulu District comprehensive site plan there would likely be a minor to moderate, beneficial cumulative impacts to public health and safety (with alternative C adding a noticeable beneficial increment to the overall cumulative impact).

ALTERNATIVE D

Analysis

Under alternative D, there would be changes to risks associated with public health and safety and commercial use. All commercial service tour providers would submit bi-annual safety reports confirming vehicles safety, employee and client safety, equipment safety, and public health. Commercial leaders would continue to discuss required topics with their clients including high elevation issues, weather conditions, roadway conditions, and trail conditions. Although these topics are required to be covered, consistency in safety messaging is currently not being addressed. Under this alternative, interpretive booklets would be provided and would allow for consistency in interpretive, educational, and safety messages; and would cause a long-term, moderate beneficial effect for the public health and safety of visitors using commercial services.

This alternative would introduce a new option for interpretive bike tours with up to two commercial use authorizations being issued for this activity. This change would have long-term, moderate adverse effects on the public health and safety of visitors. Even with the various stipulations and conditions for allowing the interpretive bicycle tours, allowing bicycles on the narrow, winding roads, would pose increased safety issues associated with congestion and user conflicts on the roads, in parking areas would occur. Thus, there would likely be long-term, moderate, adverse effects to visitor safety, with the potential for vehicle-bicycle accidents.

Like alternative A, under alternative D there would also be fewer available places for wide, long vehicles to pull over safely on the road to the summit. Under this alternative, motor coaches would be prohibited on the road to the summit at sunrise, eliminating risks associated with “close calls” when these wide vehicles cross the centerline and create high potential for serious accidents during busy times. User conflicts would also be likely to increase as many commercial use authorizations would be issued for horse, hiking, and astronomy commercial tour groups and up to five concession contracts would be issued to road-based groups. However, unlike alternative A, alternative D would limit the number of commercial use authorizations and concession contracts. Thus, although there would be long-term, adverse effects due to crowding and visitor frustration on the roadways, and conflicts with more horse and hiker encounters, and increased potential for hiker safety issues

and rescue concerns; compared to alternative A this alternative would have a long-term, minor, beneficial effect—public health and safety risks would still exist in alternative D due to crowding and user conflicts, but would be less than in alternative A.

Cumulative Impacts

Past, present, or reasonably foreseeable actions may affect public health and safety at Haleakalā National Park. Completed improvements to the road between the park headquarters/visitor center and the Halemau'u trailhead would provide long-term, minor, beneficial effects on traffic flow and road safety. The Kīpahulu District comprehensive site plan would have a long-term, moderate, beneficial effect on public health and safety with a new emergency landing zone and trail improvements for better accessibility, way finding, and safety messaging about the dangers of hiking in specified areas. Overall, there would be moderate, beneficial impacts to public health and safety due to the possible future actions noted. Adding these beneficial impacts to the mostly adverse impacts described under alternative D would result in overall minor, beneficial, long-term cumulative impacts to public health and safety.

Conclusion

Compared to alternative A, alternative D would result in minor to moderate, long-term, beneficial impacts due to the provision of an interpretive booklet, and the institution of limits on the number of commercial use authorizations and concession contracts for tour groups in the park. The alternative also would have a long-term, moderate, adverse effect on public safety due to crowding and frustration on the roadways, conflicts among user groups, increased potential for hiker safety issues and rescue due to few limitations on commercial use, and to increased risks of possible accidents due to bicyclists on the road. When the effects of alternative D are added to the effects of the park road rehabilitation and the implementation of the Kīpahulu District comprehensive site plan there would likely be minor, beneficial cumulative impacts to public health and safety.

IMPACTS TO SOCIOECONOMICS

ALTERNATIVE A

Analysis

Tour Company Employment. Astronomy, hiking, and horseback tours would not be limited by the National Park Service, except by the number of available parking spaces and group size. This would allow for an unlimited number of tour operators, and allow operators to take advantage of changes in demand, perhaps by offering more frequent tours during peak periods. There could be some adverse impact to individual operators due to competition. The number of commercial operations authorized in the park would not necessarily affect the number of employed tour guides. For example, five companies might employ ten each, while ten companies might employ five staff each; in both scenarios, the total employment is 50. Alternative A would allow companies to be flexible with offering a greater number of tours when needed, such as during peak visitation periods. This would result in strengthened employment. Therefore, alternative A would result in long-term, beneficial impacts to astronomy, hiking, and horseback tour employment levels.

Road-based vehicle tours would be unrestricted as to the number of operators, and the number of tours. Tour operators would be limited in use of motor coaches, and limited by the number of parking spaces (13) at the summit. Continuing to prohibit the use of motor coaches to travel to the summit visitor center at sunrise and to the Red Hill parking lot at all times would require companies to continue to have additional drivers, guides, and vehicles to take a similar number of people to the summit. The limitation of 13 designated parking spaces at the summit for road-based vehicle operations would continue to impact tour companies and employment levels, reducing opportunities to provide tours during sunrise.

Bicycle tour company employment would continue to be adversely affected by the prohibition of bicycle tours in the park. There was a 49% drop in bicycle clients recorded from August 2007 to August 2008 (the safety stand down began in fall 2007) (Maui County, 2010). However, economic recession may have caused some of the drop, as there was also a 21% drop in visitors to Maui County during the same time frame (DBEDT 2010). Bike tour companies have adapted to provide road-based vehicle tours within the park, stopping outside the park to begin bicycle tours.

Alternative A would result in overall moderate long-term, beneficial impacts to tour company employment, due to the lack of limits to number of tours, therefore allowing companies to increase tour frequency during peak visitation periods.

Local Communities—Visitor and Park Operational Spending. Under alternative A, unlimited growth in commercial use authorizations would potentially allow a greater number of commercial visitors to come to the park, especially if demand increases. Visitors likely spend more money if they opt to take a guided tour than they would when visiting the park on their own, due to the added value of a guided tour. Increased visitor spending due to alternative A would result in long-term, beneficial impacts to the economy.

There could also be adverse impacts to local communities. Greater competition from unlimited tour operators could encourage price competition and therefore reduce spending on tour packages. Congestion from bicycle tours groups have been cited as a reason that some communities, such as Makawao, may have lost some resident

business (Maui County 2010). Large, slower commercial tour vehicles can also create congestion, inconveniencing community members. On the other hand, commercial road-based tours potentially reduce congestion since vans, minibuses, and motor coaches hold many passengers. The adverse impacts of alternative A on the community would be long-term, but negligible.

The National Park Service is projected to spend $767,000 annually for 13 full-time equivalents for the park. This spending impacts the local economy through providing income to residents, who then spend money on lodging, food, entertainment, transportation, etc. Park operational spending contributes a long-term, beneficial impact to local economy.

While some negligible adverse impacts to the community economy could occur, overall, alternative A is expected to result in continued long-term, minor beneficial impacts to the community economy, due to potential increased visitor spending, and increased park operational spending.

Cumulative Impacts

Spending by the National Park Service and other entities on other projects, including the park road resurfacing project, telescope construction, and Kīpahulu District comprehensive site plan proposals, would benefit the economy. Spending on planning, design, and construction employs workers, and contributes money into the local economy. In combination with the beneficial impacts to the economy from these other projects, alternative A would result in short- and long-term, minor beneficial cumulative impacts to the economy.

Conclusion

Alternative A would result in overall long-term, moderate beneficial impacts to employment in astronomy, hiking, horseback, or road-based tours, due to the unlimited number of tours per day allowed, yet continued minor adverse impacts to employment at bicycle tour companies. While some adverse impacts to the local communities could occur, such as potential increased congestion, overall, alternative A is expected to result in continued long-term, minor beneficial impacts to the community economy, due to potential increased visitor spending for tours, and increased park operational spending. In combination with other projects, alternative A would result in long-term, minor beneficial cumulative impacts to the economy.

ALTERNATIVE B

Analysis

Tour Company Employment. Astronomy, hiking, and horseback tours in the park would be limited in number of companies, number of tours, and group size. Limitations on the number of providers would have a beneficial effect on the selected operators, and adverse effect on operators not selected. Some employment opportunities would likely shift to selected companies, but would not necessarily increase or decrease much throughout the island, due to this alternative.

The selected firms would be able to achieve some economies of scale regarding labor and administrative costs if they were to attract more visitors. Limits to tour size may increase employment or wages, since there would be a greater number of employees per client.

In comparison with the total commercial visitors reported in 2009, astronomy, hiking, and horseback tours all would have room for much larger numbers of commercial visitors. This shows that while limitations on operators would be increased, employment would not be restricted by this alternative, as there is ample room for a greater number of visitors to participate in tours. However, this figure does not address seasonal changes in

business; including the busier summer, winter holiday, and spring break time periods. Higher commercial tour visitation during peak times could be limited given daily limits, and this would reduce employment or wages if demand for tours would exceed the allowed amount. Of course, operators could offer tours outside of park boundaries during peak periods, to absorb additional demand, if that scenario were to occur. The number of astronomy, hiking, and horseback tour companies would be limited to 2009 levels; therefore, the existing in-park tour companies would have a chance to continue to provide services within the park. Many of the companies are dependent on visiting the park. The horseback company, three of the astronomy companies, and one hiking company make most of their revenue from in-park tours. Were these companies to lose their commercial use authorizations, they would be negatively affected and. Other companies make a smaller percentage of revenues from in-park tours, and while those companies would no doubt still be hurt from losing their commercial use authorizations, they may be better able to adapt by providing more tours outside the park. While Maui is an island with limited public space, there are many hiking and horseback riding opportunities outside of the park. Astronomy tours may also be available at locations outside of the park.

Employment may shift from one company to another, based on each business' ability to attract clients; however, total tour company employment would be unlikely to change much due to the alternative, except where peak demand periods might exceed maximum allowable commercial visitor numbers. Alternative B would allow for a large amount of growth in commercial clients, as compared with 2009 actual client numbers.

Road-based vehicle tours would be limited to not more than four concession contractors. While the selected operators would benefit from reduced competition for tours within the park, the operators not selected would be adversely affected. The four companies would be able to improve fleet occupancy, and therefore improve the profitability of each tour. Historically, fleet occupancy for the summit at sunrise has been approximately 60% of available seating. The selected firms would be better able to provide steady seasonal employment and reliable wages for their employees. Those firms (and their employees) that were awarded contracts would experience long-term, benefits for the duration of the contract or the length of employment. Alternative B proposes that eight assigned parking stalls be made available for road-based tours. This would be an increase of stalls per company.

The consistently busiest time is sunrise at the summit. Figure 18 depicts the maximum number of commercial visitors at sunrise at the summit each day. While the number is reduced from Alternative A to Alternative B, there would also be fewer companies providing this service, which would allow commercial providers to capture a greater market share. Alternative B would result in up to 384 road-based tour visitors per day, seven days per week going to the summit for sunrise (except for three to five days per year), which is 240 fewer than in alternative A. Sixty percent (the historical sunrise fleet occupancy) of 624 is 374-which means that alternative B still allows for visitation within the historical totals. However, if commercial visitor demand would change based on the season or future increased interest, tour companies would not be able to meet additional demand (above 384 visitors). Employment supported by road-based tours in the park would be adversely impacted, as fewer visitors would be able to visit during sunrise hours than in alternative A.

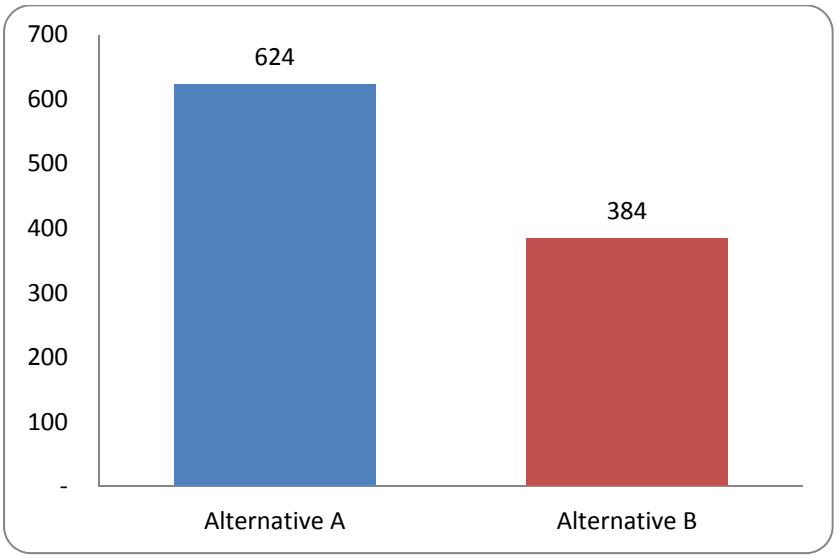

FIGURE 18. COMPARISON OF MAXIMUM DAILY SUNRISE COMMERCIAL VISITORS AT THE SUMMIT FOR ROAD-BASED COMMERCIAL TOURS, ALTERNATIVES A AND B

The road-tour operators that did not win one of the four contracts would lose out on the ability to offer tours within the park. Most road-based tour companies on Maui visit a number of sites, and many tours do not visit the park. The companies would likely be hurt by the loss of access to the park; however, opportunities would remain to offer tours to other parts of Maui. While it is possible that some operators could go out of business due to no longer having access to the park, it is not the only option, as there are other possibilities for marketing to visitors. The majority of road tour companies (except those with the bicycle option outside the park) generated revenues of less than 30% from tours that visited the park. One company generated nearly all revenue from tours that visited the park. Road-based vehicle tour companies with the bicycle option; however, may be more dependent on visiting Haleakalā—on average; they earned nearly 70% of their revenue from in-park trips. Each of these companies now visits the park for sunrise, and then takes clients outside the park to begin the downhill bike tour. Only one bicycle tour company generated less than half its revenue from in-park tours. While these companies all visit the summit currently, it is likely that if they did not, they would still be able to attract clients to the bike ride experience without a visit to the park. However, a company that did not win a contract would likely lose some visitors that chose to also visit the park and may have to reduce prices to compete with in-park tours.

Until a competitive process is undertaken for the concessions contracts and commercial use authorizations, it is unknown, which operators would be selected, and therefore it is impossible to determine how particular operators would be affected. Some companies are more diversified, while others may rely mostly on tours given within the park. The degree to which operators would be affected by the alternative depends on their business model, and how they adapt to the decisions made. Some companies could be affected slightly, while others could be affected to a much greater extent.

Tour guides for all types of tours would be required to attend training from the park staff. While this would cost companies some staff time, they would also be capable of providing more informative tours.

Employment for astronomy, hiking, and horseback tours would not change due to this alternative, as employees could move from one company to another, if needed. However, road-based tour employees may be affected by limits on visitation, especially at peak sunrise hours. This alternative would result in minor long-term, adverse impacts to tour company employment.

Local Communities—Visitor and Park Operational Spending. Alternative B may result in reduced visitor spending in local communities if the limitations on commercial services providers result in a reduced number of visitors to Haleakalā. If visitor numbers to the park were reduced through alternative B (due to reduced parking, tours, and commercial providers), the communities around the park may see reductions in visitors and visitor spending. Some visitors may find their own transportation if a tour is not available, and in that case, the change in spending patterns would be minimal. Some visitors may not visit the park at all if no tour were available, and the visitors would do something else with their time and money, perhaps take a different tour outside of the park.

Alternative B would also provide some benefit to the socioeconomic environment. The encouragement of employment of Native Hawaiian guides for tour operators would be a benefit to native residents. Prohibiting motor coaches in the park may result in reduced congestion in communities such as Paia, Makawao, and Hana.

This alternative would result in long-term, negligible to minor adverse impacts to local communities economically due to decreased visitor spending; but also long-term, negligible beneficial impacts to communities due to potentially reduced congestion and increased employment of Native Hawaiian guides.

Under alternative B, the National Park Service would be projected to spend $603,000 annually for 9.25 FTE in the park. This spending would impact the local economy through providing income to residents who then spend money on lodging, food, entertainment, transportation, etc. Park operational spending contributes a long-term, beneficial impact to local economy. However, NPS expenditures in alternative B would be less than in alternative A.

Overall, alternative B is thus expected to result in negligible long-term, adverse impacts to the community economy, due to potential decreased visitor spending, and decreased park operational spending as compared with alternative A.

Cumulative Impacts

Spending by the National Park Service and other entities on other projects, including the park road resurfacing project, telescope construction, and Kīpahulu District comprehensive site plan proposals, would benefit the economy. Spending on planning, design, and construction employs workers, and contributes money into the local economy. In combination with the beneficial impacts to the economy from these other projects; alternative B would result in short and long-term, minor beneficial cumulative impacts to the economy, as these other projects outweigh the reduction of NPS spending and visitor spending due to alternative B.

Conclusion

Alternative B would result in overall long-term, minor adverse impacts to tour company employment. Alternative B may result in negligible long-term, adverse effects to the local economies, if visitor demand exceeds maximum capacity for commercial tours of the park; and due to reduced park operational spending. In combination with other projects, alternative B would result in short and long-term, minor beneficial cumulative impacts to the economy (as reductions in park spending and visitor spending would be outweighed by the other project increases).

ALTERNATIVE C

Analysis

Tour Company Employment. Alternative C is the most restrictive of the alternatives towards commercial tours. The alternative would allow the fewest number of commercial providers of all the alternatives. Limitations on the number of providers would have a beneficial effect on the selected operators, and an adverse effect on operators not selected. The selected firms would be able to achieve some economies of scale regarding labor and administrative costs if they were to attract more visitors. Employment would be affected by limits to tour size, requiring greater numbers of employees per client. Summit sunrise tours would be restricted to road-based tours only

Under alternative C, horseback tours have room for visitation levels similar to 2009 actual visitor numbers. Astronomy and hiking tours have greater room for growth in clients. This shows that while limitations on operators would be increased, employment would not be affected unless demand exceeded allowable tour numbers However, this figure does not address seasonal changes in business; including the busier summer, winter holiday, and spring break time periods. Visitation during peak times could be restricted given daily limits. Employment and wages would generally be able to grow if needed, and would not be constrained by the alternative. Only if demand were to exceed maximum allowable visitors, would employment and wages be impacted. This is unlikely to occur given assumptions for future visitation, except possibly during peak periods and Companies not selected for a commercial use authorization would be adversely affected, through a potential loss of visitors. For astronomy, the same number of operators as were operating in 2009 would be authorized to provide services within the park. Many of the companies rely on touring the park—a the horseback company, three of the astronomy companies, and one hiking company make most of their revenue from in-park tours. However, the other companies make a lower percentage of revenues from in-park tours, and while they would be affected from losing their commercial use authorizations, they may be better able to adapt by providing tours outside of park boundaries.

Road-based vehicle tours would be limited to not more than three concession contractors. While the selected operators would benefit from reduced competition for tours within the park, the operators not selected would be adversely affected. The three contracted companies would likely be able to improve vehicle occupancy, and therefore increase the profitability of each tour. Historically, fleet occupancy for sunrise has been approximately 60% of available seating. The selected firms would be better able to provide steady seasonal employment and reliable wages for their employees. Those firms (and their employees) that were awarded contracts would experience long-term, benefits for the duration of the contract or the length of employment.

Alternative C proposes that six assigned parking stalls be made available for road-based tours. This would be an increase of stalls for each company. The most consistently busy time is sunrise at the summit. Figure 19 depicts the maximum number of commercial visitors at sunrise at the summit each day. While the number is reduced from alternative A to alternative C, there would also be fewer companies providing this service, which would allow commercial providers to capture a greater percentage of potential clients. Alternative C would allow for up to 288 road-based tour visitors per day, 7 days per week going to the summit for sunrise, which is 336 number fewer than in alternative A. Sixty percent (the historical sunrise fleet occupancy) of 624 is 374-which means that alternative C would not allow for commercial visitation at historical levels. Employment supported by

road-based tours in the park would be adversely impacted, as fewer visitors would be able to visit during sunrise hours, especially during peak periods.

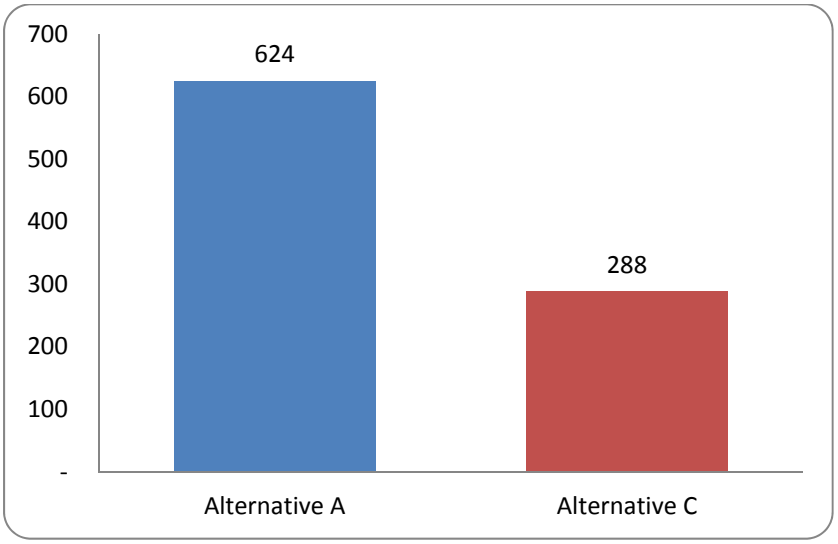

FIGURE 19. COMPARISON OF MAXIMUM DAILY SUNRISE COMMERCIAL VISITORS AT THE SUMMIT FOR ROAD-BASED COMMERCIAL TOURS, ALTERNATIVES A AND C

The operators that did not win one of the four contracts would lose out on the ability to offer tours within the park. Most road-based tour companies visit a number of sites, and many tours do not visit the park. The companies would likely be hurt by the loss of access to the park; however, opportunities would remain to offer tours to other parts of Maui. It is possible that some operators could go out of business due to no longer having access to the park. The majority of road-based vehicle tour companies (except those with the bicycle option) generated revenues of less than 30% from tours that visited the park. One company generated nearly all revenue from tours that visited the park.

Road-based vehicle tour companies with the bicycle option; however, may be more dependent on visiting the park; nearly 70% of their revenues were earned through in-park tours. Each of these companies now visits the park for sunrise, and then takes clients outside the park to begin the downhill bike tour. Only one firm generated less than half its revenue from in-park tours. While these companies all visit the summit currently, it is likely that if they did not, they would still be able to attract clients to the bike ride experience without a visit to the park. However, a company that did not win the contract would likely lose some visitors that chose to also visit the park and they may have to reduce prices to compete with in-park tours.

Until a competitive process is undertaken for the concessions contracts and commercial use authorizations, it is unknown, which operators would be selected, and therefore it is impossible to determine how particular operators would be affected. Some companies are more diversified, while others may rely mostly on tours given within the park. Some companies could be affected slightly, while others could be affected to a much greater extent.

All tour guides would be required to attend training from the park. While this would cost companies some staff time, they would also

be capable of providing a more informative tour, which may enhance the reputation of the company and result in more clients.

Alternative C is most restrictive toward commercial service providers, and the fewest number of commercial visitors would be permitted, compared with the other alternatives. Employment for astronomy, hiking, and horseback tours would not change due to this alternative, as employees could move from one company to another, if needed. Visitation demand is unlikely to reach limits set by the alternative. However, road-based tour employees would be affected by limits on visitation, especially at peak sunrise hours. This alternative would result in minor to moderate long-term, adverse impacts to tour company employment.

Local Communities—Visitor and Park Operational Spending. Alternative C may result in reduced visitor spending in local communities, if the limitations on commercial services providers reduce the number of visitors to Haleakalā. If visitor numbers to the park were reduced through alternative C (through limitations on commercial providers, tour size, and number of tours), the communities around the park may see reductions in visitors and associated visitor spending. Some visitors may contract for their own transportation if a tour is not available, and in that case, the change in spending patterns would be minimal. Some visitors may not visit the park at all if no tour were available, and the visitor would do something else with their time and money, perhaps take a different tour outside of the park.

Alternative C would also provide some benefit to the socioeconomic environment. The encouragement of employment of Native Hawaiian guides for tour operators would be a benefit to native residents. Under alternative C, the National Park Service would be projected to spend $516,000,000 annually for 8.75 FTE in the park. This spending would impact the local economy through providing income to residents who then spend on lodging, food, entertainment, transportation, etc. Park operational spending contributes a long-term, beneficial impact to local economy. However, NPS expenditures in alternative C would be less than spent in alternative A. Alternative C is thus expected to result in minor long-term, adverse impacts to the community economy, due decreased park operational spending and decreased visitor spending in comparison with alternative A; but also negligible long-term, beneficial impacts to communities due to potentially increased employment of Native Hawaiian guides.

Cumulative Impacts

Spending by the National Park Service and other entities on other projects, including the park road resurfacing project, telescope construction, and Kīpahulu District comprehensive site plan proposals, would benefit the economy. Spending on planning, design, and construction employs workers, and contributes money into the local economy. In combination with the beneficial impacts to the economy from these other projects; alternative C would result in short and long-term, negligible to minor beneficial cumulative impacts to the economy, as these other projects likely outweigh the reduction of NPS spending and visitor spending due to alternative C.

Conclusion

Alternative C would result in overall long-term, minor to moderate adverse impacts to commercial tour employment and wages. And result in minor long-term, adverse effects to local economies, if visitor demand exceeds maximum capacity for commercial tours of the park, and due to reduced park operational spending. In combination with other projects, alternative C would result in long-term, negligible to minor beneficial cumulative impacts to the economy (as reductions in park spending and visitor spending would be outweighed by the other projects' increases).

ALTERNATIVE D

Analysis

Tour Company Employment. Alternative D places limits on the numbers of commercial providers, tour sizes, and some limits on the number of tours per day. However, the limits greatly exceed the demand in 2009. Other than alternative A, alternative D is the least restrictive to commercial providers. Limitations on the number of providers would have a beneficial effect on the selected operators, and adverse effect on operators not selected. Alternative D, like alternative A, would allow for many operators, thus encouraging competition that could potentially reduce profitability for each company. Summit sunrise tours would be restricted to road-based tours and horse tours, also a reduction in tour options available to astronomy and hiking tours. Limits to the number of tours would likely not adversely impact operators or employment, because the capacity for tours would be much greater than the demand. Astronomy, hiking, and the horseback tour all have room for tour levels much greater than 2009 actual numbers. This shows that while limitations on operators would be increased, employment would not be affected by the alternative. Peak demand during busy seasons would likely be accommodated through this alternative.

Companies not selected for a commercial use authorization would be adversely affected, through a potential loss of visitors. Commercial visitor demand would not likely exceed allowable tours, therefore astronomy, hiking, and horseback tour employment and wages would not be affected by the alternative.

Two commercial use authorizations would be available to companies offering an interpretive bicycle tour, a new opportunity not present in alternative A. Although tour group sizes would be small, the operators would have the opportunity to provide the only in-park bicycle tours. A new clientele may be attracted by this safe and educational tour. Employment through tour companies would have an opportunity to increase as a result of this new visitor opportunity.

Road-based vehicle tours would be limited to not more than five concession contractors. While the selected operators would benefit from reduced competition for tours within the park, the operators not selected would be adversely affected. The five contracted companies would be able to improve fleet occupancy, and therefore increase the profitability of each tour. Historically, fleet occupancy for sunrise has been approximately 60% of available seating. The selected firms would be better able to provide steady seasonal employment and reliable wages for their employees. Those firms (and their employees) that were awarded contracts would experience long-term, benefits for the duration of the contract or the length of employment. Alternative D proposes that 15 assigned parking stalls be made available for road-based tours. This would be an increase to three stalls for each company.

Sunrise at the summit is the busiest time for commercial tours. Figure 20 depicts the maximum number of visitors possible to view sunrise at the summit each day. Alternative D would allow up to 720 road-based tour visitors per day, 7 days per week going to the summit for sunrise, which is 96 people more than in alternative A, as alternative A only allows for 13 parking stalls. There would also be fewer companies providing this service, which would allow commercial providers to capture a greater percentage of potential clients. Employment and wages in road-based vehicle tour companies could increase based on the additional visitors that could be accommodated.

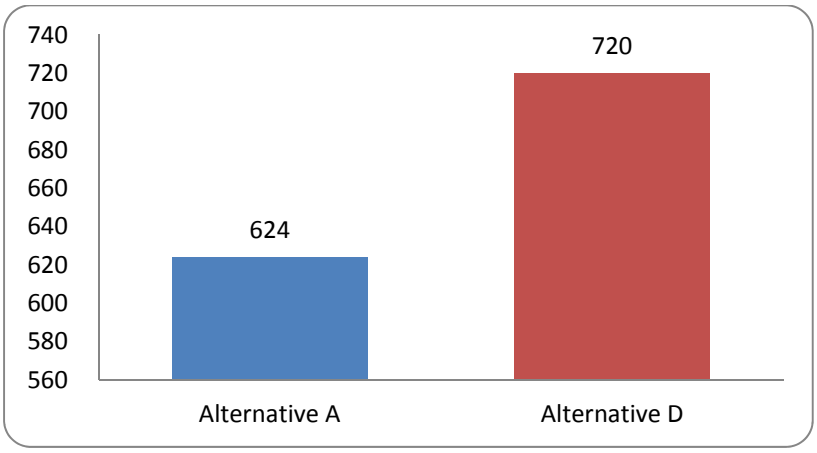

FIGURE 20. COMPARISON OF MAXIMUM DAILY SUNRISE COMMERCIAL VISITORS AT THE SUMMIT FOR ROAD-BASED COMMERCIAL TOURS, ALTERNATIVES A AND D

The road-tour operators that did not win one of the five contracts would lose out on the ability to offer tours within the park. Most road-based tour companies visit a number of sites, and many tours do not visit the park. The companies would likely be hurt by the loss of access to the park; however, opportunities would remain to offer tours to other parts of Maui. It is possible that some operators could go out of business due to loss of in-park authorization. The majority of road-based vehicle tour companies (except those with the bicycle option) generated revenues of less than 30% from tours that visited the park. One company generated nearly all revenue from tours that visited the park.

While two interpretive bicycle tour companies would be permitted within this alternative, other bicycle tour companies could compete for the five road-based vehicle tour concession contracts. Road-based vehicle tour companies with the bicycle option; however, may be more dependent on visiting the park, as, on average, 70% of revenues are earned through in-park tours. Each of these companies now visits the summit during sunrise, and then takes clients outside the park to begin the downhill bike tour. Only one firm generated less than half its revenue from in park tours. While these companies all visit the summit currently, it is likely that if they did not, they would still be able to attract clients to the bike ride experience without a visit to the park. However, a company that did not win the contract would likely lose some visitors that chose to also visit the park and they may have to reduce prices to compete with in-park tours.

Until a competitive process is undertaken for the concessions contracts and commercial use authorizations, it is unknown, which operators would be selected, and therefore it is impossible to determine how particular operators would be affected. Some companies are more diversified, while others may rely mostly on tours given within the park. The degree to which operators would be affected by the alternative depends on their business model, and how they adapt to the decisions made. Some companies could be affected slightly, while others could be affected to a much greater extent.

All tour guides would be required to attend training from the park. While this would cost companies some staff time, they would also be capable of providing a more informative tour, which may enhance the reputation of the company and result in more clients. This alternative would adversely affect the fewest number of current tour providers compared with alternatives B and C. The number of nonroad-based operators would

be permitted to increase from the current number. While 19 road-based tour providers provided tours in the park in 2009, only 5 road-based plus 2 interpretive bicycle tour companies would be permitted under this alternative. Employment in tour companies would likely not change under this alternative for astronomy, hiking, and horseback tours. However, employment or wage increases could occur in interpretive bicycle tours and road-based tours due to the alternative. Alternative D would result in minor long-term, beneficial impacts to tour employment and wages.

Local Communities—Visitor and Park Operational Spending. Alternative D may result in visitor spending similar to alternative A, although if commercial tour demand reached levels above what alternative D allows, visitor spending would be less in this alternative. An increase in commercial parking stalls would allow a greater number of visitors to come to the summit; especially at sunrise, when peak visitors occur. Alternative D may result in a greater number of commercial visitors to the park, and therefore affect local communities with small increases in visitor spending in surrounding areas. However, as for increased bicycle tours (interpretive tours), according to community meetings held for the Maui County Bicycle Tour Study, bicycle tour exposure lead to very little visitor spending in the toured communities (Maui County 2010).

Alternative D would also provide other effects to the socioeconomic environment. The encouragement of employment of Native Hawaiian guides for tour operators would be a benefit to native residents. There is a potential for minor adverse impacts of greater bicycle tour congestion in communities and roads outside the park. Under alternative D, the National Park Service would be projected to spend $841,000 annually for 14.25 FTE in the park. This spending would impact the local economy through providing income to residents who then spend on lodging, food, entertainment, transportation, etc. Park operational spending contributes a long-term, minor beneficial impact to local economy, greater than in alternative A.

While some adverse impacts to the community economy could occur, overall, alternative D is expected to result in minor long-term, beneficial impacts to the community economy, due to increased park operational spending. This alternative would result in the same beneficial impacts as alternative A to the economy, although if demand increased beyond the limits of this alternative, the impacts would be long-term, negligible, and adverse in comparison with the no action alternative. Minor long-term, beneficial impacts to communities due to potentially increased employment of Native Hawaiian guides would also occur.

Cumulative Impacts

Spending by the National Park Service and other entities on other projects, including the park road resurfacing project, telescope construction, and Kīpahulu District comprehensive site plan proposals, would benefit the economy. Spending on planning, design, and construction employs workers, and contributes money into the local economy. In combination with the beneficial impacts to the economy from these other projects; alternative D would result in long-term, minor beneficial cumulative impacts to the economy.

Conclusion

Alternative D would result in overall long-term, minor beneficial impacts to tour company employment and wages. Alternative D is expected to result in continued long-term, minor beneficial impacts to the community economy (as in alternative A), with additional park operational spending adding a small benefit over alternative A. In combination with other projects, alternative D would result in short and long-term, minor beneficial cumulative impacts to the economy.

IMPACTS TO PARK OPERATIONS

ALTERNATIVE A

Analysis

Under alternative A, the number of commercial use authorizations would not be limited. Administration of the commercial services program includes authorizing and monitoring companies, providing information, and issuing citations. With unlimited growth in the number of commercial use authorizations there would be a need for increased oversight by the park staff, and the program would become increasingly complex to manage. While commercial use authorizations would be unlimited, that does not mean that they would increase indefinitely. Instead, the number of commercial use authorizations issued would increase or decrease based on the demands of the marketplace, the business climate, and other factors.

Currently, one FTE position is devoted to managing commercial services. However, the park staff estimates that additional FTE are needed to adequately manage the program. With an uncapped number of commercial use authorizations, management of the program would likely require more staff time.

Under alternative A, two GS-5 staff are needed at the summit at sunrise to answer questions for commercial visitors. Commercial service guides are not required to be trained on the park, and therefore, visitors ask park staff questions that possibly could be answered by tour guides. Maintenance would require 2.5 FTE to maintain facilities used by commercial visitors. Overall, 2 additional FTE over the existing staff levels would be needed to implement alternative A. The FTE presented in this plan are the full FTE needed to manage the concessions programs under each alternative; they do not represent the full staff of the park.

If the National Park Service hired additional staff, additional office space would be required, and would carry associated costs.

Costs to manage the commercial services program would increase under alternative A. However, the National Park Service would be able to recover much of its costs through fees. Alternatively, if staff positions were not funded, it is likely that other staff would be taken away from their normal duties to assist the commercial services program.

Alternative A would reduce operational efficiency. Increased oversight required to manage a potentially greater number of commercial service providers would take staff away from normal park operations, or require greater funding for staff—and would result in long-term, minor to moderate, adverse impact to park operations.

Cumulative Impacts

In addition to operational effort required due to alternative A, the National Park Service is undertaking some projects in the park that would require additional time from staff already working at full capacity. The road resurfacing project may require increased coordination with commercial operators as well as dedicated time from maintenance and law enforcement staff. Projects proposed through the Kīpahulu District comprehensive site plan and the telescope construction would also require staff attention and time during planning, construction, and ongoing operation. Combined with the effects of alternative A, these projects would result in short and long-term, moderate adverse cumulative impacts to NPS operations, due to the additional staff time required.

Conclusion

With increased numbers of commercial use authorizations, alternative A would reduce operational efficiency and result in long-term, minor to moderate, adverse impacts to park operations. Alternative A, combined with other projects occurring at the park, would result in increased demands on staff time, and increased funding needs for staff wages, resulting in short- and long-term, moderate, adverse cumulative impact to NPS operations.

ALTERNATIVE B

Analysis

Under alternative B, commercial services would be limited for astronomy, hiking, and horseback tours in comparison with alternative A, through a reduced number of tours per day and a reduced number of providers (except astronomy). Road-based vehicle tours would be managed through four concession contracts. While contracting for a concession operation would take more effort during initial implementation, as the contracts are generally for ten years, park staff would only go through the contracting process once every ten years, as opposed to every year under alternative A. Compared with alternative A, park staff would need to spend less time on commercial service issues, including program management, interpretation, law enforcement, and maintenance. While development of required training would take some time by staff, it is anticipated that the overall interpretation staff level would be reduced through guides being able to provide quality information to clients. With fewer commercial providers, the management of the program would be more efficient—a limited number of commercial providers is an advantage from a park management standpoint. The cost to operate the program would also be less than in alternative A.

By limiting tours, commercial visitors would be concentrated within available tours. This would also be operationally beneficial, because associated law enforcement, and maintenance needs would likely be reduced with fewer commercial vehicles. However, if demand for commercial tours were to exceed available tours, the result could be an increase in noncommercial visitors, as some visitors unable to participate in a commercial tour might rent vehicles to visit the park on their own. Noncommercial visitors may place greater demands on law enforcement and maintenance, given they would travel in smaller group sizes, therefore requiring more vehicles, thus increasing traffic and maintenance demands.

Franchise fees paid to the National Park Service would likely amount to more than the road-based vehicle tour companies pay currently for permit and entrance fees. This would benefit park operations, through additional funds available for park uses.

Alternative B would result in reduced staff time required to manage the program and therefore reduced funding needs, compared with alternative A. The alternative would result in long-term, minor, beneficial impacts to park operations.

Cumulative Impacts

In addition to operational effort required due to alternative B, the park staff is undertaking some projects that would require additional time from staff already working at full capacity. The road resurfacing project may require increased coordination with commercial operators as well as dedicated time from maintenance and law enforcement staff. Projects proposed through the Kīpahulu District comprehensive site plan would also require staff attention and time during planning, construction, and ongoing operation. The construction of a new telescope at the summit would require monitoring and coordination by park staff. However, given

the more efficient operations due to alternative B, combined with these other projects, would result in overall long-term, negligible, beneficial impacts to NPS operations.

Conclusion

Alternative B would result in reduced staff time required to manage the commercial services program and therefore reduced funding needs, compared with alternative A. The alternative would result in long-term, minor, beneficial impacts to park operations. Alternative B, combined with other projects occurring at the park, would result in more efficient operations and reduced funding requirements, resulting in long-term, negligible, beneficial cumulative impacts to NPS operations.

ALTERNATIVE C

Analysis

Under alternative C, commercial services would be limited for astronomy, hiking, and horseback tours in comparison with alternative A, through a reduced number of tours per day, a reduced number of providers), and reduced group size Road-based vehicle tours would be managed through three concession contracts. While contracting for a concession operation would take more effort during initial implementation, as the contracts are generally for ten years, park staff would only go through the contracting process once every ten years, as opposed to every year under alternative A. With the fewest commercial tour providers of the alternatives, alternative C would be easier to manage, and would require the fewest number of park staff. However, if demand for commercial tours were to exceed available tours, the result could be an increase in noncommercial visitors, as some visitors unable to participate in a commercial tour might rent vehicles to visit the park on their own Fewer people at sunrise would also reduce the interpretive staff needed and associated cost.

Franchise fees paid to the National Park Service would likely amount to more than the road-based vehicle tour companies pay currently for permit and entrance fees. This would benefit the park operations, through additional funds available for park uses.

Alternative C would require less funding than alternative A. The reduced commercial service management would result in greater operational efficiency, and therefore, long-term, minor to moderate, beneficial impacts to operations.

Cumulative Impacts

In addition to operational effort required due to alternative C, the park staff is undertaking some projects that would require additional time from staff already working at full capacity. The road resurfacing project may require increased coordination with commercial operators as well as dedicated time from maintenance and law enforcement staff. Projects proposed through the Kīpahulu District comprehensive site plan would also require staff attention and time during planning, construction, and ongoing operation. The construction of a new telescope at the summit would require monitoring and coordination by park staff. These projects, because of the additional staff time required, would result in negligible short-term adverse impacts. However, given the more efficient operations due to alternative C, combined together these projects would result in overall long-term, negligible to minor, beneficial impacts to NPS operations.

Conclusion

Alternative C would require less funding than alternative A. The reduced commercial service management would result in greater operational efficiency, and therefore, long-term, minor to moderate beneficial impacts

to operations. Alternative C, combined with other projects occurring at the park, would result more efficient operations, and reduced funding requirements, resulting in long-term, negligible to minor, beneficial cumulative impacts to NPS operations.

ALTERNATIVE D

Analysis

Under alternative D, while limits would be placed on the number of authorizations and tours per day for astronomy, hiking, and horseback tours, the limits are equal to or greater than 2009 levels, and the limits proposed in alternatives B and C. Road-based vehicle tours would be managed through five concession contracts. While contracting for a concession operation would take more effort, as the contracts are generally for ten years, park staff would at most go through the contracting process once every ten years, as opposed to every year under alternative A. Allowing interpretive bicycle tours would increase the demands on staff time related to commercial services. A greater number of law enforcement staff, to organize routes and minimize potential conflicts between bicyclists and other visitors, would be required for bicycle tours to operate safely in the park.

While unlike alternative A, there would be limits to the number of commercial providers; the staff needs would be greater because of bicycle tours, while the staff needs to manage the reduced number of road-based tour operators would likely be reduced. There would be more certainty with alternative D compared to alternative A, knowing that there would be limits to the numbers of commercial providers.

Franchise fees paid to the National Park Service would likely amount to more than the road-based vehicle tour companies pay currently for permit and entrance fees. This would benefit the park operations, through additional funds available for park uses.

The increased demands on staff time, increased number of staff, and associated additional costs would result in long-term, moderate, adverse impact to operations.

Cumulative Impacts

In addition to operational effort required due to alternative D, the park staff is undertaking some projects that would require additional time from staff already working at full capacity. The road resurfacing project may require increased coordination with commercial operators as well as dedicated time from maintenance and law enforcement staff. Projects proposed through the Kīpahulu District comprehensive site plan would also require staff attention and time during planning, construction, and ongoing operation. The construction of a new telescope at the summit would require monitoring and coordination by park staff. These projects, because of the additional staff time required, would result in negligible, short-term, adverse impacts. Combined with the proposals of alternative D, these projects would result in short- and long-term, moderate, adverse impacts to NPS operations.

Conclusion

Alternative D would require increased demands on staff time, increased number of staff, and associated additional costs, which would result in long-term, moderate, adverse impact to operations. Alternative D, combined with other projects occurring at the park, would result in increased demands on staff time and funding requirements, resulting in long-term, moderate, adverse cumulative impact to NPS operation.

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Consultation and Coordination

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PUBLIC AND AGENCY INVOLVEMENT

The National Park Service consulted with various agencies, organizations, and interested persons in preparing this environmental assessment. The process of consultation and coordination is an important part of this project. The public had three primary avenues by which it participated during the development of the commercial services plan: participation in public meetings; responses to newsletters; and comments submitted by regular mail and electronically through the NPS planning website.

PUBLIC MEETINGS AND NEWSLETTERS

Public meetings and newsletters were used to keep the public informed on the planning process. A mailing list was compiled of members of governmental agencies, organizations, businesses, legislators, local governments, and interested citizens.

Scoping within the National Park Service

Internal scoping meetings were held at Haleakalā National Park, Maui, Hawai'i from July 31 through August 3, 2006. The internal team for the development of the commercial services plan consisted of park staff, NPS Pacific West regional staff, NPS Denver Service Center staff, and consultants. The team worked collectively to

- identify the purpose and need for action regarding commercial services and concession use in Haleakalā National Park
- define the issues and concerns associated with commercial services, concessions, operations, and management
- describe the objectives of the commercial services plan
- identify the potential tools available to manage commercial services and concessions

Public Scoping Meetings

The public scoping process for this plan began on August 4, 2006, when the park staff issued a news release announcing the need and commencement of the commercial services planning process for Haleakalā National Park. Therein, the public, agencies, and organizations were invited to participate in two meetings with the planning team on October 17 and 18, 2006, at Hana and Pukalani on Maui, Hawai'i, respectively. Thirty-seven people attended the public meetings and provided comments. Fifty-four written comment letters were also received from individuals and organizations.

Comments from the meetings and a preceding newsletter fell into four topical groups: natural resources; public health and safety; visitor use and experience; and park management activities and funding/money. Natural resource issues focused on the degradation of trails, erosion, and trampling of vegetation especially through horse trailing, hiking, and informal trailing. Similarly, many took issue with the effects of bike and bus tours on public health and safety. These comments were countered by comments supporting hike, horse, bike, and bus tours, citing their record of service, safety, and stewardship of the environment.

Commenters also suggested specific actions to address issues regarding commercial services. These suggestions focused on providing more visitor facilities and services, limiting or eliminating certain commercial services, imposing additional fees, and rearranging tour schedules.

Newsletters

Four newsletters were published during the development of the commercial services plan. The first newsletter, kicking off the planning project, was published in September 2006. One hundred and twelve copies of the newsletter were mailed. The newsletter described the background of the planning effort, what a commercial services plan is, why it is needed, provided a schedule for completing the plan, and announced the two public meetings in October 2006. The public also was requested to provide their views on future commercial services in the park.

Newsletter #2 was published in February 2007. This newsletter summarized the scoping comments from the public meetings and the first newsletter.

Newsletter #3 was published in May 2008 after the safety stand-down on guided bicycle tours was initiated. The planning process had been delayed during the safety stand-down. This newsletter reinitiated the scoping process. The newsletter again described what a commercial service plan is, noted why the plan is needed, and provided a new schedule for completing the plan. The public was again requested to provide feedback on future commercial services in the park.

Newsletter #4 was published in March 2010. Ninety-five copies of the newsletter were mailed to individuals and organizations. This newsletter again noted why the plan was needed and summarized issues and concerns the planning team had received in 2006 and 2008. Four preliminary alternatives, including a "no action" alternative, were also outlined for managing commercial services at Haleakalā National Park. Several actions common to all of the alternatives were also identified. The public was asked to provide their views on the preliminary alternatives. In addition, the newsletter provided an updated planning schedule and announced two public meetings that would be held to discuss the preliminary alternatives.

Alternatives Public Meetings

Two public meetings were held on March 17 and 18, 2010, to allow the public to comment on the preliminary alternatives as shown in newsletter #4. Fourteen people showed up to the first meeting in Pukalani, and three people showed up to the meeting in Hana. The meetings were organized using interactive stations where commenters could discuss the different commercial uses and how they believed they should be managed. The community members who showed up overall had a positive reaction to the process. All ideas and suggestions were recorded on flip charts and are in appendix E.

No single viewpoint stood out, and no one alternative drew much support at the public meetings. Based on the oral comments and the written comments in response to newsletter #4, the primary issues and concerns people raised with the alternatives were the following:

- whether or not commercial guided trips should be provided in the park, with some people opposed to all guided trips and others supporting this use
- commercial service providers were concerned about the limits being proposed in the alternatives and whether they could successfully operate under the limits
- some were concerned about whether the alternatives would address the resource impacts they believe tour groups are having on the park's resources
- whether or not to permit bicycle tours in the park again, with some people opposed and others supporting this use
- there is a need for more cultural education of visitors and training of commercial service providers

CONSULTATION WITH OTHER AGENCIES/OFFICIALS AND ORGANIZATIONS

U.S. Fish and Wildlife Service

The National Park Service initiated Endangered Species Act programmatic section 7 consultation with the U.S. Fish and Wildlife Service in 2011 for all NPS management activities at Haleakalā National Park. The U.S. Fish and Wildlife Service agreed that work can continue on the *Commercial Services Plan* while this programmatic consultation proceeds. Although it is not anticipated, depending on the results of the programmatic consultation, additional mitigation measures may be incorporated into the plan to ensure protection of the listed species.

Section 106 Consultation

The park staff conducted multiple informal, face-to-face, Section 106 consultations with the Hawai'i state historic preservation officer (SHPO) and other interested parties from the start of the commercial services planning process:

- August 3, 2006—joint park Kūpuna group meeting with staff from the Hawai'i SHPO office present (consultation on the commercial services plan initiated)
- January 29, 2008—joint park Kūpuna group meeting with staff from the Hawai'i SHPO office present (status update on the plan)
- January 21, 2009—joint park Kūpuna group meeting (status update on the plan)
- November 16, 2009—joint park Kūpuna group meeting (consultation on draft plan alternatives)

Formal written consultation with the Hawai'i state historic preservation officer will occur during the public comment period for this environmental assessment.

CONSULTATIONS WITH NATIVE HAWAIIANS

As noted above, four consultation meetings were held with the park Kūpuna groups (traditional elders) during the course of the planning process.

AGENCIES, ORGANIZATIONS, BUSINESSES, AND PUBLIC OFFICIALS RECEIVING A COPY OF THIS DOCUMENT

FEDERAL AGENCIES

Air Force Research Laboratory
U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office

CONGRESSIONAL DELEGATION

Representative Mazie Hirono
Senator Daniel Akaka
Senator Daniel Inouye

STATE OF HAWAIʻI AGENCIES

Department of Hawaiian Home Lands
Department of Land and Natural Resources
  Division of Forestry and Wildlife
  Na Ala Hele
  Division of State Parks
  State Historic Preservation Division
Department of Transportation, Highways Division
Office of Hawaiian Affairs
University of Hawaii, Institute for Astronomy, Haleakalā

STATE AND LOCAL ELECTED OFFICIALS

Maui County Mayor
Maui County Council
  East Maui Member
  Upcountry Member
  Makawao-Haiku-Paia Member
Representative Kyle Yamashita
Representative Mele Carroll
Senator J. Kalani English

LOCAL AND REGIONAL GOVERNMENTAL AGENCIES

County of Maui
  Department of Parks and Recreation
  Planning Department
Maui County Cultural Resources Commission
Maui Police Department

ORGANIZATIONS AND BUSINESSES

The Boeing Company, Maui Space Surveillance System Complex
Central Maui Hawaiian Civic Club
East Maui Watershed Partnership
Friends of Haleakalā National Park, Inc.
Haiku Community Association
Haleakalā Ranch Company
Hana Community Association
Hana Ranch
Hawaii Natural History Association
Hawaii Visitors & Convention Bureau
Historic Hawaii Foundation
Hotel Hana-Maui
Kaupō Community Association
Kaupō Ranch Limited
Kīpahulu Community Association
Kīpahulu Ohana
Kimura International
Kula Community Association
Kula Lodge and Restaurant
Kula Market Place
Kula Sandalwoods
Maui Invasive Species Committee
Maui Land & Pineapple Company

Maui Outdoor Circle
Maui Tomorrow
Maui Visitors Bureau
Royal Order of Kamehameha I, Heiau O Kahekili IV
Sierra Club
Sunrise Country Market
The Nature Conservancy
Tri Isle RC&D
Ulupalakua Ranch

LIBRARIES

Hana Public School and Library
Kahului Public Library
Kihei Public Library
Lahaina Public Library
Makawao Public Library
Wailuku Public Library

MEDIA

This Week Maui
Honolulu Advertiser
Honolulu Star Bulletin
Maui News
Maui Bulletin, Inc
Maui Time
Maui Weekly
Haleakalā Times
Lahaina News
KAOI Radio Group
Pacific Radio Group
Hawai'i Public Radio
Mana'o Radio KEAO 91.5
KITV 4 (ABC)
KFVE 5
KGMB 9 (CBS)
KHNL 8 (NBC)
Akaku Maui Community Public TV
KHON 2 (Fox)

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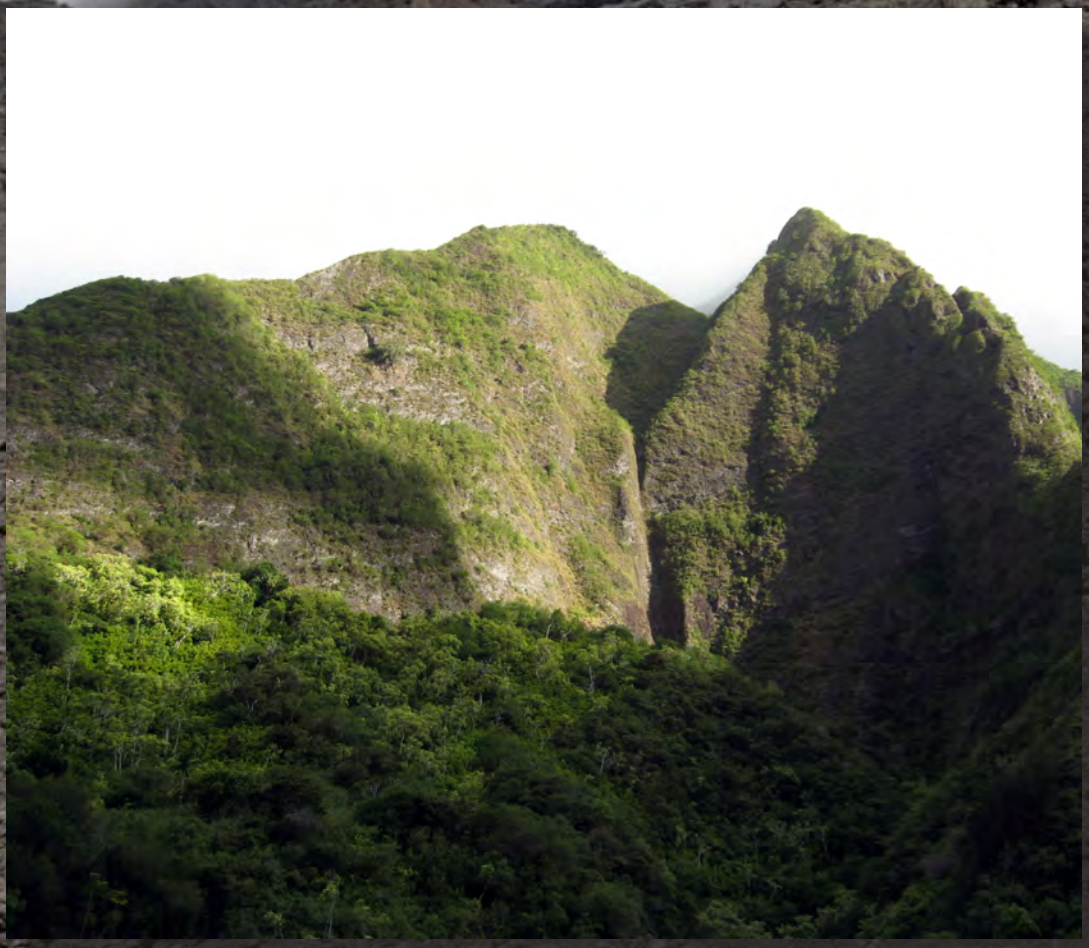
Appendixes, Selected References, Preparers and Consultants, and Index



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APPENDIX A: INTERIM OPERATIONS PLAN FOR SUNRISE

National Park Service
U.S. Department of the Interior

Haleakalā National Park
Office of the Superintendent

PO Box 369
Makawao, Hawaii 96768
808-572-4400 phone
808-5721304 fax

October 5, 2005

Commercial Use at Sunrise: Interim Operations Plan

Background

Haleakalā National Park has received an unprecedented increase this summer in visitors and congestion at the summit of the park for the Sunrise. More visitors are arriving via commercial companies with Incidental Business Permits as well as in non-commercial use vehicles. This increase in vehicles has raised significant public health and safety concerns at Pu'u'ula'ula (Red Hill/summit Observatory), Haleakalā Visitor Center (HVC) and Kalahaku Overlook parking areas in the summit area. There is limited space at these parking areas and Haleakalā Visitor Center is the only parking area with designated commercial vehicle stalls. Each day at Sunrise, about 35 non-commercial vehicles have been parking illegally outside of marked stalls and an additional 20 that are turned away for lack of space at HVC. At Pu'u'ula'ula, both commercial and non-commercial vehicles have been parking outside of stalls, in the traffic lanes or against the center median of the loop impeding traffic flow. The parking problem is often so severe that traffic has become gridlocked preventing access by ambulance, law enforcement and fire vehicles. Not only is this hazardous, it also violates laws requiring a clear route for emergency vehicles to and through parking areas to buildings and visitor use areas. The large number of vehicles translates into excessive crowds at viewing areas causing them to overflow into critical habitat areas, off-trail areas, and potential unsafe cliff areas.

The lack of emergency vehicle access problem is applicable at all three parking areas, and is especially critical to the Haleakalā Visitor Center parking area. More than one million people per year visit the 10,000 ft summit area of Haleakalā. Park Rangers respond to a variety of incidents including medical emergencies (cardiac arrest, heart attacks, seizures, respiratory emergencies, altitude illness, minor trauma, etc.) and law enforcement incidents. It is vital that unobstructed access, egress and emergency vehicle parking areas are maintained in these heavily used areas.

An Interim Operations Plan (IOP) is being implemented by the Park to accommodate the safe use of the limited parking available in the three parking areas at the summit area during the hours from pre-Sunrise through two hours after Sunrise ("Sunrise Use Period"). That accommodation will be accomplished by allocating the use of these limited spaces between commercial and non-commercial users as discussed below. The IOP will be in effect until a more permanent solution is identified through development of the Park's Commercial Services Plan (CSP). The CSP is anticipated to start mid-late 2006 with a completion date of two years later. This IOP may be subject to amendment should existing conditions change.

Decision

Based on the past five years commercial activity, Incidental Business Permit holders for bicycles have typically filled during the Sunrise Use Period ten of the thirteen available commercial stalls with the remaining three going to all other permit holders (astronomy and vehicle tours). This ratio will remain in effect during the term of this IOP. Commercial use vehicles that can fit in a standard-sized vehicle stall will also be able to park at Pu'u'ula'ula summit Observatory and Kalahaku Overlook parking areas as space is available. As vehicles are restricted to marked parking stalls, and if crowding at summit and Kalahaku lots continue to increase, the park may look at ways to ensure that space continues to be available for non-commercial use users.

Commercial operators with Incidental Business Permits for vehicle tours are currently limited to two vans or small buses. No large passenger or school buses (26 passengers and over) will be permitted until two hours after Sunrise.

Commercial operators with Incidental Business Permits for bicycle tours are limited to a total of ten commercial stalls. By manipulating vehicles and trailers, nineteen vans with trailers can be accommodated in these ten stalls without impeding traffic. These nineteen tours will be distributed among the current five companies authorized for Sunrise tours—Bike It Maui, Cruiser Phil's, Maui Downhill, Maui Mountain Cruisers, and Mountain Riders, as follows:
These will be distributed each calendar year based on market share of the previous year. The three companies with the largest market share of tours will receive five tours each with the fourth company receiving three tours and the fifth company receiving one tour.
Bike tours will continue to use the ten stalls closest to the exit of Haleakalā Visitor Center parking area with the first ten pulling into each stall and the remaining nine parking perpendicular to the first ten in three lines of three vans and trailers.
Parking Vehicles/Vans on the Spur Road, dropping trailers on Spur Road, or parking vehicles, vans, or trailers in any area other than a marked parking stall is not allowed.
For up to two hours after Sunrise, the nine perpendicular parked vans/trailers may park and/or drop their trailer in the private vehicle parking area as space permits until such time their designated commercial stall becomes available.
This allowance to park in non-commercial use vehicle stalls for two hours after Sunrise is for this interim period only.

Incidental Business Permits / Commercial Use Authorizations

Commercial Sunrise tours/activities originating and terminating outside of the Park currently are authorized only if an Incidental Business Permit (IBP) has been issued to the commercial operator by the Park. That system of authorization may be replaced during the operation of the IOP with a system of Commercial Use Authorizations (CUAs) issued under the statutory authority of the 1998 Concessions Management Improvement Act.

Use of the limited parking available during the Sunrise Use Period was allocated to accommodate safe use by all users prior to this IOP by freezing at 2003 levels the number of IBPs authorizing bicycle tours during the Sunrise Use Period. That allocation also will continue through limitations on the issuance of IBPs and CUAs while this IOP is in effect.

Implementation

August 21, 2005: Commercial operators with Vehicle IBPs

Exception # 1: Haleakalā Bike Company is allowed 2 vans & 1 small bus

November 1, 2005: Commercial operators with Bicycle IBPs

Interim Operations Plan may be revised based on circumstances and experiences.

For example, if small buses (16-25 passengers) can no longer be accommodated at Kalahaku Parking area and/or vans (15 passenger) at Pu'u'ula'ula /Summit Observatory or Kalahaku parking areas, the IOP may be revised to change the ratio at Haleakalā Visitor Center to nine stalls for bicycle permit holders and four stalls for all other commercial vehicles. This would then change the number of Sunrise bicycle tours from 19 to 15. These will be distributed based on market share of the previous year. The three companies will the largest market share of tours will receive four tours each with the fourth company receiving two tours and the fifth company receiving one tour.

Point of Contact

Additional information or comments about the commercial use operations should be directed to Commercial Use Manager at 808-572-4440.

Marilyn H. Parris
Superintendent

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APPENDIX B: FINDINGS OF SAFETY BOARD OF REVIEW

Board of Review
Management Report and Action Plan

Commercially Guided Bicycle Tours
NPS Safety Analysis Report
Haleakala National Park

Recommended: Patricia L. Neubacher Date: 2/22/08
Patricia L. Neubacher
Deputy Regional Director, Pacific West Region
Board of Review Chair

Approved: Jonathan B. Jarvis Date: 3/10/2008
Jonathan B. Jarvis
Regional Director, Pacific West Region

February 22, 2008

NATIONAL PARK SERVICE

UNITED STATES DEPARTMENT OF THE INTERIOR

Board of Review Members

Patricia L. Neubacher, Deputy Regional Director/Chief of Staff
Pacific West Region, National Park Service
Board of Review Chair

Cicely Muldoon, Deputy Regional Director
Pacific West Region, National Park Service
Safety Analysis Team Lead

Scott Wanek, Chief Ranger
Pacific West Region, National Park Service
Safety Analysis Team, Lead Investigator

Anne Dubinsky Altman, Chief of Concessions
Pacific West Region, National Park Service

Marilyn Parris, Superintendent
Haleakala National Park

C. Mahina Martin, Community Relations & Communications Director
Maui County, Office of the Mayor (ex officio)

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Background & Findings

The Board of Review for the *NPS Safety Analysis Report: Commercially Guided Bicycle Tours, Haleakala National Park* convened on February 4-5, 2008, in the Pacific West Regional Office in Oakland, California.

The Board reviewed the report from the Safety Analysis Team and developed recommendations and an action plan to address the future management of commercial bicycle tours at Haleakala National Park.

BACKGROUND

On September 26, 2007, a bicyclist on a commercial bicycle tour lost control of her bicycle on the downhill run from the crater parking area and was struck and killed by a vehicle operated by another commercial bicycle tour. This was the second fatality of a commercial bicycle tour client in the park within a 12-month period. Three other serious injuries occurred within this same 12-month period, one a near fatality.

The National Park Service places a high priority on public injury prevention. While the National Park Service does not guarantee visitor safety nor is it responsible for acts and decisions made by visitors that may results in injury or illness, it does have a responsibility to identify public safety hazards and risks, and to determine how, and to what extent, these risks can be mitigated.

In keeping with that responsibility and consistent with applicable legal authorities, Superintendent Marilyn Parris ordered an emergency safety stand down of all commercially guided bicycle tours following this recent fatality, and requested that Regional Director Jonathan B. Jarvis appoint a team to conduct a safety analysis of these tours.

On December 10, 2007, a Safety Analysis Team convened at the park to conduct a risk-based assessment of this activity. The team interviewed park staff, bicycle tour company personnel, bicycle tour clients, and local hospital and EMS workers. The team reviewed historical information including tour company permits, accident reports, and safety information provided by the commercial bicycle tour companies. The team also reviewed a 1999 NPS root cause analysis, a 2007 Department of Transportation safety report on this activity at the park, and other information provided by the park. Finally, the team compared this commercial activity to a number of potentially high-risk commercial activities on other public lands to provide context. Based on this information, the Safety Analysis Team conducted a risk assessment of the activity.

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The Safety Analysis Team concluded that commercial bicycle tours at Haleakala National Park, as operated and managed prior to the safety stand-down and as measured by the "Green-Amber-Red" risk model process, posed moderately high risks to the tour participants. In evaluating the risk categories, the team identified a range of operational and managerial actions that the team believed could reduce the risk of this activity. The Board of Review evaluated the Safety Analysis Team's draft report and came to the following findings:

BOARD OF REVIEW FINDINGS

1. **Commercially guided bicycle tours at Haleakala National Park, as operated and managed prior to the safety stand-down, pose an unacceptably high risk to park visitors.** Although the accident rate for this activity decreased significantly between 2000 and 2001, when the park mandated additional controls for the activity, and has remained stable ever since, commercially guided bicycle operations consistently result in 60 participant injuries within the park annually. This number of injuries exceeds injury rates in other comparable commercially guided recreational activities.

2. **Additional management and operational changes to this activity may mitigate this risk to an acceptable level.** Management controls instituted in 2001 following the NPS Root Cause Analysis in 1999 appear to correlate directly to a significant decline in accident rates that has been sustained, even as the numbers of tour participants have increased. Additional controls instituted in 2005 reduced the number of tours, which reduced participant numbers from a high of 105,000 to a steady 90,000 participants annually. Finally, different bicycle companies have different accident rates, indicating that specific management practices influence the safety of the activity. The Board directed that a number of bicycle tour operational changes (see below under "Minimum Operating Conditions") be further developed by Haleakala National Park staff with the assistance of regional concessions staff for consideration by the superintendent and regional director. These operational changes would be designed to reduce participant risk in each of the risk categories identified by the safety analysis team.

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Actions

1. **Final Safety Analysis Report:** The Board reviewed the Safety Analysis Team's draft report in depth and concurred with the team's findings. The Board requested that a number of clarifications and technical corrections be incorporated into the final report. The team will incorporate the Board's comments into the draft report, add data where requested, and provide a final report to the Board no later than February 28, 2008.

2. **Commercial Services Plan:** The Board concurred that the long term future of commercial bicycle operations would be evaluated in the ongoing Commercial Services Plan process for Haleakala National Park. The Commercial Services Plan process is underway, includes public participation, and is estimated to be complete in 2009.

3. **Minimum Operating Conditions:** The Board directed the park and regional concessions staff to develop a specific set of operating conditions identified in the Safety Analysis Report for commercial bicycle tours that could result in a safer tour at Haleakala National Park. The park and regional team will develop these specific conditions over the next month. It was noted that some of these proposed standards may require additional NPS oversight, so would require cost recovery from the permitees. Next steps in this process are as follows:

    - **Minimum Standards Proposal:** Based on the risk assessment model, the Board identified a series of specific factors that would constitute the minimum standards for a safer commercial bicycle operation, and identified for each the responsible party (NPS or Company). Those that are identified as an NPS responsibility refer to Haleakala National Park staff as the lead with regional concessions staff assisting, and will be developed into a proposed operating model by March 10, 2008.

    Those identified as a company responsibility would be posed to the bicycle companies to develop operational procedures that meet these minimum standards.

        1. Evaluate total group size and guide/client ratio, develop standard that limits group size and increases the guide to client ratio to improve supervision and communications. (NPS)

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2. Evaluate the number of trips per day. Prior to the safety stand-down there were 40 trips/day, 19 of which were at sunrise (the 2005 Interim Operations Plan has already reduced the number of sunrise trips from 36 to 19). Evaluate the spread of trips throughout the day, particularly the number at sunrise, to reduce congestion and slow the pace of the trips. (NPS)

3. Establish a standard that all guides leading trips must have ready access to a supervisor. Each company would propose the method, whether on site supervision or some other form of supervisory oversight.

4. Establish a minimum standard for go/no go decision, which should be made by individual companies at an appropriate supervisory level (above the guide level). Each company would propose how they will make the go/no go decision for both individual participants in the trip, and for the trip itself based on weather or other factors. NPS would develop a checklist for evaluating weather conditions, set thresholds for wind speed/temperature, and consider tools that would assist in this decision, such as visible wind sock/temperature gage at the crater parking area.

5. Establish permit condition prohibiting third party bookings. This provides the opportunity for clients to get accurate, consistent information directly from the companies about the trip, and determine if the trip is a good fit for their abilities. (NPS)

6. Require companies to develop and the NPS to approve material provided to clients; the NPS would set minimum standards for content; this may include a self screening questionnaire to assist both clients and companies in identifying client suitability for the activity.

7. Require companies to establish and the NPS to review minimum training standards for guides. Each company would propose safety training material to the NPS for review.

8. Require companies to have transportation available with a pre-determined response time to transport clients with minor injuries. This would reduce transport pressure for minor injuries for Maui Emergency Medical Services, and lessen the burden on health care system. Each company would propose how this would work.

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9. Improve communication between guides and clients. At a minimum, brake lights would be required on all bikes; companies may consider wireless headsets, or other means to improve communications during the ride. Each company would propose methods to improve communication.

10. Improve test ride as one of the client screening elements, and require that the test ride, equipment check, and equipment fitting occur before the clients arrive at the park. Each company would propose how to accomplish this.

11. Require companies to establish a reasonable refund policy (minimum 50%) for clients who opt out at the summit, reducing the pressure for clients to proceed with the ride even if they feel unprepared/unsuited to initiate or complete the ride. Each company would propose how this would work and would be required to provide refund policy information in the pre-trip packet; NPS would approve refund policy.

12. NPS would paint the curbs to improve visibility. Park will evaluate costs and if this is in the park's cyclic maintenance plan. (NPS)

13. NPS will evaluate holding bicycle launches at the summit until the sunrise surge has cleared out to reduce vehicle/bike interactions during a period of high congestion. NPS will determine launch intervals affiliated with this, and each company would propose how to ensure visitor comfort during this holding period.

14. NPS will evaluate existing information provided to all visitors related to bicycles on the road, and will assess if this information can be improved to increase awareness among all visitors about the presence of bicycles and the rules of the road.

15. Require bicycles to stop at every pullout between the summit and park headquarters to reduce the pace of the trip, provide park information, and check in on how each client is doing. The trips would stop at the following areas, at a minimum: Kalahaku, Leleiwi (park will determine if restroom area or parking area), and park headquarters. Interpretive information provided by company at these stops would be approved by the park. Park will confirm that these are the only pullouts available.

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APPENDIX C: IMPLEMENTATION OF BOARD OF REVIEW FINDINGS

National Park Service
U.S. Department of the Interior

Haleakalā National Park

P.O. Box 369
Makawao, HI 96768
808-572-4400 phone
808-572-1304 fax

Superintendent's Decision on
Implementation of Board of Review Findings and Recommendations
Concerning
Safety Analysis of Commercially Guided Downhill Bicycle Tours
at Haleakalā National Park

The Board of Review Management Report and Action Plan (March 10, 2008) ("Board of Review Report") concerning the NPS *Safety Analysis Report: Commercially Guided Bicycle Tours, Haleakalā National Park*, directs Haleakalā National Park ("park") staff to develop certain information for consideration by the park Superintendent and the Regional Director. This information is to consist of specific operating conditions that may mitigate the risk to park visitors posed by commercially guided downhill bicycle tours in the park.

Any such operational changes ultimately must address park-specific conditions and be capable of being implemented by the park through legally permissible authorizations. As such, the park Superintendent has the authority to and will decide whether or not specific operating conditions should be implemented at this time through the issuance of authorizations for commercial activity in the park.

While developing the requested information, park staff identified possible additional impacts to visitor safety that may result from implementation of actual, on the ground conditions for commercial operation of these tours in the park. Park staff also identified other impacts of such implementation that may extend beyond safety to having effects upon resources and values of the park.

Consistent with National Park Service policy and applicable legal authorities, the National Park Service must evaluate these impacts in order to determine whether the impacts are acceptable and legal authority is available for authorizing in-park commercial activity that would cause the identified impacts. A planning and environmental analysis process currently is underway at the park to evaluate commercial services in the park. This on-going commercial services planning process is available to the National Park Service as a means of evaluating the impacts on park resources and values of the possible risk mitigating operating conditions suggested in the Board of Review Report.

Based on the information available at this time to the deciding official regarding this matter, the Park Superintendent makes the following decisions:

1. The National Park Service will use the park's on-going commercial services planning process (which is being conducted in compliance with all National Park Service policies regarding planning and environmental analysis) to evaluate the impacts on park resources and values of the possible risk mitigating operating conditions suggested in the Board of Review report. To assure that this planning process adequately addresses these concerns, scoping of the commercial services plan will be re-

initiated, to allow more input (including from the commercially guided downhill bicycle tour operators) on the alternatives to be considered.

2. Until such time as the commercial service planning process is completed, no further action will be taken to determine and implement operational changes in-park for the commercially guided downhill bicycle tour operators.

3. The current safety stand down of all commercially guided downhill bicycle tours in the park will continue until such time as a final decision is made, using the commercial services planning process, on whether or not in-park commercially guided downhill bicycle tours will be authorized by the National Park Service.

4. The allocation to commercial users of the limited parking available at the Haleakalā summit during the sunrise use period that is set out in the 2005 Commercial Use at Sunrise: Interim Operations Plan ("IOP") is modified as follows: the ten commercial stalls formerly used by commercially guided downhill bicycle tour operations are reallocated for use during the remaining term of the IOP to use by those operations solely for in-park vehicle-or road-based tours (*i.e.* with no authorization to provide in-park commercially-guided downhill bicycle tours). Such use will be authorized by CUAs, which must be applied for by the formerly authorized commercially guided downhill bicycle tour operations and will be distributed each calendar year based on market share as previously provided in the IOP for those bicycle tours.

_____ _____

Marilyn H. Parris Date
Superintendent Haleakalā National Park

APPENDIX D: ORAL COMMENTS FROM THE PUBLIC MEETINGS ON THE PRELIMINARY ALTERNATIVES

The following comments were recorded on flip charts at the March 17 and 18, 2010, public meetings at Pukalani and Hana on the preliminary alternatives. The comments are organized by the interactive station where individuals provided comments, and then by location.

TALK STORY WITH SARAH STATION:

Pukalani

Socioeconomic/facility effects of the county of Maui and local communities must be analyzed in the EA/NEPA document (traffic, restrooms, staging area, food concessions, picnic areas)

Set a capacity for horses in the crater

Radio Horse tours

BIKE STATION:

Pukalani Meeting

Need additional data analysis on bicycle accident reports that will produce screening requirements (e.g. height, age, medical conditions, etc.) for minimum standards for bike clients. The responsibility to enforce this should be on the tour companies not the park.

Bike riders should have to sign a statement/waiver alerting them of the actual number of severe causalities and death that occur from the activity.

Bike riders should have to waive responsibility to sue the federal government.

There should be a series of restrooms along the bike path with a toilet and a bench about every 2 miles. And there should be a fee system to charge the bike companies for these amenities.

Bike tours should remain guided with no bikes riding on their own.

The bike tour ratio for client to guide should be 9/1. Five clients in a group would not be financially feasible.

If there is a required 15 minute between bike launches there would need to be a system to monitor and communicate between tour guides.

There should be a required stop along the bike path (possibly Leleiwi) if there is another group there the group would have to wait 3 minutes after the other group leaves. This would ensure spacing all the way down.

Hana Meeting

No bikes at summit, too dangerous
As a driving teacher, Dean Wariner, I feel the Park Service should continue to restrict bicycle use of the park road. Such use is a danger to the riders and motorists unfamiliar with these conditions. Weather often obscures vision and inexperienced riders can be badly injured.

ROAD-BASED TOURS

Pukalani

The park should replace all vehicle traffic with a shuttle system

Bus tours should accurately reflect Native Hawaiian and Leave No Trace Ethics

Bus tours should greet clients with a chant (ole) to welcome visitors to the park

Alternative C – Road Based Tours- is too restrictive. This may cause operators to fail.

Hana

More cultural education

Have mandatory training for park and CUA staff that has approved cultural information from the Native Hawaiians (staff and community/kupuna)

Make training worthwhile for cultural trainers (trainers should be paid)

Communicate proper cultural messages across the board.

Have certified cultural trainers for NPS staff and CUAs

Charge the CUA holders an extra fee for the educational cultural component

Concern about access for Native Hawaiian gathering rights at the ocean in Kipahulu and Nu`u

HORSES

Pukalani

Should concessions be addressed in a CSP?

Comment card got sent back to sender and not to Denver.

6 horses is not economically feasible for horse tour operators - the cost per rider would be too high, which would negatively affect visitor experience.

If tours are priced too high, people cannot use the service then operator will fail and this limits people's ability to use the service.

The park should assess the economic impact of a commercial operator failing—the commercial revenue stream fails.

Commercial operators provide a service to the park because they help supervise visitors and resources.

By limiting commercial days, some people who are here for only a few days may not be able to visit the park. This is in conflict with the park's mission.

Horse groups limit themselves to 10 horses per group—it's difficult to get more than 10 horses to the summit at a time (horse transport). Alternative D could easily be changed to summit groups limited to 10 horses.

Hana

More cultural education

There should be an alternative with no horses. People should go on there own steam. The park is a sacred place—Ron Montgomery

Horse rides should be a cultural tour not just a scenic tour

Provide training in culture 'true' story

HIKING AND ASTRONOMY STATION

Hana

Uncle Lyons likes alternative C – hiking

4 visitors in Hana "cool" with commercial services offered at Haleakalā National Park

COMMUNITY MEMBERS IN ATTENDANCE:

Pukalani

Harry Eagar, Ron Montgomery, Phil Feliciano, Clark (can't read last name), Matt Wordeman, Doug Smith, Mary Evanson, Vickie Goodenough, Richard Goodenough, Bill Evanson, Chad Meyer, Dick Mayer, Dave Campbell, Kathy Campbell

Hana

Kahu Lyons Naone, Pomai Konohia, Dean Wariner

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APPENDIX E. LIST OF FEDERAL CANDIDATE, ENDANGERED, AND THREATENED SPECIES IN HALEAKALĀ NATIONAL PARK 2010

Scientific Name	Common Name	Federal Status Classification	Taxon
Oceanodroma castro	band-rumped storm-petrel	Candidate	Birds
Anas wyvilliana	Hawaiian duck	Endangered	Birds
Branta sandvicensis	Hawaiian goose	Endangered	Birds
Palmeria dolei	crested honeycreeper	Endangered	Birds
Pseudonestor xanthophrys	Maui parrotbill	Endangered	Birds
Pterodroma phaeopygia sandwichensis	Hawaiian dark-rumped petrel	Endangered	Birds
Hemignathus lucidus	nukupu`u	Endangered	Birds
Loxops coccineus ochraceus	Maui akepa	Endangered	Birds
Melamprosops phaeosoma	po`ouli	Endangered	Birds
Psittirostra psittacea	`o`u	Endangered	Birds
Megalagrion pacificum	Pacific Hawaiian damselfly	Endangered	Insects
Lasiurus cinereus semotus	Hawaiian hoary bat	Endangered	Mammals
Monachus schauinslandi	Hawaiian monk seal	Endangered	Mammals
Bidens campylotheca pentamera	ko`oko`olau	Candidate	Plants
Bidens campylotheca waihoiensis	ko`oko`olau	Candidate	Plants
Calamagrostis expansa	reedgrass	Candidate	Plants
Cyanea asplenifolia	haha	Candidate	Plants
Cyanea kunthiana	haha	Candidate	Plants
Geranium hanaense	nohoanu	Candidate	Plants
Huperzia stemmermanniae	wawae`iole	Candidate	Plants
Joinvillea ascendens ascendens	`ohe	Candidate	Plants
Microlepia strigosa mauiensis	Maui fern, palapalai	Candidate	Plants
Phyllostegia bracteata	bracted phyllostegia	Candidate	Plants
Schiedea pubescens	ma`oli`oli	Candidate	Plants
Bidens micrantha kalealaha	ko`oko`olau	Endangered	Plants
Clermontia samuelii	`oha wai	Endangered	Plants
Ctenitis squamigera	pauoa	Endangered	Plants
Cyanea copelandii haleakalaensis	haha	Endangered	Plants
Cyanea glabra	haha	Endangered	Plants
Cyanea hamatiflora hamatiflora	haha	Endangered	Plants

Scientific Name	Common Name	Federal Status Classification	Taxon
Diplazium molokaiense	Molokai twinsorus fern	Endangered	Plants
Geranium arboreum	Hawaiian red-flowered geranium	Endangered	Plants
Geranium multiflorum	nohoanu	Endangered	Plants
Huperzia mannii	wawae`iole	Endangered	Plants
Ischaemum byrone	Hilo ischaemum	Endangered	Plants
Melicope ovalis	alani	Endangered	Plants
Plantago princeps	kuahiwi laukahi	Endangered	Plants
Schiedea haleakalensis	Haleakala schiedea	Endangered	Plants
Argyroxiphium sandwicense macrocephalum	Haleakala silversword	Threatened	Plants
Ranunculus mauiensis	makou	Candidate	Plants
Asplenium fragile insulare	diamond spleenwort	Endangered	Plants
Clermontia lindseyana	`oha wai	Endangered	Plants
Clermontia oblongifolia mauiensis	`oha wai	Endangered	Plants
Clermontia peleana	`oha wai	Endangered	Plants
Cyanea grimesiana grimesiana	haha	Endangered	Plants
Melicope balloui	alani	Endangered	Plants
Platanthera holochila	Hawai‘i bog orchid	Endangered	Plants
Schiedea hookeri	sprawling schiedea	Endangered	Plants
Chelonia mydas	green sea turtle	Threatened	Reptiles
Alectryon macrococcus	mohoe	Endangered	Plants

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