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THE NATIONAL PARK SERVICE'S NATIVE AMERICAN POLICY: A STATUS REPORT

By
Jackson W. Moore

At first glance, the formulation of a standard NPS policy for Native American use of and access to the parks would appear to be a simple problem which could be addressed forthrightly for resolution. Appearances, however, can be deceptive. In fact, the whole issue is a complex one, involving treaties, contradictory precedents, religion, emotion, prejudice, the U.S. Constitution, and a relationship with the Federal government comparable to none other in the world. There is no single approach by which we can address this issue, but several, and not all of them forthright.

The National Park Service is not responsible, of course, for the full range of Native American issues. Those with which the Service is involved include the following:

Access to sites of religious/cultural/ceremonial significance;

Residency on ancestral lands now in Park Service ownership;

Foraging, gathering, fishing and hunting;

Participation in developing programs that interpret Native American cultures and prehistory;

Appointment of Native Americans to advisory and consultative committees at parks which impact Native Americans;

Entrepreneurial franchises at parks;

Upgrading of Indian assistance programs;

Collections of artifacts which contain ceremonial or skeletal material.

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THE ADAPTIVE USE OF HISTORIC BUILDINGS

By
Hugh Miller
and
Harry Butowski

In the past decade, the National Park System has grown enormously. We have added literally thousands of National Register caliber historic structures to our care. Gateway NRA has over 200 major buildings at Sandy Hook, one of several units of the park; Golden Gate will eventually have over 1,000 historic structures. Cuyahoga has untold numbers, and National Capital Region has over 1,000 such buildings. Cape Cod is well represented as are Harpers Ferry, Hot Springs, and Delaware Water Gap. In addition, there are numerous parks, such as Buffalo River, Blue Ridge Parkway, Point Reyes, Cape Lookout, Cumberland Island and Gulf Islands, that have a half-dozen to a dozen structures that are being only partially used.

Generally, the principal reason for preserving these structures at these parks, is to maintain their facades and thus, preserve the historic scene. Interior spaces of the great majority of these structures could be used for any number of purposes without destroying the purpose for their preservation. The Park Service could conceivably rent smaller structures to private, individuals or larger structures to private individuals or commercial interests for shops, boutiques, or office space.

There is much that can be done today to avoid the abandonment or underutilization of these historic buildings. The abandonment of such structures is detrimental to the preservation of the building and should be avoided. Today, there are several existing laws and policies that can be used to provide uses for these threatened edifices.

See ADAPTIVE, page 2.

The First Bank, a facility in Independence National Historical Park, provides an excellent example of adaptive use. The bank presently provides office and multipurpose use for National Park Service operations.

NATO'S COMMITTEE ON THE CHALLENGES TO MODERN SOCIETY CONSIDERS STUDIES IN STONE CONSERVATION

by
Hugh Miller, AIA

The U. S. delegation to the North Atlantic Treaty Organization's Committee on the Challenges to Modern Society (CCMS) met September 28 at the direction of Paul Perrot, Assistant Secretary of the Smithsonian Institution. The aim of that meeting was to discuss the United States' initating a study project on stone conservation. After all, conservation of stone monuments and works of art have long been recognized as an international problem, partly related to environmental impacts.

Attendees at the meeting included Paul Von Ward from the Department of State and Richard Livingston of the Environmental Protection Agency, the leading United States participants on the committee. Henry A. Judd and Hugh C. Miller from the National Park Service, Dr. Ernest A. Connally and W. Brown Morton of the Heritage Conservation and Recreation Service, Dr. Geoffrey Frohnsdorff, Dr. Gerald Sleater, and Dr. James Clifton of the National Bureau of Standards and, Elliott Carroll representing the Architect of the Capitol were in attendance. Other representatives came from the Smithsonian Institution, the Conservation Center, Institute of Fine Arts, and the National Trust for Historic Preservation. Interested private individuals at the meeting included Dr. Erhard M. Winkler, Department of Earth Sciences, Notre Dame University. Dr. Bernard Feilden, Director of the International Center for Conservation, Rome, was a special guest at the meeting. Papers were presented to stimulate general discussion. The group agreed that stone was a suitable material to discuss in an international forum, and that the United States should take the lead in the pilot study project involving CCMS. A task force was formed to develop the proposals discussed. Chaired by Dr. Norbert Baer of the NYU Conservation Center, its members included Dr. Erhard M. Winkler, Henry A. Judd, Dr. Geoffrey Frohnsdorff, W. Brown Morton, and Paul Perrot. The working group charged them to include in the project:

A) the investigation of stone as material --its use in building systems;

B) the environmental impact of stone in terms of natural processes and man-made environmental changes;

C) the internal and external deterioration of stone;

D) the development of system for monitoring and modeling the environment and deterioration of stone;

E) the study of stone in situ;

F) the development of standards for treating stone and the development systems for documenting previously treated stone monuments;

G) the recording of such new and future treatments.

Education and training for technicians and professionals dealing with stone preservation was also a factor.

The task force was directed to prepare a report for circulation to interested persons. That report should be ready for presentation before the July 1979 meeting of the CCMS.

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Public Law 90-401 authorizes the sale or lease of property acquired for the National Park System (except property within national parks or within national monuments of scientific significance), when that property is not immediately required for park programs. The use of this property for non-park purposes must be in a manner which is consistent with the purpose for which the area was authorized by Congress. The property may be "leased-back" for a long or short term. A short-term renewable lease could keep present owners or tenants in a historic property until NPS planning is completed and final use is determined and funded. Long term leases can provide occupancy and maintenance standards for those historic structures not needed for immediate park use. In most cases, these structures are farms and private residences, but may include existing commercial buildings.

Special use permits can be given general authority for the adaptive use of portions or all of a historic structure by non-profit groups, cooperative activities, etc. This method of using historic structures is limited only by imagination and common sense.

The Concession Policy Management Act (Public Law 89-249) established a system for providing public accommodations, facilities, and services that are necessary and appropriate for the public use and enjoyment of national parks. Under these provisions, the Secretary is authorized to contract for those services he deems desirable for the park visitor. Historic buildings can be made available to concessionaires, and NPS policy, after all, encourages adaptive use of historic structures.

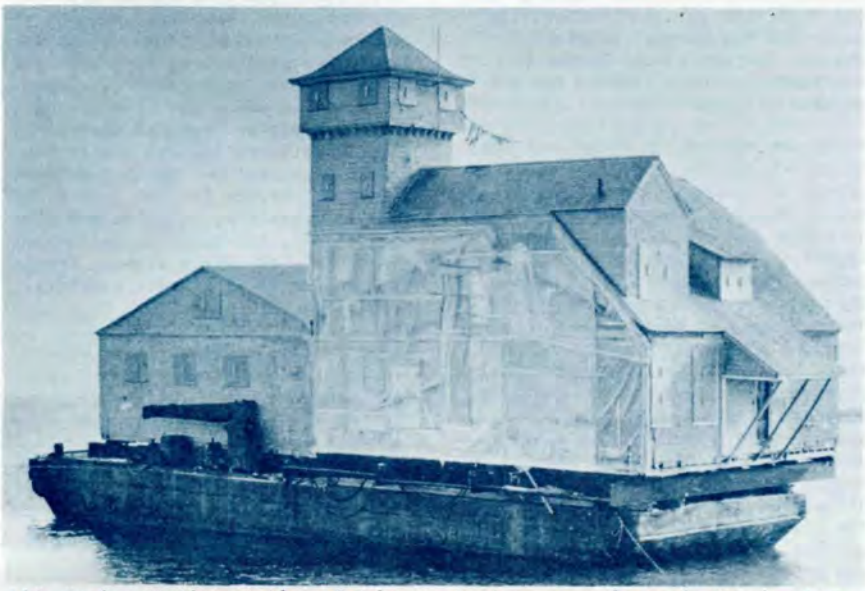
The NPS can also enter into contracts (Public Law 91-383) that allow for cooperative agreements for living exhibits, interpretive demonstrations, and park programs. This legislation also allows the NPS to sell at fair market value products and services produced in the conduct of these activities. Proceeds are credited to the appropriation bearing the cost of such exhibits and demonstrations. This authority can be imaginatively applied to historic structures in national parks, recreational areas, and historical sites.

The housing of government employees (Public Law 88-459) in historic buildings is another adaptive use to be encouraged. Rentals reflect current market conditions adjusted by the amount of preservation and/or other costs, such as extra fuel, that the lessee provides. Monies from this source are returned to the park maintenance fund. Rental fees charged to employees of cooperating agencies (Eastern National Parks and Monuments Association employees, and other units that have a written cooperative agreement) using NPS buildings for quarters also can be returned to the maintenance fund. But, we must remember that when historic structures are used as quarters, any limitation on funds for repairs or alterations to these quarters should apply only to the non-historic portion of the structure.

The office of Cultural Resources has already talked to a number of individuals about this subject and will continue to gather data. The opportunities in this area for the National Park Service are almost limitless. It is a goal of Cultural Resources to see adaptive use of historic buildings adopted as an on-going program in the National Park Service.

Hugh Miller, AIA, is the Assistant Chief Historical Architect, NPS, and is on the staff of the Division of Historical Architecture, WASO. Dr. Harry Butowski is a staff historian in the Division of History, WASO (see *NEW FACES*, page 8).

Old Harbor Life Saving Station at Chatham -- early 20th century.



Life Saving Station at time of February 6 storm -- on barge in Provincetown.

SAVING THE LIFE-SAVING STATION

By
Mary Maruca

Life on a barge -- it's not for everyone. But that may have been what the residents of Provincetown, Massachusetts anticipated when they saw Old Harbor Life Saving Station float into Provincetown at 9 a.m., November 7, 1977. And how many of them didn't look up from breakfast, secretly hoping some Shanghai adventurer was docking in town? And how many of them would have gladly stayed in bed had they known "Fader's Folly" was a Park Service preservation attempt rather than some international vessel headed north?

Very few Cape Codders can answer these questions for you now. Too much water has washed over the barge, particularly since the February, 1978 storm which saw extensive harbor property destroyed. What they can tell you is that the Old Harbor Station had been a part of their skyline since before it became a Park Service National Register Property in 1975. Many Chathamites doubted the move could be made; the rest never saw the justification for it.

But history gives the reason for the move. In 1897, the Atlantic Ocean high water mark came within 600 feet of the life saving station. One-and one-half years ago, the wave from a storm tide actually crashed against the building. Another winter in the same spot would have seen the destruction of the station, and with it, a site commemorating mariners' struggle with the sea.

A historical evaluation of the property uncovered only one other station out of an original 13 which once protected the coastline -- a historical surplus by no one's standards. The only other extant life saving facility had been remodeled to serve as a restaurant in the Cahoon's Hollow region. The question thus remained whether to let a part of Cape Cod heritage vanish into the murky Atlantic or whether to preserve the Chatham station in order to pass it down intact to the next generation. The decision to save the station was not easy, and Park Service management anguished over what to do with the building. But, survival proved the order of the day. And one week prior to the commencement of the project, Marsha Fader, a young historical architect for the North Atlantic Region, was informed of her role as project supervisor.

One by one, the pieces fell into place. Whereas in 1975 there had been no real interest in preservation, interest had now been mustered in preservation quarters. Even a relocation site was in the offering some 500 feet from the site of a previous station. It looked like the Duluth-style station with its rambling beach house layout was about to be saved. The stage was set. The major players were on hand. The only thing missing were the cranes.

When the cranes came, they came from the sea, the major transportation route for the move. Conversations with the regional scientists assured Marsha that no environmental damage would be done, but that her chances of success were minimal as the storm season approached. From the start, Ms. Fader was fairly certain of how the move would be done. But before making a final commitment, she considered all the alternatives. Nevertheless, helilifting a two-story life saving station and tower unit seemed both impractical and time consuming. Completely dismantling the building and reassembling it elsewhere warranted the same objections. A third proposal to move the station farther back from the shore would not have provided it with permanent protection. And transporting a life saving station across the beach using four wheel drive did not offer the optimum preservation approach. The only viable alternative seemed to be the sea.

See SAVING, page 4.

SAVING, from page 3.

So the cranes came, slowly, tediously, on barges across Pleasant Bay to Chatham. Their weight capacity -- 140 tons and 82 1/2 tons lifting strength -- along with the non-gripping action of their rubber tires made the distance between beach and station a precarious maneuver. To keep them from getting stuck as they lumbered up the beach front, timber mats were used. After the cranes rolled across them, the mats were removed and the process started again. In this time-consuming fashion, the cranes made their journey up the grade to the life saving station.

But though help was on the way, the crisis was only beginning. What do you do with I-beams, a front-end loader, two cranes, and the thousand odd accouterments of a move when the weather holds you captive on a thin peninsula of land? You do as Marsha Fader and her contractor, Jack Cory, did. You wait, and you complete as much of the pre-move business as time and fog cover allow. This premove work included the replacement of window sills, the preparation of pockets to hold I-beams, extensive clean-up work, and, ultimately, the removal of a non-historical plaster ceiling which lightened the station weight-load and made transportation that much easier. It also meant plotting the moving schedule to include bringing in the barge at high tide, loading it, sending it out at the same high tide, towing it the 40 miles to Provincetown in daylight, and having 24 hours of good weather conditions still ahead.

Well, these machinations were more easily plotted than done. The little party working on the move -- this included Marsha and the contractor's crew -- waited day after day for good weather to break. When it finally did, communications between Chatham and Martha's Vineyard, the tug boat and barge headquarters for the move, became so fouled neither conveyance showed up to take advantage of the lull.

But disappointments drew Marsha and her group closer together. As she proved herself an excellent adminstrator, her youthfulness and sex came under less and less comment by her fellow workers. On occasion when these factors did surface, they surfaced only as delightful tributes to her -- tributes such as the yellow dump truck with her name fondly painted on it, or the little caravan of jeeps which waited for her to leave the work site site each evening before their drivers also headed home. This combination of well-intentioned bullying and occasionally exasperating attention strengthened the comraderie of the group and saw them through the disappointing ups and downs of the move.

When weather conditions finally said "go," many of the Chatham townspeople silently turned out for the move. Like any audience fully appreciative of an artistic endeavor, they stood quietly, observing the orchestration of the two cranes as they simultaneously lifted the life saving station from its foundations. When it was done, some merely stood back; others voiced the general concern of the crowd: "Now that you've got it on the barge, let's see if you can get it off the beach."

Easier said then done, as Marsha Fader discovered. What followed was a classic scene worthy of a theatrical production. Contrary to everyone's calculations, the tide slipped out too early, leaving barge and station high and dry. "We'll wait till the next tide," everyone agreed.

Well, they waited till two in the morning when, much to everyone's dismay, the incoming tide failed to budge the structure. During the night the wet sand had shifted up around the barge. Frustrated, the project contractor threw up his hands: "Looks like we ran out of water."

There was nothing to do but put the bulldozer and the front-end loader behind the barge, and position the tug in front. Then, in the intense darkness, with only a pair of headlights illuminating the scene, the tedious work of pushing and pulling the barge out of the sand trap began. Hours later, with a casualness belying their hard work, the barge slipped free. No jubilation just yet. The small host of watchers followed its progress tensely. Just when all seemed to be proceeding as planned, someone noticed the barge wasn't moving anymore. One of several off-shore shoals characteristic of the coastline had ensnared it on its way out. "Hardheaded resourcefulness and providence got us through this one," Ms. Fader observed. Once again, the bulldozer began to flounder its way out to the barge over a quickly constructed bridge of sand.

It wasn't the bulldozer that finally sent the barge moving towards Provincetown but the repeated pulling efforts of the tug, which slipped it off the shoal on what turned out to be an almost too unbelievably calm day. So "Fader's Folly," as the barge was affectionately named, got successfully underway, and at 9 a.m. steamed into Provincetown Harbor, sportily waving the flag of the U. S. Coast Guard and the flag of the Irish Republic, a gift from the Irish foreman of the project. Once the life saving station was successfully harbored, everyone, including Marsha, was relieved--momentarily. The second stage of the journey-from Province town to Race Point-remained to be tackled, and its success depended on the irascible, unpredictable weather.

The winter of '78 was the winter Provincetown Harbor weathered a series of storms. Wave conditions outside the harbor never matched wave conditions within. If the day looked calm in Provincetown, the swells outside the harbor proved too rough to maneuver. So after several false starts, it was decided that the barge would winter at Provincetown. Had Ms. Fader known what was coming, she might have been tempted to select other quarters.

February 6, a tremendous storm of hurrican proportions blew into Provincetown.... and not just Provincetown. It had already devastated much of the Northeast coastline, wiped out a parking lot in the Seashore reserve, closed down air terminals in Boston, flooded entire towns, and sent homeowners scrambling for rowboats. Now the combined force of wind and rain lashed across Provincetown Harbor, severely damaging waterfront property. Even the wharf to which the life saving station had been anchored was completely obliterated. Ironically the life saving station itself remained unharmed. Except for the loss of several protective shingles and plywood boards, the building weathered the storm with little mishap, its tattered Irish flag still jauntily displaying its colors.

Three months later, after an extended six-month stay at Provincetown, the Old Harbor Life Saving Station was lowered on its new foundations at Race Point. Had it not been moved when it was, the station would have gone the way of its companion outbuilding, a prey to the February 6 storm.

Looking back on the move, Marsha fondly remembers the miraculous elements -- darkness and fog which theatrically cloaked the barge on its journey from Chatham to Provincetown and then on to Race Point, the hardheaded resourcefulness of the men the night the barge got stuck, and through it all, the preservation of the life saving station.

"I was out there working with something that mattered, something that couldn't be fooled with," Marsha observed." I had to think relentlessly as a preservationist."

Through her efforts and the efforts of her staff, the station that once preserved lives was preserved itself.

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These issues can be divided into three main policy areas:

Off-park planning and technical assistance - an activity that has been carried out by the Service through its cooperative activities program;

Indian Assistance-Cultural Resources Management Program - conducted primarily by the Western Archeological Center and the Southwest Cultural Resources Center for the Bureau of Indian Affairs under a memorandum of agreement;

Native American rights and privileges.

The first two categories, as recognized and addressable issues, are much longer lived. Despite the titles used, both involve direct dealings with the Bureau of Indian Affairs (BIA), although the tribes and bands were the presumed beneficiaries. Both programs have experienced difficulties in recent years with funding and staffing. The third category, while the youngest, is actually the germination of seeds which lay dormant for generations. The occasional shoots which sprang up randomly were nutrured or uprooted, likewise randomly, park by park on an ad hoc basis.

With the European-American settlement of the North America continent, most of the religious, ceremonial, and other sites of the American Indian were obliterated. Wherever public lands were established, whether as forests, parks, or open range, many have survived. Those Indian communities remaining intact, and which were spared relocation, have continued to use, openly or furtively, those shrines and other sites which still exist. Appeals to use these sites, once made plaintively, are now made demandingly. Various affirmative action programs, the passage of the Alaska Native Claims Settlement Act of 1971, and the general success of civil rights legislation have encouraged the passage of similar legislation in the States of Iowa and California. The latter, expressed as the California Native American Cultural, Historical, and Sacred Sites Act of 1976, established the Governor's Native American Heritage Commission. This legislation has had an impact upon the Service's Western Region, and that Region has requested policy guidance from the Washington Office. This request led to the issuance, in turn, of Special Directive 78-1 on February 6, 1978. This directive was formulated after intensive study of both the staff analyses provided by each Regional Office and the Management Policies of 1975. Numerous drafts were reviewed by many field offices, more WASO divisions than had originally expressed an interest, and the Policy Council. In-put and revision were almost continuous. Predictably, the most substantive critiques of Special Directive 78-1 followed its publication and distribution. The Office of the Secretary expressed interest and the Assistant Solicitor, National Parks, expressed reservations and called for discussions. At the same time, objectives similar to those of Special Directive 78-1 were advocated in Senate Joint Resoultion 102 "American Indian Religious Freedom."

At the National Park Service Policy Council meeting of March 20, 1978, a task force was appointed to further study the numerous issues involving Native Americans with a view to developing recommendations for consolidation into a general policy with separate implementing guidelines. These recommendations, contained in the task force report, have been submitted and are under review. Special Directive 78-1 will be revised and broadened. A committment to be aware of and sensitive to Native American religions and cultures is to be retained. However, National Park Service guarantees of privacy for Native Americans while engaged in religious ceremonies has been interpreted by the Solicitor's Office as incompatible with First Amendment prohibitions against the federal government's support of any one religion. It states that the United States shall make no law concerning religion, but shall permit religious and other public gatherings, and expressions of views. Thus, the issues of freedom of religion, freedom of public assembly, and freedom of speech are brought together in a single context.

Various court decisions have evolved the present opinion (not yet final) of the Solicitor's staff that: 1) religious observances on public lands will be neither hindered nor assisted; 2) privacy cannot be assured; 3) access cannot be provided to one group to the exclusion of any other who may wish to observe or participate. There is some question, however, as to whether the First Amendment is applicable to the Native American in the same way and to the same extent as to the general public. There are numerous court decisions, going back even further in time, that establish a separate relationship between the Federal government and the American Indian. From almost the beginning, Congress reserved to itself authority for defining the legal status and rights of the American Indians. By entering into treaty negotiations with them, which only the Congress can do, the Legislature endowed them with at least quasinational status. This denied to the States the right to deal independently with Indians. Their unique status provided the Indians not only with extraordinary prerogatives, but also with extraordinary constraints and handicaps. For example, the Indians were denied the writ of habeus corpus and other "rights" because they were not "persons" but "temporary inhabitants" of the land. The first successful challenge to this principle came in the U.S. District Court of Nebraska on May 19, 1879, Judge Dundy presiding. In Standing Bear vs. General George Crook, the Court declared the principle invalid. Although the U.S. Army accepted the verdict, then Secretary of Interior Carl Schurz did not. It was his position that Indians were neither citizens nor residents (as in the case of Old World immigrants) but wards of the government. In point of fact, neither the Judiciary nor the Executive Branches have defined adequately the rights of Indians. Since policies and regulations can be built upon in orderly and convincing fashion, just as with statutes, there is lattitude for both branches to proceed until caught in an obvious error.

In order to clarify to the Congress the parallel and often contradictory bodies of legislation, court decisions, and agency regulations, the American Indian Policy Council was formed in 1975. Several task forces of this council have published exhaustive reports containing a wealth of historical and statistical data, complete with analyses and recommendations. They are presently regarded as advocacy documents, however, and have no status as Federal policy. Among their recommendations, based upon their interpretations of what are basic doctrines of American Indian Law, are that Federal agencies are bound by the Trust Relationship to conduct their activities and programs in a manner that does not adversely impact Indian rights and resources, and to provide certain social services to them.

In order to determine what the Park Service, or any agency, can lawfully do, or not do, it must make some assumptions to devise objectives which express what it wants to do, and what it wants not to do. Accordingly, a draft position paper was prepared in the Division of Anthropology which makes the following assumptions: 1) Native Americans have been denied full participation in the acquisition and retention of

See NATIVE, page 8.

PARK SERVICE PARTICIPATES IN ALASKA STUDY

By
James Ebert

In response to the nation's growing needs for new petroleum sources, Congress passed legislation in 1976, taking the old Naval Petroleum Reserve Number 4 from under Defense Department control and placing it under Interior Department management. This same legislation called for Interior to survey the Reserve's cultural and natural resources prior to development of its energy fuels potential. The Department has responded by assigning different aspects of the needed survey work to those bureaus with the appropriate expertise. The U.S. Geological Survey and the Bureau of Land Management are presently concerned with resources exploration and mitigation surveys; the Bureau of Mines is assessing hard rock potential; the Fish and Wildlife Service is evaluating effects of development on fish and wildlife within the Reserve; the Heritage Conservation and Recreation Service is working on studies related to recreational potential within the Reserve as well as identifying recommendations for Scenic Rivers and Wilderness designations; and the Park Service has been tasked with identifying the cultural resources (man-made constructs of both the historic and prehistoric periods). The Bureau of Land Management, lead agency for these projects, will then incorporate the resultant data into a planning document for guiding the development of the Reserve's energy resources, and present it to Congress in early 1979.

The cultural resources of the historical period (whaling stations, missionary posts, etc.) are being studied by Gary Stein of the University of Alaska, and those of the prehistoric period by Dick Ping Hsu, formerly of the Division of Anthropology, WASO, and now assigned to the Alaska State Office. Legislative deadlines gave our Service archeologists two years to conduct the survey. In the Arctic, this means two 10-week periods (in the summer months) to survey 23,000,000 acres.

With a very short lead time, Hsu was able to assemble a 35-member crew for the summer of 1977, arrange helicopter support, buy food, tents rifles, etc. It was during the early phases of the archeological survey that Hsu and others realized the magnitude of the problems posed by a survey of such a large area, a vastness accessible only by foot or helicopter. To help the Service meet its obligations within the prescribed time, the NPRA team called in the Remote Sensing Division, Southwest Cultural Resources Center in Albuquerque to assist in the design of the Remote Sensing Program to support the NPRA Project. And because of the unique set of environmental characteristics, remote sensing experience in NPRA is generating a set of new investigative methods as well as helping to refine some old ones.

The Editor

The raw material of remote sensing -- its data -- is obtained through several channels or devices: aerial and orbital photography (color, infrared, and black and white), radar (both airborne and ground level), and magnetometry. Of these, photography was the most effective for the Alaska survey. The scale of the data obtained, that is, the size of the image and its resolution, is determined to a large extent by the altitude from which the photos are taken; and of course the scale needed in any specific applications depends upon the problems at hand. In the case of the NPRA Project, the basic data source was space imagery from a LANDSAT satellite. This imagery is collected using a multispectral scanner and is available to the user in scales up to 1:250,000. The LANDSAT imagery allowed an initial regional overview of NPRA, and also served as the basis for planning an ideal sampling design.

Archeological materials are never homogeneously distributed over an area, but instead, vary depending upon differences in resource availability and extraction, environmental characteristics and restraints, and the necessities of life from place to place. Particularly for hunter-gatherer groups, such as those which have always inhabited the northern Arctic, differences in the physical environment are important determinants of these things. An informed sample stratification, which divides the study area into sampling units on the basis of environmental differences, was derived through the interpretation of the NPRA LANDSAT imagery and drafted on a 1:5000,000 scale base map.

The interpreter, especially when working with satellite data, can never be really sure that what he thinks he is seeing is correct until ground truthing occurs. In the case of the NPRA sampling map, ground truth was arrived at on three different levels or scales: 1) through field reconnaissance by Remote Sensing Division personnel; 2) by the inspection of hand-held 35mm color and color infrared film exposed from a helicopter platform; and 3) from analysis of aerial photos taken at scales of 1:30,000, 1:60,000, and 1:120,000 by high altitude NASA aircraft during the summer of 1977. The successive interpretation of these data allowed interpreters to "zero in" on what they were seeing in the space imagery.

Ideally, a stratification like this would serve as the basis for placing actual on-the-ground sample units. However, as is the case in many work situations, the final revised stratification was not completed until the summer 1977 field season was over. This does not mean that the stratification map cannot be used in an ex post facto manner. If the exact areas surveyed on the ground are known, and sites can be accurately placed within their respective environmental zones, then the sample can be extrapolated for each zone of the entire area in question. Such prediction is obviously only the first step in the study and preservation of the cultural record, but its value to both managerial and development personnel becomes clear in the case of an area as vast as NPRA. If, for instance, plans were made by petroleum companies to place a 200-mile pipeline through NPRA, this sort of predictive sampling program could inform all concerned as to what kinds of sites might be encountered in each zone, what their research potential or historic value might be, and how much it might cost to conserve or otherwise mitigate these sites over each mile of the pipeline. Potentially, plans could be altered to save much of the cultural resource base, and certainly millions of dollars saved all around. The results of the 1977 field survey are presently being evaluated in terms of a predictive design, and data from the 1978 survey will be incorporated this winter.

Remote sensing imagery and data have also been supportive in a number of other ways to the NPRA Project. Aerial

Ground truth checking confirms accuracy of remote sensor data. Team from left to right: Dick Hsu and Harvey Shields, NPRA project; Jim Ebert, Remote Sensing, Albuquerque.

photos are a valuable aid to finding oneself, and pinpointing the location of sites and cultural materials in the field, because they contain all of the information found on a map and more -- even small objects such as bushes and pools of water can be used to determine exactly where one is standing on the ground. Aerial photos and LANDSAT imagery can also be applied to the problem of site location by "predictive generalization." In this procedure, field personnel, experienced in discovering sites on the ground, formulate a series of statements about the situations in which sites were found in explored areas.

The remote sensing interpreter then searches imagery taken over unexplored areas for such situations, thus narrowing down the areas which need to be closely inspected by ground crews. A serious problem in cultural resources survey work anywhere is visibility of cultural materials, and in the Artic, one important factor making sites undetectable is the impenetrable tundra ground cover.

Most Arctic sites, in fact, are found where the tundra is sparse or where wind and water erosion have uncovered areas of bare ground. These places can also be located using remote sensor imagery, and differential productivity of survey efforts across the study area estimated. The contribution of remote sensing to the NPRA and the contribution of the NPRA Project to remote sensing were discussed in more detail in a symposium at the 1978 meetings of the Society for American Archeology in Tucson, Arizona. The papers from this symposium have been published by the CRM Division (Lyons, Thomas R. and James Il Ebert, eds., Remote Sensing and Non-Destructive Archeology, 1978). A more general treatment of remote sensing methods, techniques and applications to CRM in the Arctic is soon to appear as the Alaska Region supplement to Thomas R. Lyons and Thomas Eugene Avery, eds., Remote Sensing: A Handbook for Archeologists and Cultural Resources Managers, published by the CRM Division in 1977.

For further information on the Remote Sensing Division's support of the NPRA project, or other activities of the Division, the reader may contact the author by calling (FTS) 474-3141, or by writing James I. Ebert, Remote Sensing Division, Southwest Cultural Resources Center, P.O. Box 26176, Albuquerque, New Mexico 87125. Those people wanting further information on all aspects of the archeological survey of the NPRA Project should contact Dick Ping Hsu at the Alaska State Office, National Park Service, 540 West 5th Avenue, Anchorage, Alaska 99501, (telephone, FTS, 276-8166).

ETHNOGRAPHY, REMOTE SENSING, AND CULTURAL RESOURCES MANAGEMENT

By
Rosalie Fanale

As in many areas of contemporary scientific research, the applications of remote sensing are constantly expanding. The National Park Service is fortunate to be among those organizations, both in the private and public sectors, that are actively seeking techniques to anthropological/archeological research and cultural resources management. An exciting aspect of this research program at the Remote Sensing Division (RSD) of the Service's Southwest Cultural Resources Center is the application of remote sensing technology to ethnography. Socio-economic problems in rural and urban settings are only now being tackled by ethnographers. Through ethnography and the advanced techniques of remote sensing, the RSD has increased its capability for rapid data gathering and cultural interpretation within National Park Service areas.

Satellite imagery and aerial photography, both tools of the ethnologist, have proven increasingly useful in the solution of anthropological problems. The remote sensor image permanently records the social, economic and environmental features of a defined area. A trained analyst then uses this information to monitor new settlements and population growth in historic areas. Such information may be valuable also in gauging the impact of grazing animals on vegetation cover and in planning the location of services, roads, or buildings.

The San Juan Basin Ethnographic Project is one example of the closeness between ethnography and remote sensing. Highly trained personnel at RSD have been studying the cultural resources of New Mexico's San Juan Basin. A major objective of their work is the determination of recent environmental change and its relationship to land use in the region. Integral to this project is the development of sampling procedures for ethnographic data collection over a large area. The results of frame sampling and stratification techniques help ethnographers select smaller areas for intensive ground study. Such sampling procedures greatly improve the speed and accuracy with which the planner or manager assesses conditions over an entire region.

Currently, a wide range of scales and types of imagery are being used in this project. Plans to supplement the manual and visual interpretations with computer analysis of digital

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Remote Sensing Division
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LANDSAT data are also being considered. One by-product will be RSD's increased ability to determine the usefulness of analysis techniques and imagery types in solving a variety of anthropological problems.

In the Southwestern Pueblos project, large scale aerial photography of 24 southwestern pueblos has enabled RSD to build a data base which will eventually be used by other ethnographic projects. These Pueblos were chosen because a series of aerial photos taken in 1950 provides a basis for comparison with current photography. With the new aerial photography, RSD will be able to examine changes in land use and environment, to determine the impact of population growth and population movements, and to plot new buildings or isolate changes in old structures.

An ethnographic supplement to the National Park Service's Remote Sensing: A Handbook for Archeologists and Cultural Resource Managers is scheduled for 1979 publication. It will include past and present ethnographic applications of remote sensing techniques, in addition to guidelines for anthropological approaches to cultural resources management.

For further information on ethnography as it relates to National Park Service remote sensing projects, contact the author at the Remote Sensing Division, Southwest Cultural Resources Center, National Park Service, P.O. Box 26176, Albuquerque, New Mexico 87125.

NEW FACES IN THE CRM DIVISION

Harry A. Butowsky, Historian. Dr. Butowsky comes to us from the Mid-Atlantic Region where he worked as a staff historian in the Division of Planning and Resurce Preservation. While there he completed a report for Petersburg National Battlefield--Appomattox Manor--City Point A History. Dr. Butowsky now reviews National Register Forms, Environmental Impact Statements and research reports that come into the Office of Cultural Resources. Having a long standing interest in Civil War railroads, Dr. Butowsky is a Civil War buff who comfortably balances his historical and administrative burdens. Harry is a native of Philadelphia and is now living in Reston, Virginia. He can be reached at 202/343-2861.

Benjamin Levy, Historian. Ben recently returned to NPS after a "technical leave" of three months in HCRS. His fifteen years with NPS began with five years in the field at Edison, New Jersey and Fort Davis, Texas as supervisory historian. It was there that he relates having had "the great psychological satisfaction of dealing with history and people on a one-to-one basis." He attended the Hillary Tolson session of "Kowski College" at Grand Canyon in 1965. While stationed at Fort Davis in 1967, he was asked by Bob Utley, then Chief Historian at NPS, to come to Washington, and join the Office of Archeology and Historic Preservation (OAHP). During his years in OAHP, (1967-1978), Ben served as Research Historian; Assistant Keeper of the National Register; Chief, Branch of Compliance (106); Chief Compliance Office, Advisory Council on Historic Preservation; and and finally as Senior Historian, Historic Sites Survey (National Historic Landmarks Program). With his background in preservation compliance, he's a natural for his first first assignment--working with the Advisory Council's Memorandum of Understanding which he describes as "one of the best opportunities the Service has had in a decade to utilize the preservation review process effectively and efficiently." Ben can be reached at 202/343-2871.

Mary Maruca, Editorial Assistant. Ms. Maruca is a graduate of Maryland University with a degree in English/Liberal Arts. Her background includes a brief sojourn at several trade associations as well as work for NCP-East (a division of National Capitol Region), and back-up freelance assignments. In her off-hours, Ms. Maruca writes film and TV scripts with another writer. Her present position with Cultural Resources Management includes assisting Douglas Caldwell, senior editor, on the CRM Bulletin in addition to other assignments promoting the division's accomplishments in the field. Any material related to a current project in your region, or any staff articles which you think would make good CRM Bulletin copy may be referred to her or to Doug Caldwell. Her phone number is 202/343-2719.

Mary Maruca, Ben Levy, Harry Butowski

NATIVE, from page 5.

a land base containing advantageous resources, and are a disadvantaged minority; 2) being subject ultimately to Congress' plenary powers the Native Americans of North American can be viewed as having quasi-sovereign status and can be granted extraordinary prerogatives when so authorized by the Congress; 3) the religions of Native Americans are closely linked to sacred sites in a way that Old World religions are not -- the latter have acquired a certain "portability" and independence from such sites, with the exception of the "pilgrimage" principle; and 4) there is no freedom of religion where a worshipful ambience cannot be provided.

Objectives include: the provision of humane amenities in connection with the access to ceremonial/sacred sites for non-recreational purposes; 2) the gathering of natural materials for ceremonial purposes as long as this activity does not adversely impact park resources; and 3) voluntarily providing in an affirmative manner, Native American in-put and review of interpretive materials and programs which deal with Native Americans, or with their resources, image, or programs. We wish to continue to provide planning and technical assistance through our cooperative activities program, and we are willing to negotiate the appropriateness of certain categories of objects for exhibit purposes.

The Service, however, must retain land-managing responsibilities in the National Parks, and control of its interpretive program. It does not want to permit hunting in the parks, nor to terminate its archeological program. Furthermore, it cannot legally relinquish any part of its archeologically retrieved scientific collections, either presently located in parks or in the custody of contracting institutions, except through established lending procedures.

The purpose of our position paper was to extract a more timely response from the review process than was then in progress, and in this, we were highly successful. At the request of the Solicitor's Office, the position paper was withdrawn from the surnaming process, and discussions were held. The proposed position was held to be overbalanced toward advocacy. Instead, it was recommended that the Service strive to protect its, and the Secretary's, management options. It was also recommended that the language in the Redwoods Enlargement Act be cited so as to maintain a protective posture toward park resources and to resist special uses which might result in negative impacts upon those resources by special interests.

The transubstantiation of Senate Joint Resolution 102 into Public Law 95-341 has reoriented the efforts of all of us. Section 2 of the Act calls upon the President to direct all appropriate Federal agencies too review and evaluate their laws, policies, regulations and procedures, and to identify those which impact, or impose constraints on the practices of Native American religions. Where such points of conflict are identified, consideration is to be given to the practicability of resolving them through internal procedures or by requesting new legislation. The President is to submit his report to Congress in August of 1979. The Service, and the entire Department of the Interior, are to respond in January. In conducting their review and evaluation, the agencies will consult with Native American traditional religious leaders. This process is now getting underway.

Comments or questions on the issues discussed in this article may be addressed to the author, CRM Division, WASO, National Park Service, 18th & C Streets, N.W., Washington, D.C. 20402, or telephone (commercial) 202-343-2719.

A FRIENDLY REMINDER

The CRM BULLETIN provides you with a channel for communicating with other NPS employees engaged in CRM activities. Articles, research project reports, letters to the editor--all are welcomed. The address--Editor, CRM BULLETIN, NPS, Room 1219, Dept. of Interior, Washington, D.C. 20402.

DATA SYSTEMS SUPPORT OF CRM PROGRAMS

By
Margaret Morgan

Several Cultural Resources Management programs involve the compilation, manipulation, and dissemination of large quantities of data. Personnel and budgetary restraints prohibit manual processing of this data, and so our people in Washington and the field have turned to computers for help. The following article by a member of the Data Systems Division staff briefly outlines those computer programs, both operational and in the developmental stages, that support cultural resources management activities.

The Editor

The Data Systems Division, WASO, provides support to several Park Service offices which have responsibility for managing our cultural resources. I have listed several programs with which Data Systems personnel are working to aid those Service employees in identifying and monitoring preservation/maintenance activities for our archeological and historical properties.

List of Classified Structures (LCS)* - A data base of all NPS classified structures was designed, developed, and implemented on the NPS computer facility. The 10,000 preservation units of data on the LCS are recorded, updated, and retrieved using INQUIRE. Maintenance and retrievals of LCS information are done by Susan Sherwood, a classical archeologist and staff member of the Historic Architecture Division, without assistance from Data Systems personnel. (For more information on the LCS, see the CRM BULLETIN, Vol. 1, No. 1.)

CRM Bibliography* - A bibliography of NPS historic studies, historic structures reports, archeological studies, management plans, general resources studies, artifact data, other data related to preservation units on the List of Classified Structures and the Classified Sites Inventory. (Technical preservation data, National Bureau of Standards materials testing reports for example, will also be included in the bibliography.) The bibliography will also contain data relating to the National Catalog (see below), now being developed by the Museum Services Division at Harpers Ferry Center.

Classified Sites Inventory (CSI) - A program, still essentially in the planning stages, which will pinpoint historical and archeological sites. Designed to complement the LCS and CRM Bibliography, it will coordinate input from NPS archeological centers, and Regional officers providing NPS managers with timely and meaningful information regarding the culturally significant sites for which they have stewardship. Presently, the Midwest Archeological Center is pursuing a paralle project to computerize data collected in their Inventory of Archeological Sites.

Data Systems Division personnel (from the left) Mary Jo Keenan, Ginny Whitehill, Greg Schalliol, Jim Guglielmino, and Margaret (Peggy) Morgan.

The National Catalog - Data Systems is now working with Museum Services Division personnel in developing an automated system to manage and retrieve data regarding museum quality artifacts for which the Park Service has responsibility. A prototype system will be developed, using INQUIRE, with the Harpers Ferry Museum records, enabling NPS curators to review system features prior to implementation of the system on a Service-wide basis. A portable, lowspeed computer terminal is now located at Harpers Ferry Center to support this effort.

C&O Canal Artifact Management Information System - An automated system, using INQUIRE, is being designed and developed by Data Systems personnel to facilitate the management and analysis of information relating to sites excavated and artifacts recovered along the C&O Canal. An extensive taxonomy has been developed by archeologists working on the canal. The taxonomy will be used to categorize artifact and site data for the comprehensive analyses required by the archeologists in their studies of the information. The majority of the information retrievals and report generation will be done by archeologists who have attended INQUIRE training courses. Data Systems will provide technical support to the archeologists as required.

San Juan River Basin Project - Personnel from the Remote Sensing Division, Southwest Cultural Resources Center have been discussing the use of the NPS Cartographic Information System (TIGRIS) to analyze several of the maps containing cultural and natural resources in the San Juan River Basin (New Mexico) study area. The computer programs perform analyses for which manual techniques are expensive, labor-intensive, or practically unfeasible. The use of a computer for cartographic analyses ensures both accuracy, quality, and timeliness of the product. The San Juan maps require further analysis before an operational phase of computer support can begin.

Automated Mailing Lists* - The Divisions of History and Anthropology both maintain mailing lists using a software program designed by the Data Systems Division. Individuals and institutions receiving complementary copies of the divisions' publications and reports are placed on these lists. Several non-CRM divisions in the Washington Office, as well, maintain such lists. Mailing labels and paper listings can be provided in alphabetical or zip code order. In addition, other sub-categories can be used for sorting purposes. A user's guide for this program is available from Data Systems.

In you have any question concerning List of Classified Structures or the CRM Bibliography, as well as the CSI, contact Susan Sherwood, Historic Architecture Division, WASO, at 202-343-2723. Art Allen of the Harpers Ferry Center, 304-535-6371, will have the latest information on the National Catalog. Status information on the remaining projects discussed in this article can be obtained from Al Gunther at 202-523-5124.

*Indicates this is an operational program.

COMING IN JANUARY 1979!

KIVA, CROSS, AND CROWN: THE PECOS INDIANS AND NEW MEXICO: 1540-1840, John L. Kessell, Government Printing Office.

Dr. John Kessell, recognized authority on the Southwest's colonial period and author of the book, Friars, Soldiers, and Reformers (University of Arizona Press), is no newcomer to professional publications, having worked as a freelance researcher/writer for scholarly journals, in addition to his Park Service contributions as a historian. His book, containing over 300 illustrations, captures the social climate and historical topography of Spain's "New" Mexico. Dr. Kessell's book spans Southwestern history from the Spanish "Entradas" through the abandonment of Pecos Pueblo in 1840.

A CROSS-CULTURAL APPROACH TO CULTURAL RESOURCES MANAGEMENT

By
Jane Scott

The lands of the Navajo and Hopi Indians are tremendously rich in resources we call archeological sites. For years these sites have remained relatively undisturbed, respected, and often actively protected by Indian people. Today, however, land-disturbing activities are dramatically increasing on both the Navajo and Hopi Reservations. Coal and uranium reserves are being mixed, and the landscape is being altered by the construction of new roads, utility lines, housing, and schools.

Fortunately, the impact of this intensive land-modification is being carefully controlled through a combination of tribal and federal programs related to cultural resource preservation. The National Park Service became involved in the effort through the Indian Cultural Resources Assistance Program, a division of the Southwest Cultural Resources Center in Santa Fe. The program assists the Navajo and Hopi Tribes, ensuring that all federally-approved mining and construction activities on their lands are in compliance with cultural resource preservation laws and regulations.

In 1977, the program produced two bilingual slide-tape programs that expound on the subject of cultural resource preservation. One program was prepared specifically for Navajo audiences and the other for Hopi audiences. The work of assembling the slide-tape programs involved sustained cooperation between the National Park Service and the Tribes, a highly educational experience for those of us involved.

We began, at the NPS end, by preparing rough scripts for the slide programs. Our goal was to explain the nature of archeology, and the role of archeologists in preventing damage to sites caused by construction and mining. Separate scripts were prepared for Navajo and Hopi programs, since the issues and concerns of the two groups differed. Then began a long series of trips from Santa Fe to Indian country. We began working with officials and other members of the Tribes to get advice on the direction of the programs.

The scripts changed form repeatedly as they were adapted to express messages relevant to each Indian group. We soon found that among the Hopis, pothunting and vandalism were a serious threat to sites. Guided by the tribal government, the tribal police, and the curator of the Hopi Cultural Center Museum (who has prepared an exhibit on the subject), we we incorporated into the slide program a strong message against pothunting. We explained the tribal and federal laws that prohibit pothunting, and stressed the penalties against the activity. With the help of museum officials and tribal police, we took slides of badly pothunted sites and of Hopi policemen patrolling ruins. While our own inclination was to condemn pothunting as the destruction of a scientific record, our Hopi advisers taught us to condemn it also as a sacrilege. Hopis regard many archeological sites as sacred shrines.

In Navajo land, we found a growing interest in cultural resources management. We worked closely with the Navajo Nation Cultural Resources Management Program, a team of professional archeologists and trainees who perform many of the surveys and excavations on Navajo lands. These advisers reworked our script to emphasize the importance of archeological methods in recording changes in Navajo lifeways. Similarly, they strongly encouraged Navajo students to become educated in archeology, and to take part in the effort to protect and study sites on Navajo lands.

Translating the programs into Hopi and Navajo languages provided opportunities for further refinement of the message. Our Hopi translator, in addition to producing a script in the Hopi language, reworked the language of the English narrative to more accurately reflect Hopi ways of thinking. The Navajo translator developed a Navajo narrative that provided more detailed explanation of several processes referred to in the English script. She described tree-ring dating from a Navajo point of view. "The tree tells us how old it is," she concludes. In both Navajo and Hopi, we aimed for a translation not just of words but of whole ideas.

Translators, as well as Indian photographers, gave us advice on the arrangement of slides. Photographs showing bone material were omitted from the Navajo program out of respect for religious tradition. A slide of petroglyphs was originally used in the Hopi program to illustrate a general message about prehistoric lifeways, but Hopi advisers recognized the petroglyph as a clan symbol and rearranged the slide to correspond with a narrative section on clan histories.

Every refinement brought us closer to a genuinely Indian message, and further from one dictated by our own views of historic preservation. The Indian leaders we worked with were so advanced in their thinking about cultural resource management that we learned from them enormously. Their advice not only helped us to produce successful slide programs, but also to better understand the Navajo and Hopi cultures.

As finally completed, both slide-tape programs include a discussion of the process of learning that we call archeology, and the value of archeological studies in preserving knowledge about tribal history. Both stress the religious as well as the scientific importance of sites, and both urge protection of sites from man-caused damage. In both porgrams, the archeologist's role in protecting cultural resources is explained.

Since completion a year ago, the programs have been shown to Hopis and Navajos in classrooms, museums, tribal council meetings and on educational television. Response has been positive, and the preparation of tapes in the Indian language as well as in English has proved very important. It was probably no coincidence that members of one Navajo chapter meeting voted, after viewing the slide program, to establish a tribal archeological park in their chapter area.

As part of the larger program of cultural resource management on Hopi and Navajo lands, the slide programs have successfully urged protection and preservation of precious archeological resources.

In addition, they have significantly demonstrated willingness on the part of the Park Service to assist in the development of interpretive materials geniunely meeting the needs of involved tribal groups. Such cooperation has helped to solidify the mutual respect of Indian groups and Park Service personnel while advancing the appreciation of Indian heritage to a wider audience.

Jane Scott is a park technician with the Southwest Cultural Resources Center, SWRO, Santa Fe.

Instrumentation for the Nondestructive Exploration of Cultural Resources, the second supplement to Remote Sensing: A Handbook for Archeologists and Cultural Resource Managers is presently in press and hopefully will be ready for public sales by the Holidays. The Remote Sensing series is a joint effort of the Remote Sensing Division, SW Cultural Resources Center, and the Division of Anthropology, WASO.

REMOTE SENSING TO SUPPORT MANAGEMENT IN RESEARCH AT WHITE SANDS

By

James I. Ebert
and
Galen N. Brown
Southwest Cultural Resources Center

In response to a request from White Sands National Monument Superintendent Jim Thompson, the authors met with Monument personnel and Dr. William Reid of the University of Texas (at El Paso) on July 10 and 11. These discussions led us to the conclusion that we could effectively apply remote sensing techniques to the research and management requirements of the Monument.

July 10 was spent with Dr. Reid reconnoitering the Monument's central area, and the southern and eastern extent of its dune field. Reid is presently studying plant succession in the Monument, and for this reason is interested in the dynamics of dune formation and movement. While studies carried out in the 1950's indicated that some dune fronts may have been moving as much as 30 feet per year (a figure often quoted in the interpretive material at the Monument), neither Dr. Reid nor other personnel there believe they have seen evidence of such rates. Many areas in the Monument, especially on the eastern-most periphery of the dune field, host vegetation which is probably several years old, offering further evidence of the lack of rapid dune movement. It is clear from preliminary inspection of aerial imagery of the area that dune movement is taking place at different rates in different parts of the field, and variations in rates of movement over time may have also occurred. We hope that imagery taken at different times will enable us to measure these differential rates of dune movement.

Following the field reconaissance with Mr. Reid, existing imagery on hand at the Monument was inspected with Superintendent Thompson and members of his staff at Monument headquarters. Imagery reviewed included Soil Conservation Service orthophoto quads at a scale of 1:25,000 taken in 1947, a mosaic compiled by White Sands Missile Range at 1:30,000 in 1973, and U.S. Geological Survey mapping imagery at approximately 1:24,000 exposed in 1972. We anticipate further imagery searches will locate additional imagery, including high-altitude color and color infrared.

On July 11, we conducted a more in-depth field inspection in the Monument, concentrating on cultural resources. Of particular interest were a number of features which had been explained as "hearths". These consist of high mounds of consolidated sand, darker in color than the surrounding looser, active sands. They occur primarily in interdunal areas between presently active dunes. The explanation offered for their occurrence was the past use of fires for processing large amounts of vegetable matter. These fires welded the sand grains together, and left areas which later were less susceptible to erosion by wind or water than unburned areas. Inspection of approximately 20 of these features revealed that while some contained charcoal and ash in their top layers and were surrounded by sparse scatters of chipped stone and pottery, others showed no evidence of cultural associations. It was also observed that these features often occurred in a linear arrangement, suggesting a dune front, and that below their top layer, they were bedded in a manner similar to more modern dunes. These features are almost undoubtedly the remnants of dunes much older than those presently active at White Sands, something which has interesting implications for the study of palaeoclimate and for cultural resources management there. Since the older dunes are darker in tone than presently active sands, it should be possible to delineate areas of their occurrence -- in effect, the fronts of ancient dunes -- using aerial imagery. The scale of existing USGS and other mapping imagery will probably be too small to allow such interpretation, and it may be necessary to fly imagery at a scale of approximately 1:1000 over selected areas of the Monument.

During the July 11 field check, it was felt that three and possibly more periods of dunes activity could be seen from the ground. Ostensibly, these periods would have been separated by periods during which active dunes were not being generated or were not moving. The relative stability of sand surfaces in White Sands today seems dependent upon the water table, and it was reasoned that a higher water table at times in the past would discourage both the production of aeolian transported gypsum sand in the vicinity of Lake Lucero and the movement of dunes at the outer edges of the field. Fortunately, a record of the occurrence if not the dates of higher water tables in the White Sands area is given by the abandoned shoreline features immediately surrounding Lake Lucero. The inspection of a portion of a LANDSAT image of the Monument on hand at headquarters indicated that such features can easily be interpreted and measured using space imagery. While the paleoclimatic implications of successive periods of sand dune production and migration are reasonably straightforward, their meaning for cultural resources management and research is less obvious. Since White Sands National Monument is an ongoing field operation and is heavily visited, the conservation of cultural resources is of prime importance. It was apparent in the field that exposed ancient dunes or "hearths" were deteriorating at a rapid rate, probably due more to natural forces the cultural ones. Other ancient remnants are probably covered by active dunes and are for the moment not being impacted by these forces. The fact that ancient dune remnants are exposed in some parts of the Monument and not in others suggests that the rates of dune movement -- and hence spacing between dune crests -- were different in the past and the present. If this is true, then the exposure of ancient dune remnants and the cultural materials which they at times exhibit is the function of the beat frequency between present and past dune crest frequencies. Using aerial imagery, it should be possible to determine this frequency and to predict with some degree of accuracy areas where ancient dunes will be exposed in the future. This would allow the managerial staff at the Monument to concentrate conservation efforts in these areas where they will be most necessary, possibly over a period of 20 or more years.

This sort of prediction, coupled with a sampling stratification of the Monument, which will be compiled using space and aerial imagery, can also serve as input to cultural resources assessment activities. A limited portion of the Monument has been archeologically surveyed, and more efforts of this sort will undoubtedly occur in the future. It would be to the advantage of both survey archeologists and the National Park Service to have guidelines which would point to critical parts of the Monument and suggest the sorts of data which should be sought.

As presently foreseen, activities to be carried out in conjunction with the White Sands remote sensing project will consist of the following stages :

Phase I:

A. Search for extant remote sensor imagery and data.

B. Acquisition of available imagery.

See WHITE SANDS, page 12.

POLICY CORNER

Historic Structure Reports

By
Harry W. Pfanz
Chief Historian, WASO

"The Historic Structure Report (HSR) for the house is pretty good," said a park historian recently. "But it gives no information on troop movements nearby."

If "why should it" is not your immediate response, stop for a moment and consider what a Historic Structure Report really does. Functionally speaking, it should supply information to support preservation work on a specific structure. It is a guide for historical architects, landscape architects, furnishing planners, and others doing preservation work on a structure. It might or might not contain information of use to others.

The HSR is a part of the construction process and has traditionally been financed with construction funds. When measured against the need, these funds are scarce. Historical (and archeological) data can be essential in these reports, but undue research only increases the drain on this fund source, a drain that is hard to justify. What use could information on nearby troop movements or an extensive account of a building's function be if the structure requires only the preservation of fabric as it exists or the replacement of deficient elements? On the other hand, an extensive restoration job could require extensive historical research in support of the project.

When doing an HSR, a historian will often encounter valuable data not pertinent to the project at hand. What should he do with it? Here common sense must govern. The data might be simply copied for the park's files; it could be placed in the body of the report if it is compatible; it might even be placed in an appendix or prepared as a separate short report. If extensive, note its location and go back for it later in the preparation of a historic (cultural) resource study. Whatever the action, it should not get in the way of the project at hand or burden the contruction fund source. In the event that the park requires extensive data for interpretive or other purposes, and such data seems best collected in the course of HSR preparation, the park might request a companion resource study supported by operating funds. The researcher might then kill two birds with one large stone, and what might emerge would be a combination study presented in a format serving both ends.

The Activity Standards, Part IV, are still in effect and serve as a guide in the preparation of reports. New guidelines are in the offing to replace them, but the essential requirements will not change. These standards should be understood by park and regional personnel, and by programmers and researchers using them in the preparation of task directives. The final product, the HSR, should then be measured against them. Be it lengthy or brief, the HSR should be mission oriented and serve the need at hand.

IN THIS ISSUE...

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C. Interpretation of extant imagery.

1. Water balance indicators: Lake Lucero shorelines and tonal indications of subsurface water table using LANDSAT imagery.
2. Interpretation of dune features using aerial imagery presently available.
3. Choice of areas suitable for intensive interpretation and study.

D. Field Check of conclusions drawn in Phase I.

Phase II:

A. Planning and acquisition of low-altitude imagery of selected study areas within the Monument.

B. Interpretation and measurement of ancient and present dune characteristics through comparison between successive imagery acquired in Phases I and II.

C. Field check of conclusions drawn in Phase II.

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