

Biscayne National Park Fishery Management Plan

Biscayne National Park, in conjunction with the Florida Fish and Wildlife Conservation Commission (FWC), is developing a Fisheries Management Plan (FMP) designed to guide management of fishery resources and fishing experience in the Park. A Park General Management Plan (GMP) is also being developed through a separate process and is not addressed in this newsletter. The FWC does not have a role in the development of the GMP.

The first series of public scoping meetings on the Park's FMP were held last May. We are now ready to hold a second series of public meetings to get your input and feedback on our progress to date. **These public meetings are to be held during the week of April 8-10, 2003. Please see the information in Section 1 below for details on the time and location of these meetings.** The Park and FWC need your input to develop the FMP. Please attend these meetings or provide your comments through response to this newsletter.

This newsletter will:

1. Update you on our progress and what's to come (Section 1), and,
2. Introduce you to a series of alternative draft statements of "Desired Future Conditions" that, once final statements are selected, will be used to guide future management actions (Section 2). *These statements of "Desired Future Conditions" will be further discussed at the public meetings.*

Your input is important! To learn how to make your opinions heard, please read on...

Section 1 – Update on FMP Development

October 2002 - The Park and the FWC Establish a Memorandum of Understanding

In October 2002, the Park and the FWC established a Memorandum of Understanding (MOU) to work cooperatively to produce a FMP that will guide the management of fisheries and fishing experience in the Park for the next five years. The improved communication and coordination between the Park and the FWC will facilitate the management, protection, and perpetuation of fish and aquatic resources within the Park.

May 2002 - Public Scoping Meeting

In May 2002, a series of public "scoping" meetings was held to get your opinions on fish and aquatic resource issues. Hundreds of comments were received during these meetings and from comment cards returned during the public comment period (April 22 – June 17, 2002). These comments have been summarized and will be presented during the next public meetings scheduled for April 8-10, 2003 (summary comments can be obtained by sending a request via email to Bisc_Fisheries@nps.gov, or via a letter addressed to Biscayne Fisheries, Biscayne

National Park, 9700 SW 328th St., Homestead, FL, 33033). Issues that were frequently mentioned in public comments include:

- *overfishing,*
- *habitat conservation,*
- *levels of recreational and commercial use of the Park, and*
- *enforcement of current regulations.*

Other issues often mentioned include water quality, freshwater canal discharges, and overpopulation/over-development. While these issues affect resident fish and shellfish communities, they occur or are governed by decisions outside of the Park boundary and will be considered in other planning documents [including the Park's General Management Plan and the Comprehensive Everglades Restoration Plan (CERP)]. Public comments continue to be solicited to guide FMP development (see "*Where are we now, and where are we going?*").

July 2002 Technical Steering Committee Workshop

In July 2002, the NPS and FWC met to look at public comments and determine how the FMP would be organized. Fourteen fishery issues of high importance to the management of Park fishery resources and the fishing experience were identified. These important issues are intended to be used as the core of the FMP and to guide future management decisions. For each of these important issues, we have developed a range of potential "desired future condition" statements for the public to consider. (See Section 2 of this newsletter for more detail).

Where are we now, and where are we going?

We need to be sure we haven't omitted any important fishery management issues, or chosen issues that should be modified or excluded from consideration. We also need to gain input on the potential desired future conditions we have identified, to identify other potential desired future conditions we haven't recognized, and determine how best to measure whether these conditions are being met now and in the future. Finally, we need to gain input on the management approaches we have identified. **We need your help.**

A series of public, open house meetings will be held April 8-10, 2003 to obtain public comment on the issues described above.

The meetings will occur from 3-8 p.m. on the following dates and places:

- Tuesday, April 8 – Crowne Plaza Hotel, 950 NW LeJeune Road, Miami
- Wednesday, April 9 – Keys Gate Golf and Tennis Club, 2300 Palm Drive, Homestead
- Thursday, April 10 – Westin Beach Resort, 97000 S Overseas Highway, Key Largo

Presentations will be made at 4 p.m. and 6:30 p.m. at each of these meetings.

Based on public comment and available data, the Park and the FWC will utilize the draft statements of “Desired Future Conditions” as a framework for building Alternatives to be further analyzed and assessed within an Environmental Impact Statement (EIS) for the FMP. A preferred alternative will be presented in a draft EIS. We will then initiate another set of public meetings and a public comment period to gather further comment from the public before developing the final FMP/EIS.

Your opinion is important!

We value your knowledge and input. Please share your insights with us. We hope to hear from you! As outlined in the cover letter, you can give us comments at the public meetings, by return of the enclosed comment card, by sending a letter to Biscayne Fisheries, Biscayne National Park (9700 SW 328th St., Homestead, FL, 33033), or by sending an email to Bisc_Fisheries@nps.gov.

Section 2 – Identifying “Desired Future Conditions”

Introduction:

In this section, we present fourteen fishery issues we have identified (with your input) as being of high importance to the management of Park fishery resources and the fishing experience at Biscayne National Park. These important issues are intended to be used as the core of the FMP and to guide future management decisions. For each of these important issues, we have developed a range of “potential desired future condition” statements for the public to consider. The issues are listed under four main categories: (I) populations of exploited fish and shellfish, (II) commercial fishing activity, (III) habitat condition, and (IV) recreational fishing experience.

For each issue, we have listed **background information** summarizing the current status of the issue and why we feel it may be important to guide management. Following the background information are 2-3 **potential statements** of a “desired future condition” for that issue, as well as a statement asking you to suggest other desired future condition statements on the comment card we have provided. In addition to the 2-3 potential “desired future condition” statements listed, each issue also contains a no-action alternative that is not listed. The no-action alternative means that no new management actions would be taken to prevent the decline, maintain, or facilitate the improvement of current conditions (there is space on the comment card to choose this “desired condition” if you feel it is suitable). Following the potential desired future condition statements, the types of **management actions** that would likely be taken to accomplish the desired future conditions under that issue are discussed. Lastly, we present the anticipated **assessment measures** that would be used to determine whether desired conditions under that issue are being met.

Your task is to help us determine (1) whether we have chosen the correct important issues, (2) what the desired future condition for each of these issues should be, (3) what management actions we should undertake to reach these desired future conditions, and (4) what type of data (assessment measures) we should collect to determine whether the desired future conditions are

being met. **Your comments and alternative suggestions on all of this information are encouraged, and can be written on the provided comment form.**

DRAFT ALTERNATIVE STATEMENTS OF “DESIRED FUTURE CONDITIONS”:

I. POPULATIONS OF EXPLOITED FISH & SHELLFISH

FISHERY ISSUE 1.

The abundance and average size of fish (that are subject to take and spend a significant portion of their lives within the Park) relative to those fish in similar fished habitats outside the Park

Background: Both the Park and the FWC feel that the abundance and average size of fish caught within the Park compared to those caught in areas outside the Park may be an important issue to consider with regards to the Park fishery. Sampling data has shown that abundances and size of many species do not differ between the Park and similar fished habitats outside the Park, and that for many fished species current populations both within and out of the Park are significantly fewer in number and smaller than they have been historically. In some cases, Park resources appear to be in worse condition than in surrounding areas. For example, a reef fish visual census performed in 2002 indicated that mean sizes of some groupers and snappers are smaller in the Park, relative to similar areas outside the Park.

Potential desired future conditions:

- A:* Abundance and average size of fish in the Park are maintained at or above levels in similar fished habitats outside the Park (in southeast Florida). New, Park-specific management actions would be enacted only if the current abundance and size of fish were to decline relative to similar habitats outside the Park.
- B:* Abundance and average size are increased to and maintained at least 10% above those in similar fished habitats outside the Park (in southeast Florida). New Park-specific management actions would be required to insure that Park stocks achieve and remain at or above target conditions.
- C:* Abundance and average size are increased to and maintained at least 20% above those in similar fished habitats outside the Park (in southeast Florida). New Park-specific management actions would be taken as necessary to insure that Park stocks achieve and remain at or above target conditions.
- D:* *Your suggested Desired Future Condition – indicate on comment form under #1 (Other) or under the “Other comments” section (back of comment form).*

Potential Management Actions: A range of management actions would be considered to accomplish the potential desired future conditions listed above. These actions would vary with the alternative “desired condition” chosen but would grow progressively more stringent from A (minor) to C (considerable). Such actions could include: increases in minimum size limits, decreases in bag limits, limiting the number of recreational and/or commercial fishers, reductions in bycatch beyond those described below, and/or seasonal or spatial closures. Specific actions would likely be species-specific. The least restrictive measures necessary would be used.

Assessment Measures: Data on abundances and size distributions will be collected through fishery-independent methods (e.g., visual census, trawl/seine/trap surveys) and fishery-dependent methods (catches and landings based on recreational creel surveys and reported commercial landings). Comparisons of populations inside versus outside the Park will be made using statistical tests and simulation models.

Caveats: It is recognized that the stated “desired conditions” under this issue may not apply to all species equally. Some species do not reside within the Park for long periods of time and therefore would not be influenced by Park management regulations alone. In some cases, a successful increase in one species may result in a corresponding decrease in an associated species. Observed changes in population abundance and average fish size will be evaluated against all factors potentially influencing the population before fishery management actions are taken to achieve stated desired conditions.

FISHERY ISSUE 2.

Future abundance and average size of fish within the Park (that are subject to take and spend a significant portion of their lives within the Park) relative to current levels

Background: The fishery resources in the Park support diverse recreational and commercial fisheries. Available data suggests that numerous fish stocks in the Park are heavily exploited and/or overfished, and have declined from historical levels. Relative to historical levels, there are few large fish. Six species of fish that occur in Park waters (goliath grouper, Nassau grouper, gag grouper, black grouper, vermillion snapper, and yellowtail snapper) are listed as overfished in South Atlantic waters by the South Atlantic Fishery Management Council (2001). A reef fish visual census performed in 2002 indicated that mean sizes of some groupers and snappers are smaller in the Park relative to areas outside the Park that experienced lower fishing pressure. Therefore, the Park and the FWC feel it may be appropriate to develop a statement concerning the “desired future condition” of fish abundance and size within the Park relative to the current conditions.

Potential desired future conditions:

A: Abundance and size are maintained at or above current levels. New, Park-specific management actions would be enacted only if the current abundance and size of fish were to decline.

B: Abundance and size are increased to and maintained at least 10% above current levels. Park-specific management actions would be taken as necessary to insure that Park stocks are increased to and maintained at target conditions.

C: Abundance and size are increased to and maintained at least 20% above current levels. Park-specific management actions would be taken as necessary to insure that Park stocks are increased to and maintained at target conditions.

D: *Your suggested Desired Future Condition – indicate on comment form under #1 (Other) or under the “Other comments” section (back of comment form).*

Potential Management Actions: Management actions necessary to achieve the various alternative Desired Future Condition statements under this issue are anticipated to be very similar in scope and nature as those listed under Fishery Issue 1. Similar caveats would apply for those species not residing for long periods within the Park or whose abundances may directly influence each other.

Assessment Measures: Data on abundances and size distributions will be collected through fishery-independent methods (e.g., visual census, trawl/seine/trap surveys) and through fishery-dependent methods (catches and landings based on recreational creel surveys and reported commercial landings). Comparisons between current and future populations will be made using statistical tests and simulation models.

FISHERY ISSUE 3.

The long-term abundances of spiny lobster, blue crab, stone crab and pink shrimp within the Park

Background: These organisms support commercial and recreational fisheries. Based on fishery-dependent and –independent data, it is likely that populations of these species have remained relatively stable over the last several decades. However, as with the finfish species, statements of “desired future conditions” with regards to population abundances would be appropriate for guiding future management decisions.

Potential desired future conditions:

A: Populations are maintained at or above current levels. New, Park-specific management actions would be enacted only if levels were to decline.

B: Populations within the Park are increased by 10% over current abundance. Park-specific management actions would be taken as necessary to ensure that Park stocks are increased to and maintained at the target conditions.

C: Populations within the Park are increased by 20% over current abundance. Park-specific management actions would be taken as necessary to ensure that Park stocks are increased to and maintained at the target conditions.

D: *Your suggested Desired Future Condition – indicate on comment form under #1 (Other) or under the “Other comments” section (back of comment form).*

Potential Management Actions: Again the potential management actions taken would vary with the alternative statement chosen and observed responses of the population. To achieve the “desired conditions” described in alternatives B & C, some reduction in current fishing mortality would have to be achieved. This would likely involve actions such as decreases in bag limits, reducing seasons, limiting the number of recreational and/or commercial fishers, and/or temporal or spatial closures. The least restrictive measures necessary would be used.

Assessment Measures: We will generate estimates of abundance based on (1) fishery-dependent observations (e.g., commercial and recreational catch, landings and catch per unit effort data), and (2) fishery-independent (e.g., trawl/seine/trap/visual surveys) observations. We will compare current and future abundances using statistical tests and simulation models.

II. COMMERCIAL FISHING ACTIVITY

FISHERY ISSUE 4.

Numbers of commercial fishers within the Park

Background: In Miami-Dade County, the commercial fleet harvest over the last decade has been relatively constant (between 1-2 million pounds of finfish and invertebrates annually). The number of registered commercial vessels increased from 1,242 vessels in 1964 to 3,135 vessels in 1999, but then decreased to 1,695 in 2001. In 1965, when Congress was considering allowing fishing to continue in the Park, total reported landings of commercial food species in Biscayne Bay totaled 605,500 pounds. In 2001, commercial landings for Miami-Dade County totaled 1,601,221 pounds (food species and bait shrimp).

Potential desired future conditions:

A: The current number of commercial fishers would not be allowed to increase from current levels.

B: The current number of commercial fishers would be permitted initially but reduced by 20% through attrition of retiring permit holders over time.

C: The current number of commercial fishers would be permitted initially but reduced by 30% through attrition of retiring permit holders over time.

D: *Your suggested Desired Future Condition – indicate on comment form under #2 (Other) or under the “Other comments” section (back of comment form).*

Potential Management Actions: Commercial fishers in Park waters would be required to purchase a limited-entry, fee-based Special Use Permit and to report landings from Park waters to the Park Superintendent. A deadline for permit purchase would be set (communicated to the public via mailings and mass media), with purchase limited to those having reported commercial catch to the FWC trip ticket program for the Biscayne Bay area (statistical zone 744.2, or newly established zones 744.4 and 744.5) during the three years immediately prior to the deadline. An appeals process would be established for those not meeting the permit criteria but for whom circumstances may dictate inclusion in the permitted group. The current level of commercial fishing activity (gear and species-specific, when appropriate) would be defined as the initial numbers of permit holders (i.e., the number of permits issued in the first year of the permit system would be the baseline, “current” fishing level against which future numbers of permits would be compared).

Assessment Measures: The number of commercial fishers in the Park would be determined by the number of commercial permits issued, and by the number of commercial fishers reporting landings from Park waters.

FISHERY ISSUE 5.

Bycatch amount and bycatch-related mortality associated with commercial fishing gear

Background: All commercial fisheries in the Park generate bycatch and some bycatch-related mortality. Current data are insufficient to quantify bycatch mortality by fishery but both the Park and the FWC feel that the level of bycatch occurring is an important concern for fisheries management and is suitable for the development of a statement with regards to a “desired future condition.” Levels of bycatch will be assessed in the future through combinations of Biscayne survey data and all other available information (e.g., published manuscripts, technical reports, and ongoing research projects).

Potential desired future conditions:

A: The current level of bycatch and bycatch-related mortality is allowed but not increased. Additional management actions to reduce bycatch and bycatch-related mortality would be taken only if an increase above current levels was observed.

B: Bycatch and bycatch-related mortality rates are reduced and maintained at least 20% below current levels. Specific management actions would be taken as necessary to achieve a reduction in bycatch and bycatch-related mortality to the target level.

C: Bycatch and bycatch-related mortality rates are reduced and maintained at least 30% below current levels. Specific management actions would be taken as necessary to achieve a reduction in bycatch and bycatch-related mortality to the target level.

D: *Your suggested Desired Future Condition – indicate on comment form under #2 (Other) or under the “Other comments” section (back of comment form).*

Potential Management Actions: A range of management actions would be considered to accomplish each of the potential desired future conditions listed above, with the actions growing progressively more stringent from A (minor) to C (considerable). Such actions could include spatial or seasonal reductions in gear-specific effort, or required use of new bycatch reduction devices.

Assessment Measures: Bycatch data will be collected by monitoring (1) numbers of non-targeted organisms within spiny lobster, blue and stone crab traps, (2) numbers of “ghost” traps (functional traps not attached to buoys or trap lines), (3) the frequency of entangled marine mammals and turtles in trawls or lines, and (4) the amount of bycatch (species-specific) in shrimp roller-frame trawls.

III. HABITAT CONDITIONS

(Alterations to the physical natural environment by recreational and commercial fishing activities)

FISHERY ISSUE 6.

Impacts from roller-frame trawling

Background: Bait shrimp trawlers operate within the Park in areas covering up to 350 km². While trawlers focus efforts in seagrass areas, hardbottom areas interspersed with seagrass are also frequently trawled. Studies have shown that, while roller-frame trawling over seagrass has limited impacts, damage is usually severe to hard-bottom communities (which provide important nursery habitat to fish and invertebrates) and organisms subjected to roller-frame trawling.

Potential desired future conditions:

A: Roller-frame trawling is confined to seagrass beds in the bay portion of the Park. Regulations would be established prohibiting trawling over areas delineated as hardbottom habitat.

B: Allowable-harvest areas for shrimp trawling will be established. Non-harvest, control areas would be set aside for studies of trawling impacts on physical habitat and aquatic faunal species composition.

C: *Your suggested Desired Future Condition – indicate on comment form under #3 (Other) or under the “Other comments” section (back of comment form).*

Potential Management Actions: Alternatives limiting roller-frame trawling to designated areas would require new regulations designating areas open to trawling. Management actions may also involve the marking of the boundaries of areas closed to trawling.

Assessment Measures: The (1) frequency of trawling in non-designated areas, (2) frequency and magnitude of detected trawling impacts in hardbottom areas, and (3) the percent of trawler captains interviewed that are knowledgeable of regulations will be monitored to make inferences about degree of compliance with regulations.

FISHERY ISSUE 7.

Frequency of derelict spiny lobster and crab traps and trap debris on benthic habitats

Background: Visual surveys throughout the Keys in 2002 found that densities of derelict traps and trap debris were higher in the Park than in most other areas throughout the Keys. Up to 33% of lobster traps are found in patch reef areas. In the future, levels of traps and trap debris will be defined through combinations of Park survey data and other available information (e.g., published manuscripts, technical reports, and ongoing research projects).

Potential desired future conditions:

A: Densities of derelict spiny lobster and crab traps and of trap debris on benthic habitats are maintained at or below current levels. Additional management actions to reduce the level of derelict trap numbers or amounts of debris on the reefs would be taken only if an increase above current levels is observed.

B: Densities of derelict spiny lobster and crab traps and of trap debris on benthic habitats are reduced and maintained at least 50% below current levels. Specific management actions would be taken as necessary to achieve the desired reduction in numbers or derelict traps and amounts of trap debris on the reefs.

C: Densities of derelict spiny lobster and crab traps and of trap debris on benthic habitats are reduced and maintained at least 75% below current levels. Specific management actions would be taken as necessary to achieve the desired reduction in numbers or derelict traps and amounts of trap debris on the reefs.

D: *Your suggested Desired Future Condition – indicate on comment form under #3 (Other) or under the “Other comments” section (back of comment form).*

Potential Management Actions: Alternative “A” above would be accomplished through debris removal by Park staff and partner groups. Alternative “B” would require increased debris removal efforts and possible reductions in allowable gear or fishing effort. Additionally, Park-use permits could be established for lobster and crab fisheries, with an associated limit on numbers of traps per permit. Coral reef protection areas (CRPAs) would be established to delineate coral reef habitat on which lobster and crab traps could not be deployed. Traps within the CRPAs could be moved and placed outside CRPA boundaries by Park staff, FWC staff, or members of NPS-selected, trained and sanctioned volunteer organizations. Alternative “C” would be accomplished by greatly increased debris removal efforts and probable reductions in allowable gear or fishing effort. CRPAs would be established and traps (identified by trap number) with three or more recorded violations could be confiscated from Park waters.

Assessment Measures: The number per unit area of derelict traps and trap debris observed on benthic habitats in future years will be monitored and compared with current data. Changes from current levels will be determined through statistical tests.

FISHERY ISSUE 8.

Frequency of lost or discarded hook and line fishing gear

Background: There is insufficient data to quantify current levels of lost or discarded hook and line fishing gear but it is often seen while diving on Park reefs. The presence of this gear is detrimental to many reef organisms and to the recreational diving experience. The Park feels that it may be important to have a statement of “desired future condition” to guide necessary management actions with respect to this issue. In the future, levels of discarded hook and line fishing gear will be defined through combinations of Park survey data and other available information (e.g., published manuscripts, technical reports, and ongoing research projects).

Potential desired future conditions:

A: Densities of lost or discarded hook and line fishing gear on benthic habitats are maintained at or below current levels. Additional management actions to reduce the level

of fishing gear debris on the reefs would be taken only if an increase above current levels is observed.

B: Densities of lost or discarded hook and line fishing gear on benthic habitats are reduced and maintained at least 50% below current levels. Specific management actions would be taken as necessary to achieve the desired reduction in the amounts of fishing gear debris on the reefs.

C: Densities of lost or discarded hook and line fishing gear on benthic habitats are reduced and maintained at least 75% below current levels. Specific management actions would be taken as necessary to achieve the desired reduction in the amounts of fishing gear debris on the reefs.

D: *Your suggested Desired Future Condition – indicate on comment form under #3 (Other) or under the “Other comments” section (back of comment form).*

Potential Management Actions: Alternatives A, B and C would be accomplished via removal efforts by Park staff and partner groups, with efforts growing progressively greater from A (minor) to C (considerable).

Assessment Measure: The number per unit area of lost or discarded hook and line fishing gear observed on benthic habitats will be monitored and compared with current data. Changes from current levels will be determined through statistical tests.

FISHERY ISSUE 9.

Habitat impacts (e.g., broken, injured and over-turned coral) due to lobster divers

Background: The Park has noticed considerable new damage to coral reefs and other habitats within the Park following the annual two-day lobster sport-season, which strongly suggests impacts resulting from lobster divers. There is the potential for considerable habitat impacts from lobster divers. There is insufficient data to quantify current levels of habitat impact but, in the future, habitat impacts will be assessed through combinations of Park survey data and other available information (e.g., published manuscripts, technical reports, and ongoing research projects). A statement of “desired future condition” with regards to lobster diver impacts may be helpful in determining when additional management actions are necessary.

Potential desired future conditions:

- A:* Habitat impacts are maintained at or below current levels. Additional management actions to reduce the level of impacts would be taken only if an increase above current levels is observed.
- B:* Habitat impacts are reduced and maintained at least 50% below current levels. Specific management actions would be taken as necessary to achieve the desired reduction in the amount of impact.
- C:* Habitat impacts are reduced and maintained at least 75% below current levels. Specific management actions would be taken as necessary to achieve the desired reduction in the amount of impact.
- D:* *Your suggested Desired Future Condition – indicate on comment form under #3 (Other) or under the “Other comments” section (back of comment form).*

Potential Management Actions: Alternatives A, B and C would be accomplished via increased diver education efforts on how to avoid habitat impacts, with efforts growing progressively greater from A (minor) to C (considerable). Alternatives B and C would likely require spatial closures of diver harvest.

Assessment Measure: The frequency and extent of observed damage and numbers of divers (particularly during the special lobster sport-season) will be monitored and annual means compared with current levels through statistical tests. As a partial assessment measure, the Park will implement paired, before-after sport-season habitat surveys to assess habitat impacts associated with lobster harvest by divers.

FISHERY ISSUE 10.

Spearfishing impacts

Background: Due to concerns associated with (1) spearfisher-associated reef damage, (2) potential behavioral effects on fishes that are targeted by spearfishers, and (3) the harvest of fish smaller than minimum regulatory size due to “underwater magnification”, the Park is concerned about the effects of spearfishing on Park resources. In light of these concerns, spearfishing has been restricted in other nearby marine areas (Everglades National Park and parks under the jurisdiction of the Florida Division of Recreation and Parks, including John Pennekamp Coral Reef State Park, which is adjacent to Biscayne National Park). A statement of “desired future condition” with regards to spearfishing may be helpful in determining whether management actions are necessary. There is insufficient data to quantify current levels of spearfishing impacts on habitat and fish populations in the Park.

Potential desired future conditions:

A: Spearfishing impacts are maintained at or below current levels. Management actions would only be undertaken if increases in items 1 through 3 listed above (background section) were identified.

B: Spearfishing impacts are reduced below current levels. Management actions would be taken to reduce the effects of spearfishing on items 1 through 3 listed above.

C: Spearfishing impacts are eliminated. Management actions would be taken to eliminate the effects of spearfishing on 1 through 3 listed above.

D: *Your suggested Desired Future Condition – indicate on comment form under #4 (Other) or under the “Other comments” section (back of comment form).*

Potential Management Actions: Alternatives would be accomplished through increased spearfisher education efforts on how to avoid spearfishing impacts, with efforts growing progressively greater from A (minor) to C (considerable). Alternative B would require limiting spearfishers to the use of non-compression-fired gear (e.g., Hawaiian slings), areas closed to spearfishing, or seasonal closures, and Alternative C would require the prohibition of spearfishing in Park waters.

Assessment Measure: The success of management actions would be measured via compliance with regulations (as measured in creel surveys and by law enforcement personnel), Park surveys and direct observations of resource impacts.

IV. RECREATIONAL FISHING EXPERIENCE

FISHERY ISSUE 11.

Quality of experience of Park visitors engaged in recreational fishing

Background: Visitor experience (of which recreational fishing experience is a part) is a fundamental component of the National Park Service mission. Park data show that ~93% of all Park visitors are satisfied with their overall Park experience and the Park would like to maintain or improve upon this figure for recreational fishers. A stated “desired condition” with regards to fisher satisfaction would be used to help guide management response to this important issue. There is currently insufficient data to quantify the quality of experience of just recreational fishers in the Park. The Park has initiated steps to collect this data.

Potential desired future conditions:

A: At least 85% of recreational anglers, annually, report having a “satisfying” experience. Failure to meet this level will result in further management investigations and possible actions to improve recreational fishing experience.

B: At least 90% of recreational anglers, annually, report having a “satisfying” experience. Failure to meet this level will result in further management investigations and possible actions to improve recreational fishing experience.

C: At least 95% of recreational anglers, annually, report having a “satisfying” experience. Failure to meet this level will result in further management investigations and possible actions to improve recreational fishing experience.

D: *Your suggested Desired Future Condition – indicate on comment form under #4 (Other) or under the “Other comments” section (back of comment form).*

Potential Management Actions: Alternatives A, B and C would be accomplished via further efforts of the Park to identify characteristics of a fishing outing most important to providing a satisfying experience (i.e., through interviews and surveys), and subsequent efforts to provide those characteristics, with efforts growing progressively greater from A (minor) to C (considerable).

Assessment Measure: The percent of anglers indicating a “satisfying” experience will be monitored through interviews and/or follow-up surveys. Statistical tests will be used to determine whether the actual percentage differs significantly from a target percentage (e.g., 95%).

FISHERY ISSUE 12.

The portion of flats fishers experiencing a “private and tranquil” experience

Background: Long before Biscayne National Park was established, Biscayne Bay had a world renowned reputation for its flats fishing. This reputation has continued but is becoming increasingly threatened by increased motor boat use around and over the flats that are fished. Flats fishers report frequent disturbances from combustion engine-propelled vessels operating over shallow-water areas. Use of motorboats on shallow flats disturbs the private and tranquil experience associated with this type of fishing sought by these fishers, and can be harmful to the habitat and fish using these flats. A considerable proportion of recreational fishers that utilize the Park are flats fishers, and flats fishing is an important component of the Park’s recreational opportunities. A “desired future condition” statement with regards to this issue may be desirable to guide future management actions.

Potential desired future conditions:

A: At least 75% of flats fishers, annually, report being undisturbed by combustion engines while fishing. Failure to achieve the desired target level will result in establishment of non-combustion engine use areas.

B: At least 85% of flats fishers, annually, report being undisturbed by combustion engines while fishing. Failure to achieve the desired target level will result in establishment non-combustion engine use areas, coupled with increased enforcement.

C: At least 95% of flats fishers, annually, report being undisturbed by combustion engines while fishing. Failure to achieve the desired target level will result in establishment of non-combustion engine use areas, coupled with increased enforcement.

D: *Your suggested Desired Future Condition – indicate on comment form under #4 (Other) or under the “Other comments” section (back of comment form).*

Potential Management Actions: Alternatives A, B and C would be accomplished by creating no combustion engine use zones over selected flats areas. Zone size and number may grow progressively greater from alternatives A (minor) to C (considerable).

Assessment Measures: The percent of flats fishers indicating a “private and tranquil” experience will be monitored through interviews and/or follow-up surveys. Statistical tests will be used to determine whether the actual percentage differs significantly from a target percentage (e.g., 95%). The frequency of observed violators in designated non-combustion engine areas will also be monitored to provide an indirect measure of flats fisher disturbance.

FISHERY ISSUE 13.

Fishing public’s knowledge of fishing regulations in the Park

Background: A high level of public knowledge of fishing regulations is critical to the effective management of fishery resources in the Park. Setting a desired standard through the use of a “desired future condition” statement will help identify when additional efforts to inform the public may be needed. There is insufficient data to quantify current levels of the fishing public’s knowledge of fishing regulations in the Park.

Potential desired future conditions:

A: At least 75% of the fishing public, annually, is knowledgeable of fishing regulations in the Park. Failure to meet this level will result in further management actions and public education efforts to improve fisher knowledge of regulations.

B: At least 85% of the fishing public, annually, is knowledgeable of fishing regulations in the Park. Failure to meet this level will result in further management actions and public education efforts to improve fisher knowledge of regulations.

C: At least 95% of the fishing public, annually, is knowledgeable of fishing regulations in the Park. Failure to meet this level will result in further management actions and public education efforts to improve fisher knowledge of regulations.

D: *Your suggested Desired Future Condition – indicate on comment form under #4 (Other) or under the “Other comments” section (back of comment form).*

Potential Management Actions: Alternatives A, B and C would be accomplished via increases in public outreach/education programs (e.g., placing signs and pamphlets at local marinas) and fisheries enforcement, with increases growing progressively greater from alternative A (minor) to C (considerable).

Assessment Measures: The percent of fishers that profess to be knowledgeable of regulations will be monitored through interviews and/or follow-up surveys. Statistical tests will be used to determine whether the actual percentage differs significantly from a target percentage (e.g., 95%). The frequency (percent of inspections) and incidence (number/hr patrolled) of fishing citations will also be monitored as an indirect measure of public knowledge of fishing regulations.

FISHERY ISSUE 14.

Fishing public’s compliance with fishing regulations in the Park

Background: In addition to knowledge of Park fishing regulations, a high level of compliance with regulations is critical to the effective management of fishery resources in the Park. Violations of regulations are commonly observed during surveys of fishers returning to local marinas. Violations may be due to a lack of knowledge of the regulations or to accidental or purposeful violation. A stated “desired future condition” of high compliance will help the Park gauge when and what kinds of management actions are needed to insure regulations are observed.

Potential desired future conditions:

A: At least 75% of anglers, annually, are in compliance with Park fishing regulations. Failure to meet this level will result in further management actions and law enforcement efforts to improve compliance.

B: At least 85% of anglers, annually, are in compliance with Park fishing regulations. Failure to meet this level will result in further management actions and law enforcement efforts to improve compliance.

C: At least 95% of anglers, annually, are in compliance with Park fishing regulations. Failure to meet this level will result in further management actions and law enforcement efforts to improve compliance.

D: Your suggested Desired Future Condition – indicate on comment form under #4 (Other) or under the “Other comments” section (back of comment form).

Potential Management Actions: Management actions necessary to achieve these alternatives will depend on the reasons the selected desired conditions are not being met. Many of the actions may be similar to those under Issue 12 if greater public education is needed. Additional enforcement efforts may be required in cases where desired conditions are not being met due to accidental or willful infractions of the regulations.

Assessment Measures: The percent of fishers in compliance with regulations will be monitored through creel surveys and angler interviews. Statistical tests will be used to determine whether the actual percentage differs significantly from a target percentage (e.g., 95%). Additionally, the frequency (percent of inspections) and incidence (number/hr patrolled) of fishing citations will be monitored as an indirect measure of compliance.

Note: The Park is exploring options with cooperating law enforcement agencies to expand enforcement efforts within the Park.