

1995

Last Update: 02/15/95
Initial Proposal: 1993

Title : INTEGRATED PEST MANAGEMENT

Funding Status: Funded: 12.50 Unfunded: 50.00

Servicewide Issues : N24 (OTHER)
N04 (NON-NAT ANIMAL)
Cultural Resource Type: COMB (Combination)
RMAP Program codes : H00 (Pest and Hazard Management)
H01 (Integrated Pest Management)

10-238 Package Number :

Problem Statement

Pests threaten park resources. Wood-infesting pests, including insects and fungal organisms, attack historic structures and trees, resulting in substantial loss. Pests are also implicated in the transmission of disease, such as hanta virus, lyme disease, typhus, and encephalitis. Non-native plants and animals displace native species and alter natural communities. Biting and stinging insects may pose health hazards to employees and visitors.

Description of Recommended Project or Activity

Continue to develop and implement the park's IPM plan. Maintain state certified applicators. Train employees on IPM techniques. Base funding is sought for this action.

BUDGET AND FTES:

-----FUNDED-----					
	Source	Activity	Fund Type	Budget (\$1000s)	FTES
1993:	PKBASE-NR	ADM	Recurring	5.00	0.10
	PKBASE-OT	MIT	Recurring	7.50	0.20
		Subtotal:		12.50	0.30
		Total:		12.50	0.30
-----UNFUNDED-----					
		Activity	Fund Type	Budget (\$1000s)	FTES

Project Statement

ACAD-I-001.000

Last Update: 02/15/95
Initial Proposal: 1993

Priority: 1
Page Num: 0002

Year 1:	MIT	Recurring	10.00	0.20
	ADM	One-time	10.00	0.30
		Subtotal:	20.00	0.50
Year 2:	MIT	Recurring	10.00	0.20
Year 3:	MIT	Recurring	10.00	0.20
Year 4:	MIT	Recurring	10.00	0.20
		Total:	50.00	1.10

(Optional) Alternative Actions/Solutions and Impacts

Continuation of the present program could result in loss or damage to the parks' resources.

Compliance codes : OTHER ()

Explanation: 516 DM6 APP. 7.4 E(2)

Project Statement

ACAD-I-002.000

Last Update: 02/15/95
Initial Proposal: 1993

Priority: 2
Page Num: 0003

Title : DEV. VISTA MGT. PROGRAM FOR CULTURAL LANDSCAPES

Funding Status: Funded: 18.00 Unfunded: 190.00

Servicewide Issues : N08 (CULT LANDSCAPE)
Cultural Resource Type: CULL (Cultural Landscape)
RMAP Program codes : V00 (Vegetation Management)
V01 (Native Terrestrial Plant Management
and Monitoring)

10-238 Package Number :

Problem Statement

Few historical vistas currently exist due to loss from encroaching vegetation. Historically, there were over 200 vistas within the park which were maintained for the public's enjoyment. These were located on the popular Park Loop Road, the carriage road system, and in other popular visiting areas. In 1987, several historic vistas were rehabilitated by park staff, and other areas were cut to create new vistas. However, there was never a cyclic maintenance program implemented to maintain the vistas once cut and stumps quickly resprouted and obscured the view. These vistas need to be rehabilitated through sound vegetation management practices based on NPS policies, and provisions made for their maintenance.

Description of Recommended Project or Activity

All historic vistas should be identified and documented based on historical records. All areas that are now overgrown need to be assessed before any maintenance activities occur to insure that rare or endangered plants or animals are not affected by proposed cyclic maintenance. Each vista assessment should also consider rehabilitation and maintenance costs, environmental impacts, historical changes in the view, and other factors. Plant species lists need to be compiled for each vista area along with a cyclic maintenance program to insure work is conducted within the proper timeframe for each area. All vistas need to be incorporated into the Park's GIS and maintenance management system. The issue of stump sprouting must be addressed and incorporated into the Integrated Pest Management Plan. Where appropriate, alternative methods of maintenance should be investigated. These might include the use of fire, mowing, or other mechanical methods, or encouraging the establishment of low-growing aggressive native plants. Without the development and implementation of a Vista Management Plan, the historic scene will continue to be lost and rehabilitation costs will continue to rise. Visitors will continue to complain about the loss of scenic values, especially

Project Statement

ACAD-I-002.000

Last Update: 02/15/95

Priority: 2

Initial Proposal: 1993

Page Num: 0004

on the east side of Mt. Desert Island where revegetation following the 1947 fire continues to obscure historic views.

BUDGET AND FTES:

-----FUNDED-----					
	Source	Activity	Fund Type	Budget (\$1000s)	FTES
1994:	UNIV-COLL	MIT	One-time	5.00	0.00
	CONSTRUCT	MIT	One-time	10.00	0.75
	PKBASE-NR	MIT	Recurring	3.00	0.40
			Subtotal:	18.00	1.15
=====					
			Total:	18.00	1.15
-----UNFUNDED-----					
		Activity	Fund Type	Budget (\$1000s)	FTES
Year 1:		ADM	One-time	25.00	1.00
Year 2:		ADM	One-time	15.00	0.50
		MIT	Recurring	50.00	3.00
			Subtotal:	65.00	3.50
Year 3:		MIT	Recurring	50.00	3.00
Year 4:		MIT	Recurring	50.00	3.00
=====					
			Total:	190.00	10.50

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EA (ENV. ASSESSMENT)
ESA (ENDANGERED SPECIES ACT)

Explanation: NEPA

Project Statement

ACAD-I-003.000

Last Update: 02/15/95

Priority: 3

Initial Proposal: 1992

Page Num: 0005

Title : DEVELOP VEGETATION MANAGEMENT PLAN-BAKER ISLAND

Funding Status: Funded: 0.00 Unfunded: 25.00

Servicewide Issues : N08 (CULT LANDSCAPE)
Cultural Resource Type: CULL (Cultural Landscape)
RMAP Program codes : V00 (Vegetation Management)
V01 (Native Terrestrial Plant Management
and Monitoring)

10-238 Package Number :

Problem Statement

Baker Island is a 160 acre island located 4 miles from Mount Desert Island and is a part of Acadia National Park. Baker Island has a long history of human occupation dating to 1806 when it was first settled by William Gilley. Between 1806 and 1825, much of the island's forest cover of spruce, fir, birch and beech was cut for lumber and fuel and to accommodate agriculture and grazing. In 1828, a lighthouse and keeper's quarters was built on a high point near the center of the island. The original lighthouse and quarters were replaced in 1856. Although the island once supported some sixty inhabitants and a schoolhouse by the early 1900's permanent occupation of the island had significantly declined. With the demise of active grazing and agriculture much of the cultivated land and pastures began the long process of forest succession. In 1955 the lighthouse was automated. In 1958, the U.S. Coast Guard transferred the lighthouse and keeper's quarters to the National Park Service. The deed which conveyed the property to the NPS retained for the USCG a 20x20 foot plot which surrounds the light tower and also stipulates that no construction or natural growth will be permitted on the land conveyed which would obstruct the view of the light. In 1987, Acadia National Park, in cooperation with the USCG did some selective cutting of trees to allow for continued use of the light as an Aid to Navigation. This cutting was done without the aid of a Cultural Landscape Report or professionally prepared Forest Management Plan. In 1991, the Draft General Management Plan for Acadia was released for public review. Although written comments are still being assembled there appears to be strong support to retain certain culturally significant park landscapes including Baker Island. More importantly, the USCG in November of 1991, announced its intent to deactivate the Baker Island Light due to encroaching vegetation and to replace this vital aid to navigation with a lighted marine buoy. Public response was overwhelmingly in favor of keeping the lighthouse and managing vegetation to ensure clear visibility of the light. In December of 1991, USCG and the staff of Acadia meet to outline a strategy to retain the light as an aid to Navigation. At that meeting it was decided that Acadia would take the lead role in assessing and managing vegetation on

Project Statement

ACAD-I-003.000

Last Update: 02/15/95

Priority: 3

Initial Proposal: 1992

Page Num: 0006

Baker Island as required by the deed of transfer. The University of Maine, College of Forest Resources, conducted a forest inventory and assessment of the island at no cost to the Service during May of 1992 and 1993. The forest inventory and assessment report is currently under review by park management. In addition, the North Atlantic Regional Office funded a Cultural Landscape Assessment of the island through the Olmstead Center for Cultural Landscapes. The Cultural Landscape Report is expected shortly.

Description of Recommended Project or Activity

A cultural landscape assessment, prepared by the National Park Service, is urgently needed to provide guidance and direction, delineate the cultural and natural zones of the island and establish parameters for the forest inventory and vegetation management. Additional surveys for rare, threatened and endangered plant species by a professional botanist will be required. Funding will be used to cover salary, travel, and per diem for a Regional Landscape Specialist and Schedule A scientist.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	25.00	0.25
Total:			25.00	0.25

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : NHPA ((106) NAT. HIST. PRES.)
EA (ENV. ASSESSMENT)

Explanation: NEPA

Project Statement

ACAD-N-001.000

Last Update: 02/17/95
Initial Proposal: 1993

Priority: 2
Page Num: 0007

Title : BASEFUND/UPGRADE ADMIN. OF NAT. RES. MGT. PROGRAM

Funding Status: Funded: 0.00 Unfunded: 1064.00

Servicewide Issues : N24 (OTHER)
Cultural Resource Type:
RMAP Program codes :

10-238 Package Number :

Problem Statement

The Resource Management Division professional staff and operations have grown significantly in the past five years. Prior to 1990, ACAD did not have base funding for its natural resource operations. In the next five years it is expected to grow further, as well as absorbing Cultural Resource Management and the Lands Program. In 1991-1992, a target organization was developed for the entire park defining the positions/functions needed to fully meet the needs and mission of the park. In resource management, the following key positions were identified to reach this target level:

1. GIS Specialist-the park has taken significant steps in acquiring basic digital data and has a shoestring GIS capability in place. What is needed is a full time GIS Specialist to oversee the entire GIS function (data management, support to other staff etc.)
2. Wildlife biologist-the park has no one person on staff to handle the multitude of wildlife issues and problems that arise. These duties are shared between a variety of staff, usually as some form of crisis management.
3. Clerk-one function that has not grown concurrently is administrative and clerical support. It is a continuing struggle to maintain the division's library, files, budget, and recently completed bibliography. This process consumes considerable staff time.
4. Compliance Specialist-duties are currently handled part time by one staff person with an already full work load. The compliance workload at the park continues to grow with Federal Highways projects, the Carriage Road rehabilitation, and external development impacting the park. Additional positions will be needed too, and full staffing will allow the division to begin needed inventory and monitoring, implement shelved projects, develop detailed management plans for specific issues, and handle more effectively the periodic crises that occur.

To support the already increased staff and anticipated absorbing of other functions (lands, cultural resources), the division will require a major increase in its infrastructure. Perhaps the most pressing need is for work space. At present, there is not enough work space for existing permanent staff. Seasonal staff and

Project Statement

ACAD-N-001.000

Last Update: 02/17/95

Priority: 2

Initial Proposal: 1993

Page Num: 0008

visiting researchers are crowded in wherever and whenever there is room. Additional vehicles, upgraded and expanded laboratory facilities, a GIS Work Station computer, and storage for equipment, records, artifacts and library collections are among the many support functions needed.

Description of Recommended Project or Activity

Additional staff are needed to implement a variety of projects that are not now being addressed. Although this Park has been in operation for approximately 75 years basic data is inadequate for the protection of resources. An increase in staff and operating expenses would allow the initiation of "in-house" projects heretofore not initiated which include basic collection of data.

BUDGET AND FTES:

		-----FUNDED-----		
Source	Activity	Fund Type	Budget (\$1000s)	FTES
Total:			0.00	0.00
		-----UNFUNDED-----		
	Activity	Fund Type	Budget (\$1000s)	FTES
Year 1:	ADM	Recurring	156.00	4.00
	ADM	One-time	440.00	0.00
Subtotal:			596.00	4.00
Year 2:	ADM	Recurring	156.00	4.00
Year 3:	ADM	Recurring	156.00	4.00
Year 4:	ADM	Recurring	156.00	4.00
Total:			1064.00	16.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Project Statement

ACAD-N-001.000

Last Update: 02/17/95

Priority: 2

Initial Proposal: 1993

Page Num: 0009

Explanation: 516 DM2 APP. 2, 1.1-1.3 ADMIN.

Project Statement

ACAD-N-003.000

Last Update: 01/11/95
Initial Proposal: 1989

Priority: 1
Page Num: 0010

Title : EFFECTS OF OZONE ON VEGETATION

Funding Status: Funded: 577.00 Unfunded: 30.00

Servicewide Issues : N14 (AIR POLLUTION)
N17 (BIODIVERSITY)

Cultural Resource Type:

RMAP Program codes : V00 (Vegetation Management)
V01 (Native Terrestrial Plant Management
and Monitoring)

10-238 Package Number :

Problem Statement

Ozone monitoring has been conducted at ACAD since the early 1980's. Ozone concentrations have exceeded both the state and federal limits for adversely impacting human health. At the same time research has been carried out to determine the effects of ozone on local vegetation. Although white pines have exhibited symptoms of what is believed to be ozone exposure (Treshow 1984, Tingey 1987, Sanchini 1988), several questions remain regarding the representation of ozone injury, confusion with other causal agents, and sampling regimes. In addition, information is even more sketchy regarding other plant species. These factors have been fully detailed in Eckert (1989). To fully understand the impact of elevated ozone concentrations on the environment it is essential to determine the effects of ozone on vegetation within ACAD.

Description of Recommended Project or Activity

This project will involve a multi-faceted research approach. Research objectives are several and include: 1) determine relative ozone sensitivities and symptoms as well as the spectral signatures of different plant species; 2) establish permanent plots to conduct long-term monitoring of ozone effects on vegetation; 3) determine if within-species genetic diversity and ecological structure trends correlate with ozone levels; 4) determine if there is any genetic difference between symptomatic and asymptomatic white-pines and how this compares to the general population; 5) develop base-line data which includes visible and cellular-level ozone injury symptoms, reflectance values correlating with ozone damage, and species diversity measures.

Project Statement

ACAD-N-003.000

Last Update: 01/11/95

Priority: 1

Initial Proposal: 1989

Page Num: 0011

BUDGET AND FTEs:

			-----FUNDED-----		
	Source	Activity	Fund Type	Budget (\$1000s)	FTEs
1989:	AIR-QUAL	RES	One-time	40.00	0.00
1990:	AIR-QUAL	RES	One-time	125.00	0.00
	RG-NS-RES	RES	One-time	25.00	0.00
Subtotal:				150.00	0.00
1991:	AIR-QUAL	RES	One-time	100.00	0.00
	RG-NS-RES	RES	One-time	25.00	0.00
Subtotal:				125.00	0.00
1992:	AIR-QUAL	RES	One-time	100.00	0.00
	RG-NS-RES	RES	One-time	25.00	0.00
Subtotal:				125.00	0.00
1993:	AIR-QUAL	RES	One-time	100.00	0.00
1994:	AIR-QUAL	RES	One-time	37.00	0.00
Total:				577.00	0.00

			-----UNFUNDED-----		
		Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:		RES	One-time	30.00	0.00
Total:				30.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4 E(2)

Project Statement

ACAD-N-007.000

Last Update: 02/28/95

Priority: 3

Initial Proposal: 1991

Page Num: 0012

Title : COYOTE-DEER INTERACTIONS

Funding Status: Funded: 191.00 Unfunded: 0.00

Servicewide Issues : N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : W06 (Native Animal Species Population Management)

W01 (Native Terrestrial Animal Management & Monitoring)

10-238 Package Number :

Problem Statement

The natural range expansion of the coyote into Maine has caused considerable controversy among land management agencies and the general public. This issue has generated much interest from both a regional and national perspective. Baseline data has been collected on coyotes on MDI and an initial research project has recently been completed (see N-04).

Coyotes are known to prey on white-tailed deer. In fact, there is considerable evidence that the diets of coyote pups in Maine consist almost entirely of white-tailed deer fawns during May-July (Harrison and Harrison 1984).

Establishment of a coyote population on MDI has already created conflicts with adjacent landowners and conservation groups. The deer population is a highly visible resource and purported coyote predation on deer had already generated much concern. Management must know the effects of coyote predation on deer densities which in turn greatly affect the Park's vegetation.

Description of Recommended Project or Activity

Assess the size, distribution, and spatial organization of coyote home ranges in and around ACAD on MDI with specific attention to the interactions with white tailed deer. Determine family group size and document if limited population exchange with the mainland affects social organization and predatory behavior (i.e., delayed dispersal and pack formation). Evaluate adaptations of coyote populations to an island environment. Estimate coyote populations and develop a survey technique for future assessment of coyote populations by Park staff.

Estimate white-tailed deer populations and densities in and around ACAD. Determine deer home ranges, dispersal, and movement patterns in relation to the current coyote population. Assess

Project Statement

ACAD-N-007.000

Last Update: 02/28/95

Priority: 3

Initial Proposal: 1991

Page Num: 0013

deer fawn mortality to fully evaluate predator-prey interactions between these two species.

Examine the health of both the coyote and deer populations with respect to their current status. Based on the above information, prepare computer simulation models to evaluate the effects of an insular coyote population on the herbivore-vegetation complex.

BUDGET AND FTEs:

-----FUNDED-----					
	Source	Activity	Fund Type	Budget (\$1000s)	FTEs
1991:	NRPP	RES	One-time	50.00	0.50
1992:	NRPP	RES	One-time	51.00	0.50
1993:	NRPP	RES	One-time	50.00	0.00
1994:	RG-NS-RES	RES	One-time	10.00	0.00
	FED-OTHER	RES	One-time	30.00	0.00
Subtotal:				40.00	0.00
Total:				191.00	1.00
-----UNFUNDED-----					
		Activity	Fund Type	Budget (\$1000s)	FTEs
Total:				0.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4 E(2)

Project Statement

ACAD-N-010.000

Last Update: 01/11/95
Initial Proposal: 1993

Priority: 1
Page Num: 0014

Title : DEVELOP WATER RESOURCE MANAGEMENT PLAN

Funding Status: Funded: 50.00 Unfunded: 0.00

Servicewide Issues : N11 (WATER QUAL-EXT)
N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : Q00 (Water Resources Management)
Q01 (Water Resources Management)

10-238 Package Number :

Problem Statement

ACAD encompasses more than 40,000 acres, including nearly one-third of MDI, Schoodic peninsula, and about half of Isle Au Haut. Numerous lakes, ponds and freshwater streams, and freshwater and estuarine wetlands are located within ACAD. These water resources occur in numerous watersheds few of which lie entirely within the boundaries of the park. Soils in ACAD are thin and predominately of glacial origin. Surface waters are for the most part poorly buffered with low alkalinity levels, and influenced by marine aerosols. Water resource concerns include 1) the potential impact of archaic "overboard" discharge systems (sewage effluent) on marsh, estuary and lakes; 2) possible water resource impacts associated with adjacent development and increased visitor use; 3) wildlife management concerns e.g., fisheries, beaver, otter, waterfowl; 4) vegetation issues e.g., rare species, exotic pests (purple loosestrife), bio-diversity; 5) policy issues involved in the management of "Great Ponds" which are considered to be under state jurisdiction and management and include such uses as hunting, trapping, fish stocking, and a variety of recreational uses. Several recent actions complicate management of MDI water resources including a MDI League of Towns pilot lake sampling project, Hancock County Planning Commission proposed study of Long Pond, and a state/private land owner proposal to dredge little Long Pond (Seal Harbor).

Description of Recommended Project or Activity

The park has contracted with the University of Maine to develop a comprehensive Water Resources Management Plan to guide future management, research and monitoring activities. Several preliminary reports and research studies are ongoing or have been completed. These include a WRD Water Resources Management Plan Scoping report (1991), a Water Resource Baseline Data and Assessment of Impacts from Acidic Precipitation (1985), and Application of a Watershed-Wide Nonpoint Source Pollutant Loading

Project Statement

ACAD-N-010.000

Last Update: 01/11/95
Initial Proposal: 1993

Priority: 1
Page Num: 0015

Model at ANP (1991). Ongoing studies include an ecological assessment of Bass Harbor Marsh, and an updated and ground verified National Wetlands Inventory for ANP. The park has identified this project as its highest water resource need.

BUDGET AND FTEs:

		-----FUNDED-----			
	Source	Activity	Fund Type	Budget (\$1000s)	FTEs
1993:	WATER-RES	PRO	One-time	35.00	0.00
1994:	WATER-RES	PRO	One-time	15.00	0.00
Total:				50.00	0.00

		-----UNFUNDED-----			
		Activity	Fund Type	Budget (\$1000s)	FTEs
Total:				0.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EA (ENV. ASSESSMENT)

Explanation: NEPA

Project Statement

ACAD-N-012.000

Last Update: 02/15/95
Initial Proposal: 1988

Priority: 1
Page Num: 0016

Title : IMPLEMENT PURPLE LOOSESTRIPE MANAGEMENT PROGRAM

Funding Status: Funded: 120.00 Unfunded: 0.00

Servicewide Issues : N05 (NON-NAT PLANTS)
N17 (BIODIVERSITY)

Cultural Resource Type:

RMAP Program codes : V00 (Vegetation Management)
V04 (Exotic Plant Management)

10-238 Package Number :

Problem Statement

Purple loosestrife (*Lythrum salicaria*) is an aggressive invader of wetland systems, displacing native species of great value to wildlife. After five years of preliminary work, ACAD developed a comprehensive purple loosestrife management plan as part of the Integrated Pest Management Plan. The program currently includes prevention of infestations, monitoring of wetlands for the presence of loosestrife, detailed quantitative monitoring where management actions are occurring, chemical applications, education, and outreach efforts to local nurseries and adjacent property owners to eliminate commercial sales and invasion from adjacent properties. The quantitative monitoring program needs to be evaluated (see Project Statement N-76), as does the current schedule for herbicide treatment, and additional work needs to be taken regarding outreach to local nursery owners and adjacent land owners. It is imperative that this program be continued over the long term in order to protect native wetland communities.

Description of Recommended Project or Activity

Continue to base fund the purple loosestrife management program. Implement changes to management strategies based on peer review of program. Expand education/outreach programs and coordination with other agencies, including the state Plant Advisory Board to fully implement the recommendations in the Purple Loosestrife Management Plan. Continue to obtain State pesticide applicator's certification for personnel involved in purple loosestrife management.

Project Statement

ACAD-N-012.000

Last Update: 02/15/95

Priority: 1

Initial Proposal: 1988

Page Num: 0017

BUDGET AND FTEs:

		-----FUNDED-----			
	Source	Activity	Fund Type	Budget (\$1000s)	FTEs
1988:	PKBASE-NR	MIT	Recurring	15.00	0.70
1989:	PKBASE-NR	MIT	Recurring	15.00	0.70
1990:	PKBASE-NR	MIT	Recurring	15.00	0.70
1991:	PKBASE-NR	MIT	Recurring	15.00	0.70
1992:	PKBASE-NR	MIT	Recurring	15.00	0.70
1993:	PKBASE-NR	MIT	Recurring	15.00	0.70
1994:	PKBASE-NR	MIT	Recurring	15.00	0.70
1995:	PKBASE-NR	MIT	Recurring	15.00	0.70
Total:				120.00	5.60

		-----UNFUNDED-----			
	Activity	Fund Type	Budget (\$1000s)	FTEs	
Total:				0.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : OTHER ()

Explanation: FEPCA, FIFRA, NEPA, STATE REGS.

Project Statement

ACAD-N-013.000

Last Update: 02/28/95

Priority: 2

Initial Proposal: 1993

Page Num: 0018

Title : INVENTORY/EVALUATE FISHERY RESOURCES IN PARK WATERS

Funding Status: Funded: 0.00 Unfunded: 180.00

Servicewide Issues : N20 (BASELINE DATA)
N19 (CONSUMPT USE)

Cultural Resource Type:

RMAP Program codes : W09 (Hunted and Trapped Species
Management)
W08 (Fisheries Management)

10-238 Package Number :

Problem Statement

Although ACAD contains a myriad of freshwater habitats (including streams, lakes, ponds, and bogs), no inventory of native and non-native fish has ever been completed. Baseline species inventories are critical to management of aquatic resources. Incompatible development on adjacent private land, air quality related impacts (acid rain), and fish stocking by the State may threaten these resources. Lack of information prevents managers from assessing degradation. In addition, the Park currently has no input regarding the management of 17 lakes over 10 acres in size (Great Ponds) within the Park. These areas are managed by the State. Ecological and species studies are needed to restore, maintain, and protect park aquatic communities.

Description of Recommended Project or Activity

Following recommendations from the Water Management Plan (Kahl and Hauptman, in press), a freshwater fisheries inventory will be implemented. The project will: analyze tissue samples for bio-contaminants (heavy metals, etc.), compile and analyze historical records of fish stocking in Park waters, analyze historical impacts and develop mitigation strategies, develop strategies for monitoring and recommend management actions.

BUDGET AND FTES:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTES
			=====	
Total:			0.00	0.00

Project Statement

ACAD-N-013.000

Last Update: 02/28/95

Priority: 2

Initial Proposal: 1993

Page Num: 0019

-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	60.00	0.00
Year 2:	RES	One-time	60.00	0.00
Year 3:	RES	One-time	60.00	0.00
Total:			180.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4E(2) DLY RM&RERSRCH

Project Statement

ACAD-N-014.000

Last Update: 03/27/95
Initial Proposal: 1993

Priority: 3
Page Num: 0020

Title : POPULATION SURVEYS OF HARLEQUIN DUCKS

Funding Status: Funded: 0.00 Unfunded: 6.00

Servicewide Issues : N20 (BASELINE DATA)
N02 (T&E ANIMAL)

Cultural Resource Type:

RMAP Program codes : W01 (Native Terrestrial Animal
Management & Monitoring)
W03 (Threatened & Endangered Animal
Management)

10-238 Package Number :

Problem Statement

It is believed that harlequin ducks experienced significant population declines at the turn of the century. Most recent reports indicate that one quarter of the entire wintering population of harlequin ducks in the western Atlantic is centered along the southern coast of Isle au Haut, ME. In addition, this duck has been given "threatened" status in Canada and is a "species of special concern" in Maine. Because this concentration of birds borders NPS property, it is prudent that the NPS and Acadia NP work cooperatively with other agencies conducting baseline data investigations important in the management of this species.

A seven-year data base has been accumulated by conducting both shoreline and boat surveys on and adjacent to Isle au Haut. These surveys have been useful in assessing population numbers, season of use, distribution, sex ratios, and a preliminary critique of field observation techniques around the Isle au Haut area. However, a thorough investigation is needed to address viable long term censusing techniques, migration staging areas, breeding ecology and management techniques, population interaction (genetic exchange), and an assessment of threats on the species and habitat.

Description of Recommended Project or Activity

The Canadian Wildlife Service and the Maine Dept. of Inland Fisheries and Wildlife are working cooperatively in evaluating the status of this species and has proposed elevating the status of this species to a threatened species. The Park has cooperated with surveys and supports further efforts to protect this species until more is known of the ecology, population size and distribution, and the importance of the Park's shoreline and offshore waters to wintering populations.

Project Statement

ACAD-N-014.000

Last Update: 03/27/95

Priority: 3

Initial Proposal: 1993

Page Num: 0021

The Park proposes to cooperate with the previously mentioned agencies in funding research and population inventory efforts. The Park would assist with the winter censusing and research aspect of the overall program. Program products would be a censusing technique(s) that is accurate, statistically valid, and cost effective, established monitoring protocols, park shoreline and offshore protection and management recommendations, information on other shoreline resources and activities (i.e., commercial fishing, etc.), continuing to build the cooperative professional relationship with MDIF&W, and educational information for the park's outreach programs.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
			=====	
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	3.00	0.00
Year 2:	RES	One-time	3.00	0.00
Total:			6.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4E(2)

Project Statement

ACAD-N-015.000

Last Update: 03/27/95
Initial Proposal: 1994

Priority: 1
Page Num: 0022

Title : MANAGE BEAVER POPULATIONS

Funding Status: Funded: 0.00 Unfunded: 0.00

Servicewide Issues : N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : W01 (Native Terrestrial Animal
Management & Monitoring)
W06 (Native Animal Species Population
Management)

10-238 Package Number :

Problem Statement

Several beaver (*Castor canadensis*) were introduced to a few sites on Mount Desert Island in the 1920s. The population grew slowly until a wild fire in 1947 burnt the coniferous forests on nearly half of the island. Deciduous forests became established in burnt areas and provided better beaver habitat along most wetlands and waterways. The beaver population expanded and eventually become distributed throughout the island (some relocation by humans may have occurred). Legal trapping was authorized by the State of Maine (i.e., Department prior to the Dept. of Inland Fisheries & Wildlife) in the 1950s to manage the species. At this same time, beaver human property conflicts became more common along roads affecting facilities in the Park and throughout the island. As the population expanded into most park wetlands, more time by park employees, road crews, and game wardens was spent to protect property and manage beavers.

These conditions prompted the National Park Service (Park) to fund a beaver research project (Mueller-Schwarze 1977) in the 1970s to determine the population density and distribution, family group size and the number of offspring per breeding pair, and habitat quality and years of suitability for beaver populations. Although the Park incorporated the findings into education and interpretive programs, the Park and State (MDIF&W) have not conducted regular population surveys to determine harvest limits and seasons nor in managing beaver conflict sites. Only one active/inactive lodge (i.e., population estimate) aerial survey has been conducted since the Mueller-Schwarze project. Further beaver/human conflict areas have been resolved independently by a variety of federal, state, and private individuals with no longterm objectives or management program.

The present beaver population and distribution on the island and in the Park is unknown, but is believed to occupy most wetlands and waterbodies. Suitable beaver habitat was predicted by Mueller-Schwarze (1977) to decline as hardwood forests reverted to coniferous forests. The Park and town on MDI have recorded increases in human activities (i.e., wild fire suppression,

Last Update: 03/27/95

Priority: 1

Initial Proposal: 1994

Page Num: 0023

housing development and habitat alteration, property division, visitation, etc.) in the rural areas of the island over the last two decades and these activities have further reduced potential habitat. Park biologists (B. Connery, pers. comm.) have found beavers in more poor quality habitat sites in recent years. Trapping pressure has apparently declined with the drop in beaver pelt prices and neither trapping activities nor harvest records are being monitored to assess their affect on the beaver population. Today the number of beaverhuman conflict incidents in the park has steadily increased and now requires more than a full time employee during the summer to manage waterflow devices and other beaver exclusion projects.

The beaver's popularity has grown and observing beavers and beaver habitats has become a favorite activity for visitors, residents, and school children. Beavers, dams, and lodges are viewable at numerous points along the Park's roads (i.e., paved, gravel, and carriage) and trails.

The beaver's popularity requires that the Park consider all options thoroughly, be informative about Park beaver management activities, be interactive with all interested parties and landowners, in finding solutions to conflict sites, and defining longterm management objectives.

Description of Recommended Project or Activity

A long range cooperative beaver management plan (ACAD-N-15.003) is needed to manage the beaver population on MDI. The management plan will assist in protecting habitat for nonpark lands, use local knowledge in reducing conflicts (i.e., roads, etc.), provide information for educational purposes, manage the trapping effort, and monitor the population over time. Preparation of the plan is dependant on specific information about MDI beaver and these information needs are identified in projects (ACAD-N-15.001, ACAD-N-15.002). Until the plan (ACAD-N-15.003) and projects (ACAD-N-15.001, ACAD-N-15.002) are completed, the Park's operational strategy will be reactive to conflict issues and have little means to track and manage the population in cooperation with MDIF&W and island residents. The Park will also be unable to develop a comprehensive beaver management plan with longterm objectives that consider all park resources and operational capabilities.

Project Statement

ACAD-N-015.000

Last Update: 03/27/95
Initial Proposal: 1994

Priority: 1
Page Num: 0024

BUDGET AND FTEs:

		-----FUNDED-----		
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
			=====	=====
		Total:	0.00	0.00

		-----UNFUNDED-----		
	Activity	Fund Type	Budget (\$1000s)	FTEs
			=====	=====
		Total:	0.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4 E(2)

Project Statement

ACAD-N-015.001

Last Update: 03/27/95
Initial Proposal: 1995

Priority: 1
Page Num: 0025

Title : DETERMINE STATUS OF BEAVER POPULATION AND HABITAT
Sub-title:

Funding Status: Funded: 0.00 Unfunded: 5.00

Servicewide Issues : N20 (BASELINE DATA)
Cultural Resource Type:
RMAP Program codes : W01 (Native Terrestrial Animal
Management & Monitoring)
W03 (Threatened & Endangered Animal
Management)

10-238 Package Number :

Problem Statement

The present beaver population and distribution on the island and in the Park is unknown, but is believed to occupy most wetlands and waterbodies. Suitable beaver habitat may be declining as was predicted by Mueller-Schwarze (1977) as hardwood forests revert back to coniferous forests. The Park and communities have recorded increases in human activities (i.e., wild fire suppression, housing development and habitat alteration, property division, visitation, etc.) in the rural areas of the island over the last two decades and these activities have further reduced potential habitat. Park biologists (B. Connery, pers. comm.) have found beavers in more poor quality habitat sites in recent years.

Trapping pressure has apparently declined with the drop in beaver pelt prices and neither trapping activities nor harvest records are being monitored to assess their affect on the beaver population. The number of beaver human conflict incidents in the park has steadily increased and requires more than a full time employee during the summer to manage waterflow devices and other beaver exclusion devices. These issues require a current estimate of the population size and distribution to be used in identifying research needs and in preparing management plans for beavers on MDI and in the Park.

Description of Recommended Project or Activity

The Park recommends an assessment of beaver populations on MDI and in the Park. The two phase project will first determine beaver distribution and the second phase will conduct onsite investigations to estimate familygroup size and habitat conditions. The first phase will be conducted using aerial overflights of the island and map beaver activity (i.e., active inactive lodges or dams). The second phase will use a combination of several population estimation methods to predict beaver numbers per site and evaluate present and future habitat

Project Statement

ACAD-N-015.001

Last Update: 03/27/95
Initial Proposal: 1995

Priority: 1
Page Num: 0026

conditions. Habitat condition will be estimated using accepted habitat condition evaluation methods and repeat measurements taken by Mueller-Schwarze (1977) for direct comparison. The project will register all active beaver areas and those habitat sites most likely to have beaver activity in the future using the Park geographical information system (ARCINFO) and datasets (i.e., wetlands, vegetation types, etc.). Databases will be created to record this project's information and establish a means to monitor beaver populations and habitat conditions.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	MON	One-time	5.00	0.00
Total:			5.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM2 APP. 2, 1.6

Project Statement

ACAD-N-015.002

Last Update: 03/27/95

Priority: 1

Initial Proposal: 1995

Page Num: 0027

Title : DETERMINE BEAVER ECOLOGY ON MDI

Sub-title:

Funding Status: Funded: 0.00 Unfunded: 105.00

Servicewide Issues : N20 (BASELINE DATA)
N01 (NAT ANML OVPOP)

Cultural Resource Type:

RMAP Program codes : W01 (Native Terrestrial Animal
Management & Monitoring)
W06 (Native Animal Species Population
Management)

10-238 Package Number :

Problem Statement

Information on beaver (*Castor canadensis*) populations has been proposed ACAD-N-15.001) and will provide baseline information for longterm management planning. However information on beaver ecology on the island is unknown and limits efforts to determine management actions levels for the beaver population in the Park and on MDI.

Although beaver are believed to occupy most wetlands and waterbodies on the island, the relationship between beaver ecology and the apparent decline in beaver habitat is unknown. MuellerSchwarze (1977) predicted a decline in suitable beaver habitat as hardwood forests revert to coniferous forests. Also, island towns and the Park (Stellpflug and Dellier 1989, NPS 1992) have suggested habitat losses due to the increase in human activities (i.e., wild fire suppression, housing development and habitat alteration, property division, visitation, etc.) in the rural areas of the island. The effect of these activities on habitat availability, dispersal, and reproductive rates is unknown. Park biologists (B. Connery, pers. comm.) have found beaver groups residing in poor quality habitat sites, which support these observations and predictions. Finally, the effect of trapping and liveanimal relocations on the population structure and ecology is unknown.

The National Park Service (Park) funded a beaver research project (MuellerSchwarze 1977) in the 1970s to determine the population density and distribution, to estimate family group size and the number of offspring per breeding pair, and assess and predict habitat conditions. Although the Park incorporated the findings into education and interpretive programs, the Park and State (Maine Dept. of Inland Fisheries & Wildlife) have not conducted regular population surveys to determine harvest limits and seasons nor in managing beaverconflict sites. Only one activeinactive lodge (i.e., population estimate) aerial survey

Project Statement

ACAD-N-015.002

Last Update: 03/27/95

Priority: 1

Initial Proposal: 1995

Page Num: 0028

has been conducted since the MuellerSchwarze project. Further beaverhuman conflict areas have been resolved independently by a variety of federal, state, and private individuals with no understanding of effect of relocations or removing animals from the population.

Description of Recommended Project or Activity

The Park proposes an investigation of beaver ecology on the island. Research efforts would determine dynamics of beaver family groups (dispersal, immigration, sex/age structure of and average numbers per family group), reproductive characteristics (young/female, etc.), and habitat use (seasonal food use, lodges per group per vegetation typehabitat quality). Habitat conditions, trapping effort and harvest levels, and population data would be used to in model population viability as prescribed under different island conditions. This information would be available for management planning and help to identify population levels, thresholds for control activities, trapping seasons and harvest regulations on MDI with MDIF&W. The project will register specific study sites through the Park's GIS program. The project will submit databases and modeling programs (software or written instructions), instructions on updating model parameters with future population information, and recommend population factors to monitor for use in future modeling efforts and in identifying other research needs. Final reports will be prepared in the North Atlantic Region's Natural Resources Technical Report format.

BUDGET AND FTEs:

-----FUNDED-----					
Source	Activity	Fund Type	Budget (\$1000s)	FTEs	
			=====		
Total:			0.00	0.00	
-----UNFUNDED-----					
	Activity	Fund Type	Budget (\$1000s)	FTEs	
Year 1:	RES	One-time	35.00	0.00	
Year 2:	RES	One-time	35.00	0.00	
Year 3:	RES	One-time	35.00	0.00	
			=====		
Total:			105.00	0.00	

Project Statement

ACAD-N-015.002

Last Update: 03/27/95

Priority: 1

Initial Proposal: 1995

Page Num: 0029

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM2 APP. 2, 1.6

Project Statement

ACAD-N-015.003

Last Update: 03/27/95
Initial Proposal: 1995

Priority: 1
Page Num: 0030

Title : DEVELOP COMPREHENSIVE BEAVER MANAGEMENT PLAN
Sub-title:

Funding Status: Funded: 0.00 Unfunded: 40.00

Servicewide Issues : N01 (NAT ANML OVPOP)
Cultural Resource Type:
RMAP Program codes : W01 (Native Terrestrial Animal
Management & Monitoring)
W06 (Native Animal Species Population
Management)

10-238 Package Number :

Problem Statement

Several beaver (*Castor canadensis*) were reintroduced to a few sites on Mount Desert Island in the 1920s. The population grew slowly until a wild fire in 1947 burnt the coniferous forests on nearly half of the island. The fire allowed deciduous forests to become established in burnt areas and provided better beaver habitat along most wetlands and waterways. The beaver population expanded with the increase in suitable habitat and eventually become distributed throughout the island (some relocation by humans may have occurred). Legal trapping was authorized by the State of Maine (i.e., Department prior to the Dept. of Inland Fisheries & Wildlife) with the increased population in the 1950s to manage the species. However, beaverhuman property conflicts became more common along roads and facilities in the Park and throughout the island by the 1960s requiring more time by park employees, road crews, and game wardens to protect property and manage beavers.

The beaver's popularity has grown and observing beavers and beaver habitats has become a favorite activity for visitors, residents, and school children. Beavers, dams, and lodges are viewable at numerous points along the Park's roads (i.e., paved, gravel, and carriage) and trails.

These conditions prompted the National Park Service (Park) to fund a beaver research project (MuellerSchwarze 1977) in the 1970s to determine the population density and distribution, family group size and the number of offspring per breeding pair, and habitat quality and remaining years of suitability for beaver populations. Although the Park incorporated the findings into education and interpretive programs, the Park and State (MDIF&W) have not conducted regular population surveys to determine harvest limits and seasons nor in managing beaverconflict sites. Only one activeinactive lodge (i.e., population estimate) aerial survey has been conducted since the MuellerSchwarze project. Further beaverhuman conflict areas have been resolved independently by a variety of federal, state,

Project Statement

ACAD-N-015.003

Last Update: 03/27/95

Priority: 1

Initial Proposal: 1995

Page Num: 0031

and private individuals with no longterm objectives or management program.

The present beaver population and distribution on the island and in the Park is unknown. The lack of information about the beaver population, ecology, and habitat conditions limits the Park from being proactive in managing beaverhuman conflicts and planning longterm management programs for beavers and other Park resources.

Description of Recommended Project or Activity

A comprehensive management plan is needed to manage the beaver population in the Park and on MDI. The plan will be based on information collected from project statements (ACAD-N-15.001, ACAD-N-15.002) on beaver ecology on MDI, the condition and availability of habitat, present population and distribution of beaver. The Park will share this data with Maine Dept. of Inland Fisheries & Wildlife (MDIF&W) and use it to identify population densities, the role of harvesting and relocation strategies, and annual monitoring programs. The management plan will identify areas not suited for beaver because of other resource concerns and identify who is responsible for the management and monitoring of this species. The management plan will identify the frequency of interagency meetings and the review schedule for technical and management suitability between the Park and MDIF&W. The plan will be prepared following the Park's Editorial Guidelines (1993).

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	MIT	One-time	25.00	0.30
Year 2:	MIT	One-time	15.00	0.20
Total:			40.00	0.50

(Optional) Alternative Actions/Solutions and Impacts

Project Statement

ACAD-N-015.003

Last Update: 03/27/95

Priority: 1

Initial Proposal: 1995

Page Num: 0032

(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM2 APP. 2, 1.6

Project Statement

ACAD-N-017.000

Last Update: 02/28/95
Initial Proposal: 1993

Priority: 1
Page Num: 0033

Title : NESTING ECOLOGY AND SUCCESS OF ANP AREA BALD EAGLES

Funding Status: Funded: 167.00 Unfunded: 0.00

Servicewide Issues : N02 (T&E ANIMAL)
N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : W03 (Threatened & Endangered Animal
Management)
W06 (Native Animal Species Population
Management)

10-238 Package Number :

Problem Statement

The U.S. Fish and Wildlife Service is considering down listing the bald eagle from endangered to threatened status in the continental United States. However, recovery status for the eagle in Maine lags behind many other areas. Although reproduction has increased in recent years, the success rate is still relatively low compared to many other areas around the country. Lingering effects of pesticide residues (i.e., by products of degrading DDE and DDT) are suspect and warrant additional research (Maine Department Inland Fisheries and Wildlife). According to a recent study (Owen and Hodgman 1989) loss of habitat and continued human disturbance may be contributing factors that adversely affect eagle nesting success and ecology. Thus, additional information is needed on eagle nesting ecology and physiology in and around ACAD to understand the ecology of this bird in this coastal ecosystem.

Description of Recommended Project or Activity

The park, in consultation with MIF&W, proposes a research program that would address two management needs. The first would determine pesticide and heavy metals contamination in bald eagles and the effects on reproductive success. The second would address repeated nesting failures at specific nesting sites using an evaluation technique(s) (i.e., a model) that examines the relationships between nesting sites and the quantity and types of activities and local land development to determine the types and timing of adverse impacts to eagles during nesting and at other critical times of the year. The park will solicit recommendations on nest site characteristics, land development standards, and a guide of unsuitable or detrimental activities. The park will work cooperatively with the researcher to develop databases and GI data for future monitoring and management programs.

Project Statement

ACAD-N-017.000

Last Update: 02/28/95

Priority: 1

Initial Proposal: 1993

Page Num: 0034

BUDGET AND FTEs:

-----FUNDED-----					
	Source	Activity	Fund Type	Budget (\$1000s)	FTEs
1993:	RG-NS-RES	RES	One-time	53.00	0.00
1994:	RG-NS-RES	RES	One-time	56.00	0.00
1995:	RG-NS-RES	RES	One-time	58.00	0.00
Total:				167.00	0.00
-----UNFUNDED-----					
		Activity	Fund Type	Budget (\$1000s)	FTEs
Total:				0.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : ESA (ENDANGERED SPECIES ACT)
SEC7 ()

Explanation: ENDANGERED SPECIES

Project Statement

ACAD-N-019.000

Last Update: 01/11/95
Initial Proposal: 1993

Priority: 3
Page Num: 0035

Title : CONSTRUCT GEOG. THEME MAPS FROM EXISTING DATA

Funding Status: Funded: 1.00 Unfunded: 0.00

Servicewide Issues : N20 (BASELINE DATA)
Cultural Resource Type:
RMAP Program codes : C00 (Collections and Data Management)
C03 (GIS/Data Management)

10-238 Package Number :

Problem Statement

In 1990 ACAD acquired ARC-INFO, a vector based GIS software package, and began acquiring basic thematic covers of the Park and surrounding area. Covers acquired to date include: USGS DLG data for the shoreline, roads, trails, lakes and ponds, first and second order streams, which have been edited for coding errors; a NPS/GIS Denver produced vegetation cover; state wetlands; Park boundary; and SCS classified soils. All of these covers are for MDI which includes the main unit of ACAD of approximately 35,000 acres. Covers for two other units, IAH and the Schoodic Peninsula, comprising an additional 5,000 acres, as well as the entire legislated area within which the park can acquire conservation easements, have not been acquired and represent a significant GIS need. In addition to the covers listed above there are also several research projects currently in progress or recently completed that will be providing additional GIS data sets that include IAH and the Schoodic Peninsula. These research projects include the participation of WASO and Regional programs and have included provisions for GIS development (i.e., ACAD wetlands inventory, non-point source pollution modeling, fire fuels modeling). Without these additional basic GIS themes for Schoodic Peninsula and IAH, GIS applications will be limited to only the MDI portion of ACAD.

Description of Recommended Project or Activity

The Park has acquired a complete set of USGS DLG data for the entire legislated area including IAH and Schoodic Peninsula, for shoreline, roads, trails, streams, and lakes. Data conversion for these covers requires editing coding and cleaning DLG data to correct errors and assure arc/polygon integrity. Developing covers for the Park boundary and the existing vegetation data set/maps for these units are also recommended. This project is currently underway through a cooperative agreement with COA. Appropriate data base documentation will be provided.

Project Statement

ACAD-N-019.000

Last Update: 01/11/95

Priority: 3

Initial Proposal: 1993

Page Num: 0036

BUDGET AND FTEs:

-----FUNDED-----					
	Source	Activity	Fund Type	Budget (\$1000s)	FTEs
1993:	PKBASE-NR	MON	One-time	1.00	0.00
				=====	
Total:				1.00	0.00
-----UNFUNDED-----					
		Activity	Fund Type	Budget (\$1000s)	FTEs
				=====	
Total:				0.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-020.000

Last Update: 03/27/95
Initial Proposal: 1993

Priority: 3
Page Num: 0037

Title : PROTECT AND MONITOR ACADIA'S SEA CAVES

Funding Status: Funded: 0.00 Unfunded: 0.00

Servicewide Issues : N17 (BIODIVERSITY)
N18 (VIS USE-BCTRY)

Cultural Resource Type:

RMAP Program codes : N00 (Resource and Visitor Use
Management)
N02 (Backcountry and River Patrol)

10-238 Package Number :

Problem Statement

An unknown number of sea caves are located along Acadia National Park's (Park) 52 mile long boundary. All may be affected by their proximity to popular visitor use areas, the effects of fishing boats and scenic boat tours, and changes in sea level and water conditions. These resources are difficult to protect and assess the effects of these human activities and environmental conditions. Anemone Cave is the best known for it's unique fauna and flora and was advertised as an attraction for Park visitors. Recently the Park stopped promoting Anemone Cave in park literature and presentations because of the apparent decline in the numbers of intertidal plants and animals due to trampling and collecting by visitors and commercial interests. The Park needs biological and environmental information to develop protection zones and guidelines for sea caves. Further, the establishment of a monitoring program will track biological diversity of Anemone and other sea caves and assess the effects of visitor use, commercial boating activities, and changes in the coastal water conditions.

Description of Recommended Project or Activity

To protect and monitor intertidal resources in sea caves, the Park has identified project statements ACAD-N-20.001, ACAD-N-20.002, and ACAD-N-20.003. These project statements address the previously mentioned concerns and management problems through longterm management programs. Anemone Cave may serve as a beginning point to develop sea cave monitoring protocols and protection programs due to it's accessibility, proximity to water activities by humans, and historic uses.

Until more information is known about the protection and management of sea caves, the Park's is only capable of restricting access to sea caves and not disclosing locations to visitors. Specific sea cave protection programs that include

Project Statement

ACAD-N-020.000

Last Update: 03/27/95

Priority: 3

Initial Proposal: 1993

Page Num: 0038

area closures, patrolling cave areas, visitor education, and signing will not be possible with the current park staff and ongoing programs. Further, biological and environmental information will be unavailable to mitigate ongoing and future human activities, monitor biological diversity, and record ocean water conditions.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-020.001

Last Update: 03/27/95

Priority: 3

Initial Proposal: 1995

Page Num: 0039

Title : IMPLEMENT PROTECTION PROGRAMS FOR ACADIA'S SEA CAVE
Sub-title:

Funding Status: Funded: 0.00 Unfunded: 10.00

Servicewide Issues : N17 (BIODIVERSITY)
N18 (VIS USE-BCTRY)

Cultural Resource Type:

RMAP Program codes : N00 (Resource and Visitor Use
Management)
N02 (Backcountry and River Patrol)

10-238 Package Number :

Problem Statement

An unknown number of sea caves are located along Acadia National Park's (Park) 52 mile long boundary. All may be affected by their proximity to popular visitor use areas, the effects of fishing boats and scenic boat tours, and changes in sea level and water conditions. These resources are difficult to protect and assess the effects of these human activities and environmental conditions. Anemone Cave is the best known for it's unique fauna and flora and was advertised as an attraction for Park visitors. Recently the Park stopped promoting Anemone Cave in its park literature because of the apparent decline in the numbers of intertidal plants and animals due to trampling and collecting by visitors and commercial interests. The Park needs biological and environmental information to develop protection zones and guidelines for sea caves. Further, the establishment of a monitoring program will track biological diversity of Anemone and other sea caves and assess the effects of visitor use, commercial boating activities, and changes in the coastal water conditions.

Description of Recommended Project or Activity

To protect and monitor intertidal resources in sea caves, the Park has identified project statements ACAD-N-20.002 and ACAD-N-20.003. The Branch of Natural Resources will continue to seek qualified volunteer assistance to conduct inventories and describe sea cave communities an ecology. Collected information will better define management, monitoring, and research needs. Anemone Cave may serve as a beginning point to develop sea cave inventory protocols and assess threats to this resource group. Because of it's accessibility proximity water activities by humans, and historic uses these initial investigations may be able to recommend protection activities. To offset volunteer costs, inventory needs, and costs for collections management the Park requests recurring funding.

Project Statement

ACAD-N-020.001

Last Update: 03/27/95

Priority: 3

Initial Proposal: 1995

Page Num: 0040

Until more information is known about the protection and management of sea caves, the Park's is only capable of restricting access to sea caves and not disclosing locations to visitors. Specific sea cave protection programs that include area closures, patrolling cave areas, visitor education, and signing will only be possible with additional recurring funding. The specific information received from the completed projects ACAD-N-20.002 and ACAD-N-20.003 will be incorporated to enhance protection activities. The Park requests additional funding (5K) to support the protection and education programs identified above.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	PRO	Recurring	10.00	0.30
Total:			10.00	0.30

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM2 APP. 2, 1.4

Project Statement

ACAD-N-020.002

Last Update: 03/27/95

Priority: 3

Initial Proposal: 1995

Page Num: 0041

Title : DEVELOP MONITORING PROTOCOLS FOR ANEMONE CAVE
Sub-title:

Funding Status: Funded: 0.00 Unfunded: 60.00

Servicewide Issues : N17 (BIODIVERSITY)
N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : N00 (Resource and Visitor Use
Management)

N02 (Backcountry and River Patrol)

10-238 Package Number :

Problem Statement

Several sea caves are located along Acadia National Park's (Park) intertidal boundary. Anemone Cave is the best known for it's unique fauna and flora and was advertised as an attraction for Park visitors. Because the cave is located close to a popular scenic overlook and on the Park's boundary, it is a difficult resource to protect. In the late 1980's ACAD stopped promoting Anemone Cave in Park literature because of the apparent decline in the numbers of intertidal plants and animals due to trampling and collecting by visitors and commercial interests. Many of the intertidal flora and fauna species may be uncommon along the Maine coastline. A monitoring program based on the keystone species identified in the biological investigation (ACAD-N-20.001) of Anemone Cave is needed to monitor the biological diversity of Anemone Cave and assess the effects of visitor use, commercial operations, and sea level changes.

Description of Recommended Project or Activity

The Park proposes a two year project that develops monitoring protocols and recommends an implementation strategy for the flora and fauna of Anemone Cave. The monitoring program will be used to estimate the effects of nearshore boat traffic, past and ongoing visitor use, and threats from sea level changes. The design and testing of protocols should include the use of established monitoring stations and both qualitative (i.e., photographic, etc.) and quantitative measurements to assess biological conditions. A program that is designed to enable Park staff or area contractors to conduct at least some monitoring protocols or interim year monitoring is preferred.

The project will review the scientific literature and site information to identify protocols and monitoring methods to be implemented and field tested during both years. Protocol and

Project Statement

ACAD-N-020.002

Last Update: 03/27/95

Priority: 3

Initial Proposal: 1995

Page Num: 0042

method modifications or changes will be completed in the second year. The project will create and submit databases of all information, map and register monitoring locations in GIS (ARCINFO) format, prepare standard operating guidelines for monitoring protocols, and prepare a monitoring report of the findings in the North Atlantic Region's Natural Resources Technical Report Format. Specimens will only be collected when identification or verification cannot be completed on site. Collections will be managed (i.e., cataloged and preserved) by the NPS Collections Management Guidelines and stored at a site to be determined by the Park's Natural Resource Program.

BUDGET AND FTES:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTES
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTES
Year 1:	MON	One-time	30.00	0.00
Year 2:	MON	One-time	30.00	0.00
Total:			60.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM2 APP. 2, 1.6

Project Statement

ACAD-N-020.003

Last Update: 03/27/95
Initial Proposal: 1995

Priority: 3
Page Num: 0043

Title : LOCATE AND CONDUCT INVENTORIES OF PARK SEA CAVES
Sub-title:

Funding Status: Funded: 0.00 Unfunded: 45.00

Servicewide Issues : N17 (BIODIVERSITY)
N20 (BASELINE DATA)
Cultural Resource Type:
RMAP Program codes : N00 (Resource and Visitor Use
Management)
N02 (Backcountry and River Patrol)

10-238 Package Number :

Problem Statement

An unknown number of sea caves are located along Acadia National Park's (Park) 52 mile long boundary. All may be affected by their proximity to popular visitor use areas, the effects of fishing boats and scenic boat tours, and changes in sea level and water conditions. These resources are difficult to protect and assess the effects of these human activities and environmental conditions. The Park needs biological and environmental information to develop protection zones and guidelines for sea caves. Further, the establishment of a monitoring program will track biological diversity of sea caves and assess the effects of visitor use, commercial boating activities, and changes in the coastal water conditions.

Description of Recommended Project or Activity

To protect and monitor intertidal resources in sea caves, the Park recommends that a survey be conducted of all sea caves. The caves would be registered using GPS unit and data would added to the Park's GIS. The survey would conduct initial surveys of the caves using methodologies developed in projects ACAD-N-20.001 and ACAD-N-20.002.

The data would be combined with the Anemone Cave information to identify protection, monitoring, and interpretation efforts in a management plan. The plan would outline roles and responsibilities, monitoring design and strategy for all caves, and funding needs. The frequency of interagency meetings with the State (Dept. of Marine Resources (DNR), Dept. of Inland Fisheries & Wildlife (MDIF&W), Maine Heritage Program, etc.) and U.S. Fish & Wildlife Service Gulf of Maine Project to review plan efforts and research needs will be identified. The plan will be prepared following the Park's Editorial Guidelines (1993).

Project Statement

ACAD-N-020.003

Last Update: 03/27/95

Priority: 3

Initial Proposal: 1995

Page Num: 0044

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
			=====	=====
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	INT	Recurring	10.00	0.20
	PRO	Recurring	15.00	0.20
	MON	Recurring	20.00	0.50
Subtotal:			45.00	0.90
Total:			45.00	0.90

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM2 APP. 2, 1.6

Project Statement

ACAD-N-021.000

Last Update: 03/27/95

Priority: 1

Initial Proposal: 1993

Page Num: 0045

Title : MANAGE AMPHIBIAN POPULATIONS

Funding Status: Funded: 0.00 Unfunded: 0.00

Servicewide Issues : N20 (BASELINE DATA)
N02 (T&E ANIMAL)

Cultural Resource Type:

RMAP Program codes : W00 (Wildlife Management)
W01 (Native Terrestrial Animal
Management & Monitoring)

10-238 Package Number :

Problem Statement

Amphibians are one of "the least studied groups of species in Acadia National Park (Park)" (Greene et al. 1991), ecologically indispensable components of freshwater and terrestrial habitats (Bishop et al. 1994), and in some environments are the most abundant vertebrate (Likens 1987). No systematic surveys have ever been conducted for amphibians on Park lands and the Park and State currently rely on reports of incidental observations. Andersen (1984) noted the importance of amphibians as indicators for determining changes in environmental quality, citing for example the sensitivity of several species to acidic waters. The Park has participated in the National Atmospheric Deposition Program (NADP) since 1983, and has recorded pH levels as low as 3.2. Kahl et al. (1991) reported ecosystems to be vulnerable at pH levels recorded in the Park.

The Maine Dept. of Inland Fisheries and Wildlife (MDIF&W) NonGame program and nongame divisions from other northeast states are currently attempting to establish an amphibian and reptile inventory program as identified by the IUCN's Declining Amphibian Task Force. The program will become a long term monitoring tool to evaluate environmental health using various species as indicators while also monitoring the ecology of all population(s). The disappearance or scarcity of some to all amphibian species in many habitats, including the northeast states and Canadian providences, throughout the world has caused many specialists and natural reserve staffs to consider amphibian censuses and ecological research to be the highest funding priority in assessing the environmental health of ecosystems, species, and in predicting ecological threats.

The Park has no comprehensive species list nor knowledge of the species distribution in Park environments. The relationship between this vertebrate group and disturbed water and air environments are unknown for Maine, but are suspected factors (Blem et al. 1991, Karns 1992, Blaustein et al. 1994) in population declines in other areas. The Park's Longterm Monitoring Plan identifies the need to correlate the monitoring

Last Update: 03/27/95
Initial Proposal: 1993

Priority: 1
Page Num: 0046

of biological resources with the ongoing air and water monitoring programs in tracking the health of Park resources and environments. Species information and the identification of inventory and monitoring methodologies would be beneficial products for the Park, the state, and the IUCN's Declining Amphibian Task Force.

Without information about amphibians, the Park is unable to manage activities and operations that effect species and habitats. Further the Park is unable to cooperate with the state and other programs in tracking species conditions and the health of park systems. Specific information on populations of species, their ecology, and methods for monitoring are the primary needs. Future efforts will address species research questions and the effects of local and distant disturbances on species and habitat conditions.

Description of Recommended Project or Activity

The Park has identified inventory, monitoring, and research projects (ACAD-N-21.001, ACAD-N-21.002, ACAD-N-21.003) to address the absence of amphibian data and programs to track and protect amphibian populations identify. The project statements identify objectives and products in meeting management needs and present a multitier approach based on the availability of funding, Park staff, volunteers and other cooperators, and other leveraged support and linkages.

The Park will cooperate with MDIFW and specialists from the Northeast working group of the IUCN's Declining Amphibian Task Force in identifying project objectives, evaluating project progress, and developing management programs and strategies.

The Park will continue to support outside research, collaborate with area and state efforts, and collect incidental information on species and distributions. However the Park will be unable to establish management programs or become actively involved with national amphibian management efforts until baseline data is known and suitable monitoring methods are tested and designed into longterm management programs. Information obtained from the proposed projects will be shared with Park interpretation programs, the MDIF&W Atlas and management programs, and the scientific community in an effort to develop public understanding and support in managing and protecting Park resources (i.e., amphibians) and systems. Each project statement identifies the products, reporting and project stipulations, and the establishment and transfer of data.

Project Statement

ACAD-N-021.000

Last Update: 03/27/95

Priority: 1

Initial Proposal: 1993

Page Num: 0047

BUDGET AND FTEs:

		-----FUNDED-----			
Source	Activity	Fund Type	Budget (\$1000s)	FTEs	
			=====	=====	
Total:			0.00	0.00	
		-----UNFUNDED-----			
	Activity	Fund Type	Budget (\$1000s)	FTEs	
			=====	=====	
Total:			0.00	0.00	

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-021.G01

Last Update: 03/27/95
Initial Proposal: 1995

Priority: 1
Page Num: 0048

Title : ESTABLISH A MDI AMPHIBIAN ATLAS
Sub-title:

Funding Status: Funded: 0.00 Unfunded: 23.00

Servicewide Issues : N20 (BASELINE DATA)
N02 (T&E ANIMAL)

Cultural Resource Type:

RMAP Program codes : W00 (Wildlife Management)
W02 (Native Aquatic Animal Management & Monitoring)

10-238 Package Number :

Problem Statement

Since 1989, there has been a growing realization that amphibian populations have been declining at an alarming rate worldwide. Several international conferences have been convened to address this issue, assess the magnitude of the problem, and discuss causative factors. Possible causative factors include habitat loss, ozone depletion and increased ultraviolet radiation, and acid precipitation. Research throughout the United States, including several national parks, is being conducted to determine the status of populations, reasons for declines, and threats to species and habitat. No single unifying factor has been identified at this time and information from all areas of the world are needed. Further, amphibians have been identified as indicators of ecosystem health and are effective in detecting anthropogenic changes to wetland and terrestrial environments. Several species are sensitive to acidification of wetlands and terrestrial environments.

Herpetologists and governments in all parts of the world are now beginning to work cooperatively to determine those species that are in decline and the causative factors responsible. To date, attempts to document declines have been hindered by a lack of baseline data needed to assess trends in population numbers and distribution and to monitor changes to their environment. The state of Maine, Department of Inland Fisheries and Wildlife (MDIF&W) is participating in the Northeast (states) Nongame Technical Task Force to develop recommendations for the development of a coordinated state management, research and conservation program for the reptile fauna in the 13 state northeast region. However baseline information on the distribution and abundance of species is needed before monitoring and conservation programs can be developed and implemented.

The Park has identified (NPSGMP 1992, ANP 1993) the protection and conservation of natural resources, including amphibians, as a major goal of the Natural Resource Program. However to meet this goal, the Park has relied on incidental and historic observations

Project Statement

ACAD-N-021.001

Last Update: 03/27/95

Priority: 1

Initial Proposal: 1995

Page Num: 0049

of amphibians and not established even the most basic systematic survey to identify and track amphibian populations and their distribution on Park lands or in bordering areas. The Park's natural resource bibliography identified that amphibians are one of the least studied groups of species for Park lands (Green et. al., 1992). The Park wishes to cooperate with the state and regional task force amphibian monitoring initiatives and thereby meet Park resource protection goals and efforts to understand factors affecting ecosystem health and trends in amphibian populations.

Description of Recommended Project or Activity

Because of the diversity of amphibians and different periods and locations of activities, the Park proposes a phased inventory program. The program will develop and implement an amphibian atlas inventory for the Park and MDI. The Park would cooperate with the Maine Department of Inland Fisheries and Wildlife and utilize interested individuals from qualified college programs in designing the inventory and implementation phases. The design phase will include a review of surveying methods for the major amphibian groups and habitats, strategies to conduct the survey, the establishment of the study area and compartments using the Park GIS, the quality control and data recording processes, and the storage of datasets with the Branch of Natural Resources. The implementation phase will include arranging for a coordinator, notifying the surveyors, conducting training sessions and identifying survey areas, organizing the survey dates and coordinating the surveys, registering the atlas survey areas, collecting and recording the survey data, and reporting the results of the survey. Funding will offset volunteer costs incurred during the design and implementation of different phases of the program. The results will be shared with the MDIF&W Amphibian State Atlas Program, the Park interpretive division, and all information will reside with the Branch of Natural Resources.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	MON	Recurring	3.50	0.00
Year 2:	MON	Recurring	5.50	0.00

Project Statement

ACAD-N-021.001

Last Update: 03/27/95
Initial Proposal: 1995

Priority: 1
Page Num: 0050

Year 3:	MON	Recurring	6.00	0.00
Year 4:	MON	Recurring	8.00	0.00
Total:				23.00
				0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM2 APP. 2, 1.6

Project Statement

ACAD-N-024.000

Last Update: 03/08/95

Priority: 2

Initial Proposal: 1993

Page Num: 0055

BUDGET AND FTEs:

		-----FUNDED-----			
	Source	Activity	Fund Type	Budget (\$1000s)	FTEs
1993:	FIRE-\$	RES	One-time	1.50	0.20
1994:	FIRE-\$	RES	One-time	3.50	0.20
Total:				5.00	0.40
		-----UNFUNDED-----			
		Activity	Fund Type	Budget (\$1000s)	FTEs
Year 3:		RES	One-time	5.00	0.00
Year 4:		RES	One-time	5.00	0.00
Total:				10.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 D.M. 6, APP. 7.4(E)(19)

Project Statement

ACAD-N-025.000

Last Update: 03/08/95

Priority: 2

Initial Proposal: 1993

Page Num: 0056

Title : FIRE INTERACTIONS: WATER/BIOTA/SOILS

Funding Status: Funded: 0.00 Unfunded: 200.00

Servicewide Issues : N07 (NAT FIRE REGM)
N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : F00 (Prescribed Fire Management)
F02 (Prescribed Burn Long-Term Effects
Monitoring)

10-238 Package Number :

Problem Statement

The subject of fire on MDI is a sensitive issue due to the catastrophic fire that occurred in 1947. Since then, fuels have built up in unburned areas and habitats have changed as a result of the 1947 fire. These have had a significant impact on faunal and floral communities. In addition, fires may have had a significant impact on soil and waters within the park. Research is needed to quantify the changes in charcoal and cation release (affecting acid deposition) and nutrient release affecting eutrophication. Soils on MDI are generally very shallow and are very susceptible to erosion. Basic data on the rate of vegetative regeneration is needed. In addition, it is also important to understand the effect of fire on organic matter in soil. Severe fires can adversely affect the amount of organic matter in soil because it is a major factor in nutrient cycling. While general information on these interactions exists, there is little information available for the northeast and none specific to ACAD. This information will help guide the park's fire management program. This becomes especially important if the Park chooses to initiate a prescribed fire program.

Description of Recommended Project or Activity

The Park recommends that additional information be acquired through literature review and research on fire effects on biotic, water, and soil resources to guide management decisions regarding fire. This information will serve as a basis for maintaining the integrity of rare or threatened wildlife and soil and water resources in the event of fire, and may provide guidance on mitigating fire effects on these resources. Research results can also be supplied to other parks in the northeast with similar biotic communities.

Project Statement

ACAD-N-025.000

Last Update: 03/08/95

Priority: 2

Initial Proposal: 1993

Page Num: 0057

BUDGET AND FTEs:

		-----FUNDED-----		
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
		-----UNFUNDED-----		
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	50.00	0.00
Year 2:	RES	One-time	50.00	0.00
Year 3:	RES	One-time	50.00	0.00
Year 4:	RES	One-time	50.00	0.00
Total:			200.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EA (ENV. ASSESSMENT)

Explanation: NEPA: CONTROVERSIAL PROJECT ON MDI

Project Statement

ACAD-N-027.000

Last Update: 02/28/95

Priority: 3

Initial Proposal: 1993

Page Num: 0058

Title : DETERMINE POPULATION STATUS OF WOOD DUCKS

Funding Status: Funded: 0.00 Unfunded: 2.00

Servicewide Issues : N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : W00 (Wildlife Management)
W01 (Native Terrestrial Animal
Management & Monitoring)

10-238 Package Number :

Problem Statement

The status of the wood duck, similar to the other animals listed (e.g., large mammals, reptiles) remains unknown. While work is now being conducted on the harlequin duck, only 2 years of survey data is available and work must continue to ensure effective management and protection of this species and its habitat. Wood ducks, were both listed in the previous edition of this plan but no work was ever funded to determine their status. It is important to have such baseline information if the Park is to do an effective job of managing its natural resources. Development around the Park, habitat loss, succession, and hunting are thought to be factors possibly affecting these birds. Baseline data on this species should be collected to adequately assess the population status.

Description of Recommended Project or Activity

The Park, through cooperative efforts with MDIFW, will engage in systematic surveys using the latest available methods to determine wood duck population size. In addition, an evaluation should be conducted to assess the habitat and food requirements and availability. Information on habitat availability and use, and population size are needed to evaluate the status of this species.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
			=====	
Total:			0.00	0.00

Project Statement

ACAD-N-027.000

Last Update: 02/28/95

Priority: 3

Initial Proposal: 1993

Page Num: 0059

-----UNFUNDED-----

	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	2.00	0.00
		Total:	2.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP.7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-033.000

Last Update: 01/11/95
Initial Proposal: 1993

Priority: 1
Page Num: 0060

Title : MONITORING AND MODELLING OF PHOTO-OXIDANTS

Funding Status: Funded: 0.00 Unfunded: 75.00

Servicewide Issues : N14 (AIR POLLUTION)
Cultural Resource Type:
RMAP Program codes : A00 (Air Resources Management)
A02 (Air Quality Monitoring)

10-238 Package Number :

Problem Statement

Ozone monitoring data in ACAD show that O₃ levels during the summer months frequently exceed the National Ambient Air Quality Standard of 120 parts per billion by volume (ppb), one hourly average concentration. These concentrations can be deleterious to public health and local flora. While there is much speculation on whether elevated O₃ levels are locally generated or transported from distant industrial areas in the northeast or midwest, data are not available on the cause or source of this pollutant. ACAD, under the Clean Air Act is classified a Class I area. As a result, it is necessary to understand the various sources and causes of local air pollutant levels to effectively manage such an area.

Description of Recommended Project or Activity

This project will fund research to determine the causes and sources of elevated O₃ episodes at ACAD. In addition to the current air pollution data collected on McFarland Hill by NPS personnel, Xnitrates (NO_x) and reactive organic gases levels will be also be monitored. Diurnal patterns on O₃, NO_x, and ROG will be evaluated to determine species origin, local or wind-borne. Based on ROG anlayses, allocation of emissions will be attributed to anthropogenic or bionic sources. Finally, based on all data, photo-oxidant modelling will be performed to "estimate the local ?production potential of O₃ in ACAD" (Golomb and Barry 1990).

The need for this project has been negated by other regional research studies including the North Atlantic Regional Experiment (NARE) and the Gulf of Maine Oxidant study in which the NPS Air Quality Division and ACAD have participated. In addition, ACAD has entered into a formal cooperative agreement with Maine Dept. of Environmental Protection for enhanced photo oxidant parameters including ozone, NO_x, and reactive organic compounds. These efforts exceed the scope of this project statements.

Project Statement

ACAD-N-033.000

Last Update: 01/11/95

Priority: 1

Initial Proposal: 1993

Page Num: 0061

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	75.00	0.00
Total:			75.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-034.000

Last Update: 03/08/95

Priority: 2

Initial Proposal: 1993

Page Num: 0062

Title : ACQUIRE NEW VEG. MAP AND GIS THEMATIC DATA FOR ANP

Funding Status: Funded: 0.00 Unfunded: 20.00

Servicewide Issues : N20 (BASELINE DATA)
N07 (NAT FIRE REGM)

Cultural Resource Type:

RMAP Program codes : V00 (Vegetation Management)
V01 (Native Terrestrial Plant Management
and Monitoring)

10-238 Package Number :

Problem Statement

A vegetation data set/map for ACAD acquired from 1979 photography is currently being used by Park, Region, WASO, and contractor researchers/resource managers. This map/data set is included in the Park's GIS. Over the past 12 years map users have observed coding discrepancies and changes to species composition and densities in some locations. In 1991 ACAD provided 5,000 dollars to the Soil Conservation Service to participate in a statewide project to acquire new color infrared photography, which the Park has purchased. An updated vegetation map has become highly desirable as the number of vegetation related research and natural resource management projects increases, (i.e., biological effects of air pollution, fire and fuel modeling, post 1947 fire succession effects on beaver/otter populations, alpine plant community survey, wetlands inventory). Continued use of the 1979 vegetation map will, at times, perpetuate the use of erroneous data.

Description of Recommended Project or Activity

The Park recommends contracting for photo interpretation, remote sensing, and data conversion into a new vegetation map and thematic data base for the Park's ARC-INFO. If approved, guidance will be sought from the Regional GIS Coordinator and WASO GIS to assist in the development of an acceptable work plan for remote sensing and project cost.

Project Statement

ACAD-N-034.000

Last Update: 03/08/95

Priority: 2

Initial Proposal: 1993

Page Num: 0063

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	MON	Cyclic	20.00	0.00
Total:			20.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP.7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-035.000

Last Update: 02/28/95
Initial Proposal: 1993

Priority: 1
Page Num: 0064

Title : DEV. COMPREHENSIVE I & M STRATEGY AND PROTOCOLS

Funding Status: Funded: 0.00 Unfunded: 60.00

Servicewide Issues : N20 (BASELINE DATA)
N17 (BIODIVERSITY)

Cultural Resource Type:

RMAP Program codes : S00 (Science Consultation and Oversight)

10-238 Package Number :

Problem Statement

The park has initiated the creation of a base funded program that inventories, records and monitors park resources, ecosystems and operating processes, and evaluates and predicts threats to these park resources. The park is currently working with NAPS specialists in identifying program objectives and the structure, direction, and relationships necessary in developing a successful program.

The Park is currently involved with the long-term monitoring of air resources and monitors several species that have special status (i.e., T&E, Maine Special Concern) as well as native species that conflict with park operations and exotic species that threaten park resources. Aerial photographs have been taken approximately every 10 years since the mid-1940's. Ongoing research will provide valuable information on fire history and ecology, sub-alpine plant communities, and watershed ecology. The park, with support from NARO, has completed a comprehensive annotated bibliography with over 1000 scientific works. The park's location has drawn many investigators and naturalists over the last century and this historical work includes baseline inventories for insects, vascular plants, lichens, birds, and a few mammals. The bibliography has also identified information gaps, reviewed all scientific work for it's suitability in the long term monitoring program, including spatial data which could be incorporated into a Geographic Information System (GIS).

Despite these gains, the Park staff has limited funding, time, and expertise with all resources to develop and implement a comprehensive long-term inventory and monitoring program.

Description of Recommended Project or Activity

Assemble a team of scientists and managers to develop a comprehensive program for long-term inventory and monitoring. Develop a strategy for completing baseline inventories, identify ecosystem components to be monitored, identify staffing needs,

Project Statement

ACAD-N-035.000

Last Update: 02/28/95

Priority: 1

Initial Proposal: 1993

Page Num: 0065

and prioritize needs. The natural resource inventory and monitoring program will employ standard professional techniques and procedures to conduct resource inventories, test census methodologies, compile data, develop inventory databases, analyze results and prepare reports and assessments. The program will identify the design and components for long-term monitoring and be developed in cooperation with professional scientists and researchers with the NAPS, NAPSCPSUs, universities and colleges. The monitoring program will employ locally tested professional techniques and procedures to conduct resource and process assessments, constantly assess monitoring methodologies, compile and analyze results, prepare reports and briefing assessment. The program will develop a database management and geographic information program to record all I&M activities, track resources, and facilitate the preparation of resource facts, trends and threats. The program will be implemented following a prioritized schedule based on objectives, management concerns and NAPS initiatives, funding, suitability to other inventory and monitoring programs, and infrastructure support.

Continue existing monitoring programs. The park will prepare fact and briefing statements about program needs, opportunities, and benefits for park management, the NAPS I&M program, and others involved with natural resource conservation.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	30.00	0.00
Year 2:	RES	One-time	30.00	0.00
Total:			60.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Project Statement

ACAD-N-035.000

Last Update: 02/28/95
Initial Proposal: 1993

Priority: 1
Page Num: 0066

Explanation: 516 DM6 APP.7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-037.000

Last Update: 01/11/95

Priority: 3

Initial Proposal: 1993

Page Num: 0067

Title : INVENTORY SPP./ABUND./DISTR. OF BRYOPHYTES

Funding Status: Funded: 0.00 Unfunded: 55.00

Servicewide Issues : N20 (BASELINE DATA)
N17 (BIODIVERSITY)

Cultural Resource Type:

RMAP Program codes : V00 (Vegetation Management)
V01 (Native Terrestrial Plant Management
and Monitoring)

10-238 Package Number :

Problem Statement

While extensive historical inventory work has been completed for vascular plants throughout the Park's history, little is known of liverworts and mosses (Greene et al. 1991). A historical flora of the Mount Desert Island region was completed by Rand and Redfield (1894) which included over 50 species of mosses and 48 species of liverworts. Subsequent investigators added several dozen species to the known bryophyte flora by the 1940's. Senter (1985) conducted an inventory of mosses in 1985 and listed 131 species including some new records. No studies of liverworts have been attempted for the past 65 years. In addition, there is no information available on these plants for IAH, Schoodic, or offshore island sections of the Park. Information on these plants will represent a significant addition to the Park's inventory and monitoring program.

Description of Recommended Project or Activity

Compile all historic and existing data into moss and liverwort databases. Conduct field surveys, especially in areas where little or no previous inventory work has been done including park-owned offshore islands. Identify rare or threatened species for special protection within the park. Coordinate work with other surveys in the State or in New England. Research should also provide recommended monitoring strategies for selected species.

Project Statement

ACAD-N-037.000

Last Update: 01/11/95

Priority: 3

Initial Proposal: 1993

Page Num: 0068

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	15.00	0.00
Year 2:	RES	One-time	20.00	0.00
Year 3:	RES	One-time	20.00	0.00
Total:			55.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP.7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-038.000

Last Update: 02/28/95
Initial Proposal: 1993

Priority: 1
Page Num: 0069

Title : COMPLETE FLORA AND FAUNA BASELINE INVENTORIES

Funding Status: Funded: 0.00 Unfunded: 170.00

Servicewide Issues : N20 (BASELINE DATA)
N17 (BIODIVERSITY)

Cultural Resource Type:

RMAP Program codes : S00 (Science Consultation and Oversight)

10-238 Package Number :

Problem Statement

ACAD and NAR Office staff, with the assistance of cooperating universities have begun to develop components of a long-term inventory and monitoring program. A comprehensive annotated bibliography has identified over 1000 scientific works which have been completed at ACAD. Significant historical work includes baseline inventories for insects, vascular plants, lichens, and some mammals. Information gaps have also been identified and all scientific work has been reviewed for suitability for a long term monitoring program, including spatial data which could be incorporated into a Geographic Information System (GIS).

Considerable data currently exists, and the Park has established the basis for a long-term monitoring program. Aerial photographs have been taken approximately every 10 years since the mid-1940's. An extensive air quality monitoring program has been established at ACAD. Exotic plant, Lyme disease, white-tailed deer and beaver monitoring programs are currently underway. Ongoing research will provide valuable information on fire history and ecology, subalpine plant communities, and watershed ecology.

To facilitate further development of a comprehensive inventory and monitoring program, several basic inventories must be completed to fill information gaps. These include reptiles, amphibians, liverworts, and mosses. The importance of individual species within these groups as indicators of environmental quality has been well documented. Basic data regarding these resources including species presence or absence, distribution, and abundance will provide information on which to establish long-term ecosystem monitoring.

Description of Recommended Project or Activity

In order to complete ACAD's baseline inventories, efforts will be initiated on 1) reptiles and amphibians and 2) liverworts and mosses. MDI, IAH, and the Schoodic Peninsula will be surveyed.

Project Statement

ACAD-N-038.000

Last Update: 02/28/95
Initial Proposal: 1993

Priority: 1
Page Num: 0070

Species presence, distribution, and relative abundance will be investigated. Particular attention will focus on Federally or State endangered and threatened species, species of special concern, and species which may be important bioindicator of environmental quality as identified in previous studies. Information will be incorporated into the Park's GIS. Recommendations for management including long-term monitoring protocols will be included in this study.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
			=====	=====
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	60.00	0.00
Year 2:	RES	One-time	60.00	0.00
Year 3:	RES	One-time	50.00	0.00
			=====	=====
Total:			170.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-039.000

Last Update: 01/11/95

Priority: 3

Initial Proposal: 1993

Page Num: 0071

Title : INVENTORY RESOURCE IMPACTS ON TRAILS

Funding Status: Funded: 0.00 Unfunded: 40.00

Servicewide Issues : N22 (VIS USE-DEV ZN)

Cultural Resource Type:

RMAP Program codes : D00 (Disturbed Area Rehabilitation)

10-238 Package Number :

Problem Statement

ACAD's rich natural resources and scenic beauty attract many hikers onto 115 miles of trails. Hiking is one of the most popular visitor activities (Manning 1987). Another 100+ miles of trail have been abandoned due to lack of maintenance. Maintenance of trails is only loosely tied to resource impacts. Perceived natural resource impacts near trailheads and on trails include areas of extensive vegetation and soil loss, human waste, introduction of exotic plant species, development of social trails, soil compaction, litter, and modification of vegetative communities. Fragile sub-alpine plants are being trampled by visitors on social paths away from park-designated trails. Some trails are poorly located through sensitive resource areas such as bogs, highly erodible soils, etc. and are difficult to maintain. Minimum standards for trail maintenance have not been established. Many trails are not maintained to minimum safety levels or visitor expectations.

Description of Recommended Project or Activity

Initiate systematic impact surveys including quantitative and qualitative observations of each impact. Quantitative measurements include mapping areas of impact, length, width, depth, aspect, slope and vegetative type. Social paths would be identified and documented on site maps and with photographs. Impact areas and hiker accidents would be documented on the Park GIS. A prioritization method which includes visitor safety and resource impacts would be developed and incorporated into the Maintenance Management System. From information obtained by this project, a trails maintenance/management plan could be developed which would address minimum maintenance standards, identify staffing/funding levels, identify needed informational guides, and develop a cyclic monitoring program to assess impacts.

Project Statement

ACAD-N-039.000

Last Update: 01/11/95
Initial Proposal: 1993

Priority: 3
Page Num: 0072

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	40.00	0.30
Total:			40.00	0.30

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : OTHER ()

Explanation: OMB FOR SOC. SURVEYS IF NECESSARY

Project Statement

ACAD-N-040.000

Last Update: 01/11/95

Priority: 2

Initial Proposal: 1993

Page Num: 0073

Title : STUDY VISITOR USE OF TRAILS

Funding Status: Funded: 0.00 Unfunded: 60.00

Servicewide Issues : N24 (OTHER)

Cultural Resource Type:

RMAP Program codes : R00 (Social Science Research)

10-238 Package Number :

Problem Statement

Approximately 115 miles of hiking trails and 55 miles of carriage roads are minimally maintained throughout ACAD. In a visitor survey by Manning (1987), walking (81%) and hiking (69%) were listed as activities in which visitors participated while in the Park. Hiking was also the most important of 17 activities which the Park "should be sure to plan for". Hiking opportunities range from handicap accessible trails and carriage roads to trails which utilize rungs and ladders to allow visitors to climb precipitous cliffs. While it is generally felt that visitors prefer a variety of trails offering diverse experiences (difficulty, solitude, scenery, etc.) no hiker profiles, user satisfaction, or comprehensive trail use levels have ever been measured. The effectiveness of the existing trail marking systems are unknown. Users may inadvertently find themselves on trails more difficult than their ability level, jeopardizing their safety. A difficulty rating system may help hikers select trails which are more suited to their abilities. Past decisions to maintain certain trails and abandon others may have been made without regard to the system as a whole, and most likely have been based on popularity, perhaps to the exclusion of trails which offer opportunities for solitude.

Description of Recommended Project or Activity

In order to provide for hiker safety, satisfaction, and resource protection, a sociological study of trail users and trail use is needed. Topics to be studied include but are not limited to: user profiles, trail preferences, trail use levels of selected trails, visitor satisfaction including accessibility of information regarding trail difficulty and selection, satisfaction with maps, ease of following trails, intrusion of too many cairns or markers, convenience, satisfaction with current maintenance levels especially regarding safety, and opportunities for solitude.

Project Statement

ACAD-N-040.000

Last Update: 01/11/95

Priority: 2

Initial Proposal: 1993

Page Num: 0074

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	60.00	0.00
Total:			60.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : OTHER ()

Explanation: OMB FOR SOC. SURVEYS

Project Statement

ACAD-N-041.000

Last Update: 02/28/95

Priority: 1

Initial Proposal: 1993

Page Num: 0075

Title : IMPLEMENT COMPREHENSIVE I & M PROGRAM

Funding Status: Funded: 0.00 Unfunded: 2400.00

Servicewide Issues : N20 (BASELINE DATA)
N17 (BIODIVERSITY)

Cultural Resource Type:

RMAP Program codes : S00 (Science Consultation and Oversight)

10-238 Package Number :

Problem Statement

Acadia is attempting to develop a long term I&M Program and recently employed a full time program coordinator. However, the program is at an elementary stage and needs funding to support the development and establishment of the program. Presently the small staff and base budget are inadequate to implement such a program. The modest GIS system is currently inadequate to support such a program and requires a full time operator. Facilities are inadequate to support additional staff and equipment. The laboratory is small and lacks basic equipment and safety features. The Park lacks transportation for field activities.

Description of Recommended Project or Activity

Implement long term I&M Program as defined by the completion of project statement ACAD N-35. Hire a full time GIS Coordinator (GS-401-9) to operate the GIS system. Hire field biological assistants to conduct testing of field methodologies, collect data, develop databases, record data and prepare results.

Provide initial program support by upgrading the laboratory to meet minimal safety and operational needs, constructing office space and providing furnishings; develop office space and all necessary materials and equipment for new and homeless park natural resource collections, and build or purchase office space and equipment, support vehicles and field equipment, the hardware and software to develop a compatible and fully operational GI system, and computers and support to fully equip the I&M Program.

Project Statement

ACAD-N-041.000

Last Update: 02/28/95
Initial Proposal: 1993

Priority: 1
Page Num: 0076

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
			=====	=====
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	MON	Recurring	600.00	6.00
Year 2:	MON	Recurring	600.00	6.00
Year 3:	MON	Recurring	600.00	6.00
Year 4:	MON	Recurring	600.00	6.00
Total:			2400.00	24.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-043.000

Last Update: 01/11/95

Priority: 1

Initial Proposal: 1991

Page Num: 0077

Title : ESTABLISH BASELINE WATER QUALITY FOR SOMES SOUND

Funding Status: Funded: 40.00 Unfunded: 0.00

Service-wide Issues : N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : Q00 (Water Resources Management)

Q01 (Water Resources Management)

10-238 Package Number :

Problem Statement

Somes Sound is the only true fjord on the eastern seaboard. Slightly less than half of its shoreline lies within the boundaries of ACAD. Despite the unique nature of this resource there is very little data available. Because of the potential for development on the portion of the shoreline that does not lie within ACAD the entire system may experience population impacts, it is important for the NPS to understand the dynamics of this system. Baseline data may be used to mitigate any potential impacts.

Fjords are particularly sensitive to sewage discharge and nutrient additions that are common to marine pollution. Increased nutrient inputs increase algal populations that eventually decay and decrease oxygen levels. Because the bottom of fjords are only occasionally replaced eutrophication of surface waters increases the tendency toward low oxygen.

Data collection for this project will allow the NPS to monitor any changes that take place in the future. Implementation of this work represents sound, effective natural resource management prior to a crisis situation.

Description of Recommended Project or Activity

This study will focus on three objectives: 1) gather base-line information on the distribution of dissolved oxygen, dissolved inorganic nutrients, salinity, and temperature; 2) gather information on the discharge of freshwater streams into the system and the concentrations of dissolved nutrients in these discharges; 3) evaluate the water quality in the Sound and present level of environmental stress as judged by hypoxic or anoxic bottom water.

As part of the work previously described, fish, benthos, and avifauna populations will be evaluated.

Project Statement

ACAD-N-043.000

Last Update: 01/11/95

Priority: 1

Initial Proposal: 1991

Page Num: 0078

BUDGET AND FTEs:

-----FUNDED-----					
	Source	Activity	Fund Type	Budget (\$1000s)	FTEs
1991:	WATER-RES	RES	One-time	20.00	0.00
1992:	WATER-RES	RES	One-time	20.00	0.00
				=====	
Total:				40.00	0.00
-----UNFUNDED-----					
		Activity	Fund Type	Budget (\$1000s)	FTEs
				=====	
Total:				0.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-044.000

Last Update: 02/28/95

Priority: 3

Initial Proposal: 1993

Page Num: 0079

Title : ECOLOGICAL INVENTORIES OF CONSERVATION EASEMENTS

Funding Status: Funded: 0.00 Unfunded: 160.00

Servicewide Issues : N20 (BASELINE DATA)

N17 (BIODIVERSITY)

Cultural Resource Type:

RMAP Program codes : S00 (Science Consultation and Oversight)

10-238 Package Number :

Problem Statement

This project, although listed separately, is a component of all other I&M projects listed in this RMP. Easements, like many of the other resources under the jurisdiction of ACAD have never been inventoried. As ACAD has over 100 easements and many of them are on offshore islands, the ability of the Park to gather basic information on them has been severely limited. Nevertheless, it is the responsibility of the easement holder to know the major resources of each property and fulfilling the terms of each agreement (i.e., protecting the resources).

Description of Recommended Project or Activity

The protocols for this project can be found in the other I&M projects in this Plan.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	MON	Recurring	40.00	0.00
Year 2:	MON	Recurring	40.00	0.00
Year 3:	MON	Recurring	40.00	0.00
Year 4:	MON	Recurring	40.00	0.00
=====				

Project Statement

ACAD-N-044.000

Last Update: 02/28/95

Priority: 3

Initial Proposal: 1993

Page Num: 0080

Total: 160.00 0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-046.000

Last Update: 02/17/95
Initial Proposal: 1993

Priority: 1
Page Num: 0081

Title : RARE AND ENDANGERED PLANT MANAGEMENT

Funding Status: Funded: 0.00 Unfunded: 150.00

Servicewide Issues : N03 (T&E PLANTS)
N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : V00 (Vegetation Management)
V03 (Threatened & Endangered Plant
Management)

10-238 Package Number :

Problem Statement

An inventory of rare plants occurring in the park was completed by Greene (1990) which included historic research and two seasons of field surveys. In addition, inventory efforts have been conducted on park islands and Schoodic peninsula. Two federally listed candidate species and 20 state listed species occur on park lands. Four other state listed species have been located on adjacent properties. Thirteen historic occurrences of rare species have not been relocated. A preliminary list of "locally rare" species, those of limited occurrence within park boundaries has been established.

Continued inventorying and monitoring is critical to conserving rare species and their habitats, and maintaining biodiversity in the park. Greene (1990) prescribed monitoring state listed plants, identified in the study every five years. No monitoring has been conducted.

The list of locally rare species established by Greene was not based on numerical criteria and is not complete.

Description of Recommended Project or Activity

Further surveys of rare plants and habitats are needed. All species occurring in Acadia need to be evaluated against abundance criteria and management plans prepared for priority species. Rare plant populations should be monitored. Create a database to track pertinent data on all rare plant occurrences in the park. Map rare plants and incorporate data into the park's GIS. Create a comprehensive plant checklist for researchers, visitors, and other interested parties.

Project Statement

ACAD-N-046.000

Last Update: 02/17/95

Priority: 1

Initial Proposal: 1993

Page Num: 0082

BUDGET AND FTES:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTES
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTES
Year 1:	RES	One-time	30.00	1.00
Year 2:	RES	One-time	30.00	1.00
Year 3:	RES	One-time	30.00	1.00
	MIT	Recurring	15.00	0.50
Subtotal:			45.00	1.50
Year 4:	RES	One-time	30.00	1.00
	MIT	Recurring	15.00	0.50
Subtotal:			45.00	1.50
Total:			150.00	5.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : ESA (ENDANGERED SPECIES ACT)
SEC7 ()

Explanation: T & E PLANTS

Project Statement

ACAD-N-047.000

Last Update: 01/11/95

Priority: 1

Initial Proposal: 1993

Page Num: 0083

Title : BIODIVERSITY & CONSERV. OF INVERTEBRATES IN NAR

Funding Status: Funded: 0.00 Unfunded: 180.00

Servicewide Issues : N17 (BIODIVERSITY)
N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : W00 (Wildlife Management)
W01 (Native Terrestrial Animal
Management & Monitoring)

10-238 Package Number :

Problem Statement

Conservation of Park faunas is a major priority of the NPS. a great deal of discussion and debate, and considerable scientific research, has been devoted to the conservation of animal species and to the implications of this mandate (Dottavio, Brussard, and McCrone 1990). However, very little of this effort has focused on invertebrates. To date, there has been no comprehensive, effort to conserve invertebrates in National Parks, or even to identify species at risk (Stohlgren & Quinn. 1991).

Part of the difficulty in dealing with invertebrate observation is the bewildering diversity that must be faced. Studies of the terrestrial arthropod fauna of MDI from the early and mid-1900's identified a total of 6,578 species (Proctor 1946). Therefore the species richness of insects exceeds that of all other plants and vertebrates combined. One implication of this diversity is that the status of the populations of most invertebrate species is unknown. Numerous species could be lost or impacted without our knowledge. In order to manage these resources properly, the least that is required is a baseline data set describing the current status of diversity. This can then be used to compare with earlier data sets as well as be used to establish a long-term monitoring program to recognize changes in these populations (and the ecosystems of which they are an integral part).

Description of Recommended Project or Activity

The park needs a tested monitoring program to evaluate changes in the health of the park's invertebrates fauna (Ginsberg 93) based on current baseline of invertebrate diversity and being aware of any special status species. The project will also be designed to provide information on important species in the region, a list of recognized taxonomic specialists for the region, and a cost/benefit comparison of surveys methods.

Project Statement

ACAD-N-047.000

Last Update: 01/11/95
Initial Proposal: 1993

Priority: 1
Page Num: 0084

Two approaches are proposed to characterize the Park's invertebrate fauna and to collect baseline data: 1) comprehensive samples will be taken of selected invertebrate taxa (genus to order). The characteristics of these taxa should include taxonomy that is well known with experts available for help with identification. collecting procedures should not present any extraordinary difficulties. 2) the use of taxonomic experts to generate a list of T&E/rare species and then consult in the identification of species found in the field sampling. (including on-site visits).

The surveys will be conducted using standard (i.e., Stratified Random, Search and Collect, and Systematic) sampling techniques appropriate to the taxa selected. Completeness, ease of use and quality control, and the total numbers of taxa, species, and individuals will be evaluated in recommending a long term monitoring and comparing results to Proctor's work.

The primary focus of this effort will include insect fauna for which there is comparative data from the early 1900's (Proctor 1946). Two taxa have been tentatively chosen: Odonata and Hymenoptera representing regional distribution and comparisons to Proctor's (1946) findings from a half century ago.

BUDGET AND FTEs:

		-----FUNDED-----		
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
		Total:	0.00	0.00
		-----UNFUNDED-----		
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	60.00	0.00
Year 2:	RES	One-time	60.00	0.00
Year 3:	RES	One-time	60.00	0.00
		Total:	180.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Project Statement

ACAD-N-047.000

Last Update: 01/11/95

Priority: 1

Initial Proposal: 1993

Page Num: 0085

Explanation: 516 DM6 APP. 7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-048.000

Last Update: 03/27/95
Initial Proposal: 1993

Priority: 2
Page Num: 0086

Title : ASSESS SONGBIRD POPULATIONS

Funding Status: Funded: 0.00 Unfunded: 0.00

Servicewide Issues : N02 (T&E ANIMAL)
N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : W01 (Native Terrestrial Animal
Management & Monitoring)
W03 (Threatened & Endangered Animal
Management)

10-238 Package Number :

Problem Statement

A tremendously diverse avifauna, 338 species, have been identified on Mount Desert Island (MDI) and surrounding areas. Acadia National Park (ANP, Park) and MDI are specifically known as one of the premier bird watching areas in the country for observing songbirds. There are the 23 breeding warblers in the park. Simons (1991) reports Maine has 79% of the nesting migratory bird species in the country. The Park and surrounding lands provide a unique mix of habitats, in that northern and southern species of songbirds can be observed in a small geographic area. Although migratory bird habitats within NPS lands are thought to be relatively unaffected by human activities when compared to corresponding habitats on adjacent public and private lands, research has shown that development and land-use practices just outside of the park's boundaries can adversely affect park avifauna. Habitat fragmentation and changing land use practices are occurring around the Park as well as in most of the eastern United States. The effects of these activities on Park avifauna are unknown.

The National Park Service is a member of the interagency Neotropical Migratory Bird Conservation Program (NMBCP) whose mission is the long term conservation of neotropical migratory birds in a coordinated network of national parks and equivalent reserves. As a member of the NMBCP the NPS has prepared a draft plan that identifies the need for "selected units of the NPS [to serve] as baseline areas where research and monitoring will be conducted cooperatively with partners in the NMBCP". The State of Maine Dept. of Inland Fisheries and Wildlife (MDIF&W), a cooperator with NMBCP, recognizes the Park as an excellent long-term monitoring site due to it's commitment to natural resource monitoring and habitat protection. The park's involvement as a baseline monitoring site would enhance Park and NMBCP objectives by providing information to interpretative & education programs, monitoring bird population trends, and assisting with research programs to support regional and international efforts in conserving bird populations.

Project Statement

ACAD-N-048.000

Last Update: 03/27/95

Priority: 2

Initial Proposal: 1993

Page Num: 0087

The Park needs a long-term monitoring program that would establish baselines to monitor this unique resource as a component of the park's Long-term Monitoring Program. The program would also provide information to other monitoring efforts, the park's interpretive division for educational and naturalist programs, and build working relationships with local support groups. The park has historic data for present and future monitoring comparisons, research and professional support (i.e., College of the Atlantic, Bates College, CPSU-University of Maine, MDIF&W, etc.), a highly qualified local volunteer program, and cooperative management relationships to assist in developing and maintaining this program.

Description of Recommended Project or Activity

The Park recommends becoming an active park service representative by establishing a song (i.e, land) bird program as identified in the NMBCP. The program would support park objectives by establishing a current baseline and the monitoring program to evaluate songbird populations.

The Park proposes developing a three tier monitoring program (ACAD-N-48.001, ACAD-N-48.002, ACAD-N-48.003) that enables the Park to select levels of effort based on available funding, skilled volunteers and other resource priorities. Objectives of the monitoring program are to 1) evaluate trends of the common and more vocal species, 2) produce indices of breeding and fall songbirds, 3) evaluate trends in productivity, 4) assess habitat characteristics, and 5) produce quantifiable data to exchange and compare with other state, regional, national song and land bird monitoring efforts. The park identified this monitoring approach by conducting has conducted a preliminary investigation of habitats, breeding birds in these habitats, identifying management issues and concerns, and assessing monitoring activities and networks within the Park's geographic region. The Park also contacted songbird and monitoring researchers and reviewed the literature to assess methodologies suitable to the park's objectives and budget (Super et al. 1993). The information from these projects will be used to develop a songbird management program that incorporates NPS mandates to provide public opportunities while ensuring the viability of Park natural resources, including songbirds, in perpetuity.

The program will incorporate the Park's GIS, historic data, and locally qualified volunteers. Information gained from this program will be presented to the staff for educational outreach. Operating procedures will be prepared in longterm monitoring manuals and databases will be created to ensure program continuity.

Project Statement

ACAD-N-048.000

Last Update: 03/27/95

Priority: 2

Initial Proposal: 1993

Page Num: 0088

BUDGET AND FTEs:

-----FUNDED-----					
Source	Activity	Fund Type	Budget (\$1000s)	FTEs	
Total:			0.00	0.00	
-----UNFUNDED-----					
	Activity	Fund Type	Budget (\$1000s)	FTEs	
Total:			0.00	0.00	

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-048.001

Last Update: 03/27/95
Initial Proposal: 1995

Priority: 2
Page Num: 0089

Title : DEVELOP SONGBIRD ATLAS
Sub-title:

Funding Status: Funded: 0.00 Unfunded: 45.00

Servicewide Issues : N02 (T&E ANIMAL)
N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : W01 (Native Terrestrial Animal
Management & Monitoring)
W03 (Threatened & Endangered Animal
Management)

10-238 Package Number :

Problem Statement

The Park has identified the need for a longterm song and land bird monitoring program (ACAD-N-48.000) that would establish a baseline to monitor this unique resource as a component of the park's Longterm Monitoring Program. A fundamental need in designing and implementing the monitoring program is an informational database on the species and distribution of songbirds found (breeding and migrating) on Mount Desert Island (MDI) and in the Park. The information needed for the songbird database would include presence or occupancy per area of the island and park, season of activity, and distribution for the species identified.

Description of Recommended Project or Activity

The Park requests support in developing a songbird species atlas to enhance the current knowledge of bird species on MDI and provide baseline information to be used in designing monitoring programs (ACAD-N-48.002, ACAD-N-48.003).

The project will develop a songbird atlas of Mount Desert Island.

The atlas would be comprised of geographical units of the island separated based on access routes, topographic features, political boundaries, and vegetative communities (Maine Natural Heritage Program 1991) using databases in the Park's GIS. Species lists would be generated for each unit of the atlas and be conducted throughout the breeding season and migration periods. Information collected would include species observed, habitat, investigation effort (i.e., time spent, no. of individuals, etc.), weather, and other related information would be recorded and stored in databases residing in the Branch of Natural Resources.

Project Statement

ACAD-N-048.001

Last Update: 03/27/95
Initial Proposal: 1995

Priority: 2
Page Num: 0090

Costs would include volunteer support (i.e., housing, per diem, etc.), mileage and vehicle costs, binoculars and other field equipment, and GIS lab time at College of the Atlantic (COA). The project will use local birding enthusiasts or college internships.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	MON	One-time	15.00	0.50
Year 2:	MON	One-time	15.00	0.50
Year 3:	MON	One-time	15.00	0.50
Total:			45.00	1.50

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM2 APP. 2, 1.6

Project Statement

ACAD-N-048.002

Last Update: 03/27/95
Initial Proposal: 1995

Priority: 2
Page Num: 0091

Title : PARTICIPATE IN NATIONAL SONGBIRD MONITORING PROG
Sub-title:

Funding Status: Funded: 0.00 Unfunded: 10.00

Servicewide Issues : N02 (T&E ANIMAL)
N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : W01 (Native Terrestrial Animal
Management & Monitoring)
W03 (Threatened & Endangered Animal
Management)

10-238 Package Number :

Problem Statement

The National Park Service is a member of the interagency Neotropical Migratory Bird Conservation Program (NMBCP) whose mission is the long term conservation of neotropical migratory birds in a coordinated network of national parks and equivalent reserves. As a member of the NMBCP the NPS has prepared a draft plan that identifies the need for "selected units of the NPS [to serve] as baseline areas where research and monitoring will be conducted cooperatively with partners in the NMBCP". The State of Maine Dept. of Inland Fisheries and Wildlife (MDIF&W), a cooperator with NMBCP, recognizes the Park as an excellent longterm monitoring site due to it's commitment to natural resource monitoring and habitat protection. The park's involvement as a baseline monitoring site, would enhance Park and NMBCP objectives by providing information to interpretative & education programs, monitoring bird population trends, and assisting with research programs to support regional to international efforts in conserving bird populations.

The Park needs to develop and implement a songbird monitoring program that is linked with other efforts through the method(s) used and species tracked. The program would establish a database to track species, species groups, and families of this unique resource on Mount Desert Island (MDI) and in the (park). The program would also provide information to other regional and national monitoring efforts, the Park's Interpretive Division for educational and naturalist programs, and build working relationships with local support groups.

Description of Recommended Project or Activity

The Park recommends becoming an active participant in the NMBCP. The program would support park objectives by establishing a

Project Statement

ACAD-N-048.002

Last Update: 03/27/95

Priority: 2

Initial Proposal: 1995

Page Num: 0092

current baseline and the monitoring program to evaluate songbird populations.

The Park proposes developing a longterm monitoring program to 1) evaluate trends of the common and more vocal species, 2) produce indices of breeding and fall migrating songbirds, 3) produce quantifiable data to exchange and compare with other state, regional, national song and land bird monitoring efforts. The park has conducted a preliminary survey of the breeding birds along several major roads and trails in the Park, evaluated management issues and concerns, and sought input from songbird monitoring efforts in the northeast states (i.e., USF&WS Region 5). To meet these objectives, Super et al. (1993) recommended that the Park participate in the internationally recognized Breeding Bird Survey (BBS), which would satisfy the park's objectives and cooperate with regional efforts to detect population trends using qualified volunteers.

The monitoring program would be coordinated by the Park, and depending on volunteer response for assistance, one to several potential routes (Super 1994) may be surveyed annually. The first and preferred route is the Park Loop Road, which is ideally suited to this methodology. The program would follow the standard BBS methodology (Ralph 1993) and information would reside in databases managed by the Branch of Natural Resources. Survey routes would be permanently field marked and spatial registry (i.e., start, monitoring stations, finish, etc.) would be conducted and entered into the park GIS. The effort would be documented in the first of annual reports that listed species, calculated relative density of species, and noted other survey conditions by route.

Costs would include volunteer coordinator support (i.e., housing, per diem, etc.), mileage and vehicle costs for all volunteers, binoculars and other field equipment, and GIS lab time at College of the Atlantic (COA). The project will use qualified birding enthusiasts and be supervised by a park student intern (SCA or college program) or a volunteer.

BUDGET AND FTES:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTES
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTES
Year 1:	MON	Recurring	10.00	0.20
Total:			10.00	0.20

Project Statement

ACAD-N-048.002

Last Update: 03/27/95

Priority: 2

Initial Proposal: 1995

Page Num: 0093

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM2 APP. 2, 1.6

Project Statement

ACAD-N-048.003

Last Update: 03/27/95
Initial Proposal: 1995

Priority: 2
Page Num: 0094

Title : IMPLEMENT LONG-TERM SONGBIRD MONITORING PROGRAM
Sub-title:

Funding Status: Funded: 0.00 Unfunded: 100.00

Servicewide Issues : N02 (T&E ANIMAL)
N20 (BASELINE DATA)
Cultural Resource Type:
RMAP Program codes : W01 (Native Terrestrial Animal
Management & Monitoring)
W03 (Threatened & Endangered Animal
Management)

10-238 Package Number :

Problem Statement

There are the 23 breeding warblers in the park and Simons (1991) presented information illustrating that 79% of the nesting songbird species in the eastern United States were found in Maine. One explanation may be Mount Desert Island's location in the transition zone between the northern boreal and southern deciduous vegetative communities. The transition zone is a unique mix of habitats that lie in close proximity to each other and provide an opportunity to observe both northern and southern species of breeding songbirds in a small geographic area.

Over the past two decades, the Park has documented an increasing number of visitors to the island, increases in the island population and yearround residents, and a shift of nonpark lands from agricultural to residential uses. The effects of these practices and activities on the avifauna is unknown.

The National Park Service is a member of the interagency Neotropical Migratory Bird Conservation Program (NMBCP) whose mission is the long term conservation of neotropical migratory birds in a coordinated network of national parks and equivalent reserves. As a member of the NMBCP the NPS has prepared a draft plan that identifies the need for "selected units of the NPS [to serve] as baseline areas where research and monitoring will be conducted cooperatively with partners in the NMBCP". The State of Maine Dept. of Inland Fisheries and Wildlife (MDIF&W), a cooperator with NMBCP, recognizes the Park as an excellent longterm monitoring site due to it's commitment to protect and monitor natural resources. The park's involvement as a monitoring site with the NMBCP would satisfy objectives of the Park and NMBCP by providing information to interpretative & education programs, monitoring bird population trends, and assisting with research programs to support regional to international efforts in conserving bird populations.

The Park needs a longterm songbird monitoring program that would

Project Statement

Last Update: 03/27/95
Initial Proposal: 1995

ACAD-N-048.003
Priority: 2
Page Num: 0095

cooperate in the regional, federal, and international effort to conserve songbirds and support the Park's goals of protecting and managing the Park's natural resources. Further, a monitoring program would be a component of the park's Longterm Monitoring Program and enhance efforts to understand and manage Park resources. The program would utilize and strengthen relationships with numerous local support groups and qualified volunteers, cooperate with songbird and habitat research efforts, and link MDI bird information in the management and conservation of songbirds.

Description of Recommended Project or Activity

The Park recommends becoming an active park service representative by establishing a songbird program as identified by the NMBCP and supported by the NPS. The program would support park objectives by establishing a current baseline and a monitoring program to evaluate songbird populations.

The Park proposes developing a longterm monitoring program to 1) evaluate trends of the common and more vocal species, 2) produce indices of breeding and fall songbirds, 3) evaluate trends in productivity, 4) assess habitat characteristics, and 4) produce quantifiable data to exchange and compare with other state, regional, national songbird monitoring efforts. The Park completed a review of monitoring alternatives (Super et al. 1993) that included a preliminary investigation of breeding birds in the primary vegetative communities, an identification of management issues and concerns (GMP 1992, ANP 1993), a literature search of methodologies, an assessment of monitoring activities within the Park's geographic region, and the recommendations from songbird monitoring researchers. Based on this review (Super et al. 1993) the park recommends implementing a monitoring program utilizing two standard methodologies that will complement other monitoring (N48.002 BBS) efforts in the Park. The Random Stratified Point Counts (Point Count) is the first monitoring method and was established to enhance BBS data and address songbird indices in specific environments or habitats with greater confidence. The second monitoring method is the Mapping Avian Productivity Stations (MAPS), which assesses breeding songbird productivity and chick survivorship. The NMBCP (NPS is a cosigner) and the U.S. Fish and Wildlife Service have sanctioned the MAPS methodology in monitoring songbirds.

These methodologies would select from the list of possible study sites those habitats and species that match Park, regional, and national monitoring priorities into a comprehensive monitoring program. The monitoring program would establish a maximum of 240 count points using a network of Park fire roads, trails, and carriage paths and three MAPS sites in this initial effort. The MAPS program may use one or several species identified for longterm monitoring (i.e., Institute for Bird Populations) in

Project Statement

ACAD-N-048.003

Last Update: 03/27/95

Priority: 2

Initial Proposal: 1995

Page Num: 0096

selecting habitats for the MAPS sites. The methodologies would use qualified technicians or specialists who pass proficiency qualifications throughout the survey periods. The program will be conducted for five years to detect variability in the data and errors in project design or methodologies.

Spatial information will be recorded and entered into the Park's GIS and the project will establish databases for long term monitoring and management with the Branch of Natural Resources. The program will annually present to the Park staff information about the findings. The final results will be prepared in the North Atlantic Region's Natural Resources Technical Report format with recommendations on necessary research and management planning and activities.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	MON	Recurring	25.00	0.30
Year 2:	MON	Recurring	25.00	0.30
Year 3:	MON	Recurring	25.00	0.30
Year 4:	MON	Recurring	25.00	0.30
Total:			100.00	1.20

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM2 APP. 2, 1.6

Project Statement

ACAD-N-049.000

Last Update: 01/11/95
Initial Proposal: 1993

Priority: 3
Page Num: 0097

Title : IMPACTS OF SNOWMOBILES ON PARK RESOURCES

Funding Status: Funded: 0.00 Unfunded: 40.00

Servicewide Issues : N20 (BASELINE DATA)
Cultural Resource Type:
RMAP Program codes : R00 (Social Science Research)

10-238 Package Number :

Problem Statement

The use of snowmobiles on park roads has steadily increased since 1966. However, the effects of snowmobiles on Park resources are unknown. No data is available to justify the expansion or curtailment of this activity within Park boundaries. In addition, interest groups pressure Park management for more trail availability while opponents contend that snowmobiling has no place in a National Park.

Description of Recommended Project or Activity

This work will involve gathering information on the number and intensity of snowmobile use within the Park. Once established, specific trails must be evaluated to determine effects on biotic resources. This will also involve the effects of this activity on other winter user groups within the Park.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
			=====	=====
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	20.00	0.00
Year 2:	RES	One-time	20.00	0.00
Total:			=====	=====
			40.00	0.00

Project Statement

ACAD-N-049.000

Last Update: 01/11/95
Initial Proposal: 1993

Priority: 3
Page Num: 0098

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : OTHER ()

Explanation: OMB FOR SOC. SURVEYS

Project Statement

ACAD-N-021.002

Last Update: 03/27/95

Priority: 1

Initial Proposal: 1995

Page Num: 0051

Title : IMPLEMENT AMPHIBIAN MONITORING PROGRAM

Sub-title:

Funding Status: Funded: 0.00 Unfunded: 105.00

Servicewide Issues : N20 (BASELINE DATA)
N02 (T&E ANIMAL)

Cultural Resource Type:

RMAP Program codes : W00 (Wildlife Management)
W02 (Native Aquatic Animal Management & Monitoring)

10-238 Package Number :

Problem Statement

Since 1989, there has been a growing realization that some amphibian populations throughout the world have been declining while others appeared unaffected. Several international conferences have been convened to address this issue, assess the magnitude of the problem, and discuss causative factors. Possible causative factors include habitat loss, ozone depletion and increased ultraviolet radiation, and acid precipitation. Research throughout the United States, including several national parks, is being conducted to determine the status of populations, reasons for declines, and threats to species and habitat. No single unifying factor has been identified at this time and information from all areas of the world are needed. Further, amphibians have been identified as indicators of ecosystem health and are effective in detecting anthropogenic changes to wetland and terrestrial environments. Several species are sensitive to acidification of wetlands and terrestrial environments.

Herpetologists and governments in all parts of the world are now beginning to work cooperatively to determine which species are in decline and the causative factors responsible. To date, attempts to document declines are confounded by a lack of data to assess population trends for most species and to monitor changes to their environment. The recently formed Declining Amphibian Task Force of the IUCN was formed to organize research and monitoring programs worldwide. The state of Maine, Department of Inland Fisheries and Wildlife (MDIF&W) is participating in the Northeast (states) Nongame Technical Task Force to develop recommendations for the development of a coordinated state management, research and conservation program for the reptile fauna in the 13 state northeast region. An integral part of the strategic plan will be to work with the IUCN's Declining Amphibian Task Force in the implementation of a Northeast regional herpetile monitoring program. The monitoring program would likely be stratified by major wetland and upland ecosystems represented in the region and have a sampling design capable of detecting population trends, changes in the environments, and possibly identify causative

agents or potential threats. The state recognizes Acadia National Park (ANP) as an excellent candidate for herpetile monitoring because of it's protected status, ecosystems representative of the region, and an ongoing commitment to longterm natural resource monitoring.

The Park has proposed a project to conduct an inventory in developing an amphibian atlas for MDI. The atlas would provide the park with an updated species list, but would be limited in it's ability to track population trends, identify threats and changes in habitats, and conduct comparative analysis. The Park has identified the need to monitor biological resources along with the air and water resource monitoring programs in assessing the health of Park resources and mitigating threats. A statistically sound monitoring program would enable the Park to track amphibian populations and monitor habitats and participate with the state and regional task force amphibian monitoring initiatives. Data from this program would enable the Park to track environmental conditions by combining biological and physical data (i.e., water, air, climate) and be better able to assess the health and threats to Park communities.

Description of Recommended Project or Activity

The Park proposes a three year investigation and monitoring implementation project that will evaluate the suitability of and establish survey methodologies for longterm monitoring programs in Park and MDI. The project will focus on the major amphibian habitats (i.e., streams, vernal pools, terrestrial, and wetlands) and document amphibian species, conduct habitat characterizations and quality assessments, recommend parameters suitable for and in comparisons with the Park's LongTerm Monitoring Program, and discuss the suitability of monitoring designs and methodologies for amphibian monitoring initiatives in Maine and other the northeastern states and Canadian providences.

The first year of the project will focus on selecting a suitable sampling design and methodologies to inventory (Heyer 1994, Fellers 1995, Petranks et al. 1995) representative amphibian habitats within the Park and on MDI. The project will stratify the island into the major amphibian habitats (i.e., streams, vernal pools, forests, and wetlands) and inventory these habitats to determine species and distributions, seasons of use, and present conditions and potential threats. Project members will evaluate the inventory methods for suitability to the habitats and species, contribution in assessing species abundance and distribution, appropriateness with other methods and in longterm monitoring programs, and benefits and costs for future inventories and monitoring programs. The second and third year of the project will establish a longterm monitoring program based on the first year evaluation. The project will select keystone species per habitat and determine population abundance and

Project Statement

ACAD-N-021.002

Last Update: 03/27/95

Priority: 1

Initial Proposal: 1995

Page Num: 0053

distribution. The project will establish standard habitat measurements to track conditions and identify changes and causes. Products will include a complete species list and map of species distributions, spatial and relative datasets, longterm monitoring program with established monitoring and habitat locations that are GI register, a report on use of methodologies, and a technical report that presents amphibian and habitat information, recommendations for implementing this and other inventories and monitoring programs, and the suitability of using amphibians as indicators of ecosystem health. The project will participate in the park's resource seminars.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
			=====	=====
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	MON	One-time	35.00	0.00
Year 2:	MON	One-time	35.00	0.00
Year 3:	MON	One-time	35.00	0.00
Total:			105.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM2 APP. 2, 1.6

Project Statement

ACAD-N-024.000

Last Update: 03/08/95

Priority: 2

Initial Proposal: 1993

Page Num: 0054

Title : FIRE BEHAVIOR & FIRE EFFECTS ON VEGETATION

Funding Status: Funded: 5.00 Unfunded: 10.00

Servicewide Issues : N07 (NAT FIRE REGM)
N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : V00 (Vegetation Management)
V01 (Native Terrestrial Plant Management
and Monitoring)

10-238 Package Number :

Problem Statement

Little information exists on fire behavior and the effects of fire on fuel loadings in the plant communities in the northeastern part of the United States. Additionally, information on the use of prescribed fire as a management tool in these communities is lacking. Thus, the ability to accurately predict fire behavior and fire effects on fuel loadings in the Park's plant communities and to determine the suitability of prescribed fire as an appropriate management tool is not present.

Though fire is an infrequent visitor to the Park, the possibility of a catastrophic fire does exist due to the high concentrations of fuels present. In order to implement an effective and efficient fire management program, this type of information is needed. Other fuels management options (e.g., mechanical and chemical) must also be evaluated in order to provide for the successful implementation of a fuels reduction program that specifically addresses park resources and issues.

Description of Recommended Project or Activity

In 1992, basic research was begun into fire behavior and the effects of fire on fuel loadings in various plant communities in the park. This was accomplished through the use of two small management ignited prescribed fires. Fire behavior was observed and measure during these burns; pre and post fuel loadings and vegetation composition was assessed. Additional small-scale management ignited burns need to be conducted in other vegetation fuel types. These burns would compare expected and observed fire behavior, and determine the short and long term effects of fire on vegetation and fuel loading. In addition, this work would provide management with an evaluation of the effectiveness of prescribed fire as a management tool for maintaining vistas and cultural landscapes, reducing hazard fuels and for protecting and conserving fire dependent plant species.

Project Statement

ACAD-N-050.000

Last Update: 01/11/95

Priority: 3

Initial Proposal: 1993

Page Num: 0099

Title : GLOBAL CLIMATE CHANGE

Funding Status: Funded: 0.00 Unfunded: 60.00

Servicewide Issues : N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : S00 (Science Consultation and Oversight)

10-238 Package Number :

Problem Statement

In the past century there have been major increases in the atmospheric concentrations of greenhouse trace gases such as carbon dioxide, methane, and chloroflourocarbons. These changes have subjected the earth to an uncertain future of global warming, climatological change, and potentially significant changes in the earths ecosystems. Prediction of these changes and ecosystem responses will be critical to managing National Park resources.

Description of Recommended Project or Activity

This study will focus on the analysis of carbon cycling processes in northern forested wetlands and to determine how the major sources and sinks of carbon in these ecosystems may respond to or influence global carbon cycling or climate change. Carbon will be used as a focal point in this analysis because carbon represents a major ecological unit of currency. In short, carbon cycling provides a means of developing an integrated analysis of the potential feedbacks between ecological systems and changing patterns of resource use in ACAD which will be applicable throughout the National Park system.

This project will examine and make a comparative analysis of carbon cycling processes and patterns in a set of coastal forested wetlands at ACAD and a set of inland wetlands located near the University of Maine in Orono. These sites will include contrasting combinations of deciduous and coniferous vegetation and organic versus mineral soils. specific objectives will include:

- 1) To quantify the distribution of soil carbon and the seasonal patterns of carbon dioxide and methane release from the forested wetland soils at each site;
- 2) To determine the influence of temperature, hydrology, substrate quality, soil physical-chemical properties, and forest cover type on rates of carbon mineralization at the coastal and

Project Statement

ACAD-N-050.000

Last Update: 01/11/95

Priority: 3

Initial Proposal: 1993

Page Num: 0100

inland sites;

3) to develop a conceptual model of carbon sources, sinks, and cycling as a function of environmental change in northern forested wetlands.

BUDGET AND FTES:

-----FUNDED-----					
Source	Activity	Fund Type	Budget (\$1000s)	FTEs	
Total:			0.00	0.00	
-----UNFUNDED-----					
	Activity	Fund Type	Budget (\$1000s)	FTEs	
Year 1:	RES	One-time	20.00	0.00	
Year 2:	RES	One-time	20.00	0.00	
Year 3:	RES	One-time	20.00	0.00	
Total:			60.00	0.00	

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-051.000

Last Update: 03/08/95

Priority: 2

Initial Proposal: 1992

Page Num: 0101

Title : HAZARD FUELS MONITORING

Funding Status: Funded: 74.00 Unfunded: 0.00

Servicewide Issues : N07 (NAT FIRE REGM)
N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : F00 (Prescribed Fire Management)
F02 (Prescribed Burn Long-Term Effects
Monitoring)

10-238 Package Number :

Problem Statement

Acadia National Park consists of three units totalling over 35,000 acres of land. The vast majority of this acreage is forested. Development of abutting properties is increasing, leading to a greater wildland/urban interface problem. The 1947 Bar Harbor Fire, which burned over 17,000 acres of forested lands (10,000 acres within the park), is an indication of the fire situations that can occur in the fuel models present at Acadia.

Little is known about the specific hazard fuels that exist in the park. The park has mechanically treated areas of high risk hazard fuels since 1990 to investigate it's usefulness in reducing hazard fuels. More basic information is needed to understand the fuels present in the park and how treatment affects those fuels. Is treatment actually reducing risk or is it increasing that risk through disturbance and increased reproduction?

In order to understand the park's fuels, long-term monitoring plots need to be established to provide baseline data and to monitor natural and treatment induced changes in fuel loading and composition.

Description of Recommended Project or Activity

In 1992, basic research was begun into fire behavior and the effects of fire on fuel loadings in various plant communities in the park. This was accomplished through the use of two small management ignited prescribed fires. Fire behavior was observed and measure during these burns; pre and post fuel loadings and vegetation composition was assessed. Additional small-scale management ignited burns need to be conducted in other vegetation fuel types. These burns would compare expected and observed fire behavior, and determine the short and long term effects of fire on vegetation and fuel loading. In addition, this work would

Project Statement

ACAD-N-051.000

Last Update: 03/08/95

Priority: 2

Initial Proposal: 1992

Page Num: 0102

provide management with an evaluation of the effectiveness of prescribed fire as a management tool for maintaining vistas and cultural landscapes, reducing hazard fuels and for protecting and conserving fire dependent plant species.

BUDGET AND FTES:

-----FUNDED-----					
	Source	Activity	Fund Type	Budget (\$1000s)	FTES
1992:	RG-REG-MT	MON	Cyclic	25.00	0.50
1993:	RG-REG-MT	MON	Cyclic	21.00	0.30
1994:	RG-REG-MT	MON	Cyclic	28.00	0.00
Total:				74.00	0.80
-----UNFUNDED-----					
		Activity	Fund Type	Budget (\$1000s)	FTES
Total:				0.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP.7.4E(2) DLY RM&RESRCH

Title : IDENTIFY & MITIGATE LAND USE ENCROACHMENTS

Funding Status: Funded: 0.00 Unfunded: 367.50

Servicewide Issues : N16 (NEAR-PARK DEV)
N20 (BASELINE DATA)

Cultural Resource Type:
RMAP Program codes : E00 (Environmental Planning and
Compliance)

10-238 Package Number :

Problem Statement

Acadia National Park, the only national park in the northeast, was established by the donation of private lands to preserve outstanding scenic, natural, scientific, and historic values. The park is relatively small (i.e., 35,000 acres) with a very irregular and complex boundary. This acquisition of lands has resulted in 120 miles of complex and irregular fee boundary in both rural and urban settings, much of which has not been surveyed, permanently marked, or monitored for resource protection. The park boundary has approximately 2,000 contiguous privately owned tracts of property of which approximately 1,200 are developed and another seventy proposed for or currently under some form of urban development.

Encroachment on park lands and resources has been occurring for years but has increased significantly over the last two decades as large tracts of land (over 100 acres) have been developed for urban and commercial uses. Recently discovered impacts include over 8,000 cubic feet of fill being deposited on park lands in two locations. The illegal deposit of fill has since eroded and spread over wetland resources and into one of Acadia's most scenic and entire water courses found within the Park's boundary.

This encroachment incident is not unique to the park. Other resource impacts along park boundaries include placing fill material over park wetlands, stream sedimentation, mineral extraction, old growth forest harvesting, and inappropriate personal uses of park lands and resources including the construction of permanent structures on park property.

As land use adjacent to Acadia's boundaries changes from rural to urban, threats and impacts to adjacent park resources and environments will not only continue, but increase from land owner encroachments. The extent of current and potential damage to natural resources is largely unknown.

The park staff can not adequately respond and maintain surveillance along this complex boundary. Hiring additional park staff would help but would still be reactive. Instead, the Park proposes the development and establishment of a boundary resource

database, and a resource program and strategy to address the constantly changing land status. The database would add significantly to the Park's knowledge of boundary resources and be a permanent, working reference enabling the Park's staff to effectively implement a proactive resource protection program. Upon completion, the program would enable park managers to identify resources of high value to the park, prioritize potential threats, plan and conduct boundary reconnaissance, prevent resource impacts by anticipating problems, and proactively work with community zoning boards and developers to maximize protection of park resources. Until the program is implemented, the park will continue to discover boundary impacts to late to protect natural resources. This project is the number 1 resource mitigation project within the park's RMP and a high priority of the GMP. Despite this being one of the highest priority resource issues identified in the park's RMP, the park has been unsuccessful in securing funding after several requests and resource impacts continue.

Description of Recommended Project or Activity

The Park proposes to develop a boundary and resource monitoring program based on a resource database and surveyed and marked boundaries. This proposal would develop the program's fundamental working components over the next three years to assist the lands and natural resource management staff in mitigating impending and future impacts from boundary encroachments. The program's fundamental components are 1) establish park boundaries, 2) develop a database of permanent land markers and resources values, and 3) develop the monitoring strategy and basic tools needed to mitigate adjacent land use impacts. These three products would provide the Park with the foundation to proactively protect park lands and resources.

The project would identify, stratify, and prioritize Park boundaries known or suspected to be impacted by illegal activities and encroachment by comparing available GIS and aerial photography with land use records from the neighboring towns. The prioritized list of high, moderately high, and moderately threatened lands would then be structured into the three project phases to insure completion and maximize cost effectiveness. The first phase would begin with the highly threatened areas. Boundaries with moderately low impact assessments would be completed following the project's completion by additional funding requests, Park staff and available base funds, and other cooperative arrangements between the Park and cooperators.

The project would then contract with a state certified surveyor to permanently locate and mark the boundary and create GIS data sets compatible with the Park ArcInfo format. Concurrently, the Park would hire a long-term resource specialist to work with the present Park staff and consulting resource specialists to (1)

Project Statement

ACAD-N-053.000

Last Update: 03/08/95

Priority: 2

Initial Proposal: 1993

Page Num: 0105

identify resources of high value, (2) assess resource damage that has already taken place, (3) conduct an assessment and permanent location of boundary resources, (4) develop databases, both spatial (GI) and relative (lands and resource) pursuant to a long-term monitoring and mitigation program (4) and where appropriate, develop mitigation strategies for current or potential encroachments. The project would attempt to survey approximately one third of the high, moderately high, and moderately threatened lands per year. The resource specialist would accompany or closely follow the survey activities each year and assess boundary resource values. The resource specialist would identify when park and consulting specialists would be needed to quantify resources. These special services would include, but not be limited to, such activities as wetlands identification, hydrologic values, Federal and State species of concern (i.e., T&E, locally rare, and sensitive etc.), special wildlife habitat, scenic vistas and visitor use areas, and cultural and archaeological resources. Resource information would be placed into both a permanent GIS and resource database for future use. The spatial information would be digitized through a contract with a local college which has a Cooperative Agreement with the Park; quality control would be provided by the regional GIS Coordinator in consultation with park staff.

The park would use base funded staff to interact with town land offices and zoning committees, conduct all other land and easement reviews, and mitigate currently known and expected encroachments to allow the project a full complement of time and resources to complete it's annual assignment. The Park would also continue to acquire deeds for all adjacent land tracts to complete the Park's reference files and continue to develop it's geographic information database and system.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	MIT	One-time	132.00	1.00
Year 2:	MIT	One-time	114.50	1.00
Year 3:	MIT	One-time	121.00	1.00
Total:			367.50	3.00

Project Statement

ACAD-N-053.000

Last Update: 03/08/95

Priority: 2

Initial Proposal: 1993

Page Num: 0106

(Optional) Alternative Actions/Solutions and Impacts

A. No Action. The Park would continue to respond to lands and boundary issues on a case by case basis while completing other activities or by notification by concerned residents. Continued encroachment and other illegal activities along the Park boundary lands would be expected to increase.

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM2 APP. 2, 1.6

Project Statement

ACAD-N-055.000

Last Update: 03/17/95
Initial Proposal: 1993

Priority: 1
Page Num: 0107

Title : ESTAB. RESOURCE PROTECTION PROGRAM IN BACKCOUNTRY

Funding Status: Funded: 0.00 Unfunded: 213.00

Servicewide Issues : N18 (VIS USE-BCTRY)
N16 (NEAR-PARK DEV)

Cultural Resource Type:

RMAP Program codes : N00 (Resource and Visitor Use
Management)
N02 (Backcountry and River Patrol)

10-238 Package Number :

Problem Statement

Over the past 10 to 15 years, increasing public interest in physical fitness, hiking, back-packing, nature appreciation and sports such as sea kayaking and mountain biking has resulted in exponential increased use of the Park's back-country, off shore islands, and other remote areas. During a period of austere Federal budgets over this same time, there has been no real increase in protection Ranger staff to monitor or regulate this shift in public off road use.

Protection Rangers are now compelled by the crush of summer visitors to expend nearly all of their energies and resources dealing with crises and problems in and around the Park's developed areas and on the busy motor roads. Backcountry and off road areas are rarely patrolled or checked during the main visitor season, June through September. Due to lack of adequate patrol and enforcement, illegal camping is a common violation and the more popular spots are now impacted and damaged. Around the illegal camps are fire rings and fire scars; litter, garbage, crude latrines and human waste are commonly present. Illegal fires are a severe threat during periods of high fire danger. Nearly all fires on Mount Desert Island are man-caused.

Poaching of white-tailed deer and illegal trapping of fur bearers are a chronic and continuing threat to park fauna. Animals are killed as a sport by some local residents and from time to time there is organized commercial killing of deer.

During the period before Christmas, fir and spruce trees are illegally cut in the park both for sale and private use. The commercial gathering of fir boughs for manufacture of Christmas decorations and wreaths has become a bigger problem as State of Maine authorities clamp down on illegal harvesting on private lands outside the park. On several occasions persons have cut winter firewood inside the park and trucked it away undetected leaving fresh cut stumps, sawdust and small discarded branches.

Park boundaries are mostly unmarked and largely indiscernible.

Project Statement

ACAD-N-055.000

Last Update: 03/17/95

Priority: 1

Initial Proposal: 1993

Page Num: 0108

This has led to many incursions and trespasses on park land both intentional and inadvertent. Obscure boundaries have contributed to illegal hunting, tree cutting, erecting structures, and constructing roads and driveways which were partially or completely on park land. These types of incursions go largely undetected due to lack of staff to patrol and inspect.

In recent years the public has begun to use and impact the Park's fragile off shore islands. These islands are home to large numbers of colonial water birds and seals, and support several active Bald Eagle and Osprey nests. Sea kayakers are camping illegally on the small islands leaving fire scars, litter and human waste. The threat of man caused wildfire on these remote islands is serious because fire suppression resources would be slow in arriving and any wildfire might likely burn the whole island. Remote islands are rarely if ever patrolled by Rangers.

Increased base funding is sorely needed to establish and carry out an active program of back-country resource protection and enforcement. This program will be proactive and aim to insure that all off road areas are systematically checked for illegal activity and resource damage. Adverse visitor impacts must be carefully documented and closely watched in order to detect and prevent possible irreversible damage.

Description of Recommended Project or Activity

Obtain needed funding in park's operating base and establish a program that insures all off road areas are systematically checked for illegal activity and resource damage. Survey, document and monitor adverse visitor impacts and instances of over use. Provide adequate Ranger staff to enforce all laws and regulations relating to the protection of natural resources. Clean up and obliterate illegal campsites. Stop illegal fires and prevent wildfires. Enforce all laws relating to ATV'S. Stop killing of wildlife and cutting and removal of vegetation. Patrol off-shore islands and carefully monitor visitor impacts on these fragile sites. Preserve and protect the park's natural resources in accord with the Service's legislative mandates.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00

Project Statement

ACAD-N-055.000

Last Update: 03/17/95

Priority: 1

Initial Proposal: 1993

Page Num: 0109

-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	PRO	Recurring	129.00	4.00
	PRO	One-time	84.00	0.00
		Subtotal:	213.00	4.00
		Total:	213.00	4.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4E(2) DLY RM&RESRCH

Project Statement

ACAD-N-056.000

Last Update: 03/17/95
Initial Proposal: 1993

Priority: 1
Page Num: 0110

Title : UPDATE GIS LANDS AND BOUNDARY COVERAGES

Funding Status: Funded: 3.00 Unfunded: 3.00

Servicewide Issues : N16 (NEAR-PARK DEV)
N06 (LAND USE PRAC)

Cultural Resource Type:

RMAP Program codes : C00 (Collections and Data Management)
C03 (GIS/Data Management)

10-238 Package Number :

Problem Statement

Acadia National Park consists of approximately 35,000 acres of fee simple ownership and 6,000 acres in conservation easements (less than fee interest). Park lands have been acquired parcel by parcel over the years beginning in 1916. In 1986, Public Law 99420 established a permanent boundary for the Park and authorized the acquisition of 176 additional fee interest parcels and the deletion of 23 parcels of park land outside of the boundary. Currently, lands comprising the park include 742 individual parcels. Each parcel is unique with respect to retained rights, deeded restrictions, and other encumbrances upon the land. In addition, the park has a very irregular and heavily developed boundary. Consequently, any proposed management action in or adjacent to the park first requires a careful review to determine ownership and a study of each individual parcel to ascertain encumbrances. This process is extremely labor intensive and involves using maps, land acquisition records, and property deeds.

In FY94, the first phase of this project resulted in a GIS data layer that was current according to the 1980 Land Status maps. This layer has greatly facilitated work by the Land Protection Ranger, but the database is incomplete and needs to be updated to reflect current conditions.

Description of Recommended Project or Activity

We would like to have the current data layer (ANPFEE3) updated to reflect the current Land Status map, the most current database (WASO Master Deed list, to be acquired), and additional information on tract divisions, parcel status changes, and new easement parcels (information at ACAD that is too new to be reflected in the Master Deed list and Land Status maps).

Specific tasks to be accomplished:

1. All parcels that currently have an "empty" database will be

Project Statement

ACAD-N-056.000

Last Update: 03/17/95

Priority: 1

Initial Proposal: 1993

Page Num: 0111

assigned tract numbers from the current Land Status Map or as directed otherwise by Michael Blaney, Land Protection Ranger.

2. The most current Master Deed List, to be acquired from WASO, will be joined to the database.

3. Proofing will be done to ensure that any data in the current Master Deed List has a corresponding parcel in the GIS data layer unless directed otherwise by Michael Blaney, Land Protection Ranger.

4. ACAD will provide to COA maps and/or other information regarding tract divisions, changes of status, new easements, or other changes necessary to the data layer that may not be reflected in the Master Deed List. These changes will also be incorporated into the updated data layer.

5. The AAT (Arc Attribute Table) will be coded so that the current outline of the ACAD boundary can be plotted by selecting an attribute code. Fee lands will be coded differently than easement parcels.

6. A new plot will be run (large format paper copy) reflecting the changes made above. Fee lands and easement lands will be clearly distinguishable. ACAD will receive a copy of the SML file and any miscellaneous covers used to generate the plot.

Other provisions regarding this work:

All data is to be delivered in PC Arc/Info format (or Arc/Info export format with no compression) on compatible media. Compatible media include 44MB Bernoulli cartridge, 3.5" or 5.25" diskette, or 2120 data cartridges backed up with Colorado Backup software. Data may be compressed with PKZIP if necessary.

For lands on MDI, unless otherwise specified, existing digital parcel boundaries from tax maps will be used for parcel delineation. For lands outside MDI, the Maine OGIS coastline (digitized from USGS 7.5" series quadrangles) will be used for shoreline, and parcel boundaries will be digitized from maps provided by ACAD.

BUDGET AND FTES:

	Source	Activity	FUND Type	Budget (\$1000s)	FTES
1993:	RG-NS-RES	ADM	One-time	3.00	0.00
Total:				3.00	0.00

Project Statement

ACAD-N-056.000

Last Update: 03/17/95
Initial Proposal: 1993

Priority: 1
Page Num: 0112

-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	MON	One-time	3.00	0.00
Total:			3.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM2 APP. 2, 1.6

Project Statement

ACAD-N-057.000

Last Update: 02/15/95

Priority: 3

Initial Proposal: 1993

Page Num: 0113

Title : ESTABLISH NATIVE PLANT REVEGETATION PROGRAM

Funding Status: Funded: 35.10 Unfunded: 90.00

Servicewide Issues : N24 (OTHER)
N06 (LAND USE PRAC)

Cultural Resource Type:

RMAP Program codes : D00 (Disturbed Area Rehabilitation)

10-238 Package Number :

Problem Statement

Construction, repair, trail relocation, and routine maintenance of park facilities remove vegetation and make these sites subject to erosion and invasion by exotic plant species. Vegetation in areas receiving high visitor use in developed zones, including trails, is trampled causing non-native plant invasion and resource degradation. Cultural landscapes and developed zones occasionally require replacement of vegetation which is lost due to disease, insects, or old age. Native plant materials of local genetic stock are not commercially available for these revegetation projects. Contrary to National Park Service policies and guidelines, nonnative plants are used when revegetation is required.

Description of Recommended Project or Activity

The preferred solution to this problem is to establish a native plant revegetation program. Project funding has been secured through the Challenge Cost Share program for FY 93, yet this is a basic, ongoing need for the park and should eventually be base funded. A nursery manager should be hired to track plant materials and costs, supervise plant salvage operations, and propagate and care for plants. Infrastructure needs include administrative assistance, office space, potting shed, a vehicle to be used in association with the revegetation project and funds for supplies, materials, and staff training.

BUDGET AND FTES:

-----FUNDED-----					
	Source	Activity	Fund Type	Budget (\$1000s)	FTES
1993:	SVC-OTHER	MIT	One-time	10.00	0.30
	NON-NPS-O	MIT	One-time	10.00	0.00

Project Statement

ACAD-N-057.000

Last Update: 02/15/95
Initial Proposal: 1993

Priority: 3
Page Num: 0114

	Subtotal:	20.00	0.30
1994:	FED-OTHER MIT	One-time	15.10
	PKBASE-NR MIT	One-time	0.00
	PKBASE-OT MIT	One-time	0.00
	Subtotal:	15.10	0.50
	Total:	35.10	0.80

-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 3:	MIT	Recurring	45.00	1.50
Year 4:	MIT	Recurring	45.00	1.50
	Total:		90.00	3.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM APP. 7.4 E (2)

Project Statement

ACAD-N-062.000

Last Update: 03/08/95

Priority: 3

Initial Proposal: 1993

Page Num: 0115

Title : STUDY LONG TERM FIRE HISTORY

Funding Status: Funded: 0.00 Unfunded: 75.00

Servicewide Issues : N07 (NAT FIRE REGM)
N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : V00 (Vegetation Management)

V01 (Native Terrestrial Plant Management and Monitoring)

10-238 Package Number :

Problem Statement

Critical to making informed decisions concerning the future direction of the park's fire management program is the need for an accurate fire history of the park. Recent studies have investigated both the pre- and post-settlement fire history of the Park. Pre-settlement fire history for a few, isolated watersheds within the park have been determined through analysis of pond bottom sediment core samples. While very informative, the fire history derived from these samples applies to only a very small portion of the park's land area. The park's post-settlement fire history has been determined through a records and literature review. Though a significant amount of the park's fire history has been determined through prior studies, there is a need to complete this process for those areas of the park and time periods not adequately addressed in previous studies.

Description of Recommended Project or Activity

This project would continue basic research into the pre-settlement fire history of the park through collection and analysis of pond bottom sediment cores from selected watersheds within or adjacent to the park. Analysis of historic photographs and additional literature and record reviews would be conducted to enhance knowledge of the park's post-settlement fire history.

BUDGET AND FTES:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTES
Total:			0.00	0.00

Project Statement

ACAD-N-062.000

Last Update: 03/08/95

Priority: 3

Initial Proposal: 1993

Page Num: 0116

-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	25.00	0.00
Year 2:	RES	One-time	25.00	0.00
Year 3:	RES	One-time	25.00	0.00
Total:			75.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM 6 APP 7.4 E (19)

Project Statement

Last Update: 03/17/95
Initial Proposal: 1993

ACAD-N-063.000
Priority: 1
Page Num: 0117

Title : DEVELOP GIS PLAN

Funding Status: Funded: 0.00 Unfunded: 10.00

Servicewide Issues : N20 (BASELINE DATA)
Cultural Resource Type:
RMAP Program codes : C00 (Collections and Data Management)
C03 (GIS/Data Management)

10-238 Package Number :

Problem Statement

Over the past few years the park has taken a number of steps toward developing a professional GIS capability. Most nominal data sets have been acquired although covers are not yet available for the whole park or its entire legislated area. PC ARCINFO software, a dedicated PC terminal, a digitizer, plotter, color printer, and Bernoulli Box have all been purchased. The park's GIS program is supervised by the Chief, Natural Resources and day to day activities are conducted by a dedicated term, half-time GIS technician.

There have been preliminary scoping sessions involving all divisions to identify park needs and goals for GIS but there is no written GIS Plan. A GIS Plan would assess the current status of the park's GIS capability - data needs/data management, hardware, software, and institutional procedures (organization, staffing, training and user levels). It would then identify a target GIS operation level based on park needs to be reached within a set time frame. This Plan would include all aspects of data management from data boundary, capture, and accuracy to data sharing and control; the system configuration of hardware and software and maintenance contracts; staffing and administration, including skills required of a GIS specialist; education and training for users and management, and project dependent training. The plan would outline acquisition costs and the operating budget requirements for a GIS program. The plan would also describe the network of relationships with other programs and organizations. With input from management, the plan would describe how priorities will be set for GIS projects. The GIS plan is an important step which will help the park compete for limited servicewide funding for GIS development.

Description of Recommended Project or Activity

Develop a park GIS Plan through the use of a GS-7 technician dedicated to the project for four months. In addition to these personnel costs, there would be consultation with the University

Project Statement

ACAD-N-063.000

Last Update: 03/17/95
Initial Proposal: 1993

Priority: 1
Page Num: 0118

of Maine or other facilities as needed, to provide some objective guidance and technical expertise.

BUDGET AND FTES:

		-----FUNDED-----		
Source	Activity	Fund Type	Budget (\$1000s)	FTES
			=====	=====
		Total:	0.00	0.00
		-----UNFUNDED-----		
	Activity	Fund Type	Budget (\$1000s)	FTES
Year 1:	ADM	One-time	10.00	0.30
			=====	=====
		Total:	10.00	0.30

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4 B(4)

Project Statement

Last Update: 02/28/95
Initial Proposal: 1993

ACAD-N-064.000
Priority: 3
Page Num: 0119

Title : MONITORING EFFECTS OF HERBIVORES

Funding Status: Funded: 0.00 Unfunded: 20.00

Service-wide Issues : N24 (OTHER)
N20 (BASELINE DATA)
Cultural Resource Type:
RMAP Program codes : W00 (Wildlife Management)
W01 (Native Terrestrial Animal
Management & Monitoring)

10-238 Package Number :

Problem Statement

The 1947 fire set the scene for successional changes on vegetative communities on the eastern half of MDI for an unknown time period. Early successional vegetation provided abundant forage for park herbivores and populations increased to record high numbers (park files). Park records document the dramatic effects of browsing by deer on MDI's vegetation in the late 50's and early 60's that is still visible today. The effect of these successional changes on park herbivores is unknown and warrants continued monitoring of the permanent vegetation sites. In addition, these vegetative changes (e.g., species, community structure and composition, etc.) also provide an excellent post-fire research opportunity as well as an important information source on other management and scientific interests (e.g., status of endangered plant species, forage availability, browsing trend data, etc.). Monitoring benefits a long term understanding of post-fire successional processes, vegetative communities, and browsing-herbivore ecology.

Description of Recommended Project or Activity

A review of the past study design and techniques (Saeki 91, Harrison 82) is needed to determine if this study adequately addresses the long-term monitoring of the browsing-herbivore ecology and it's the suitability to other long term vegetation monitoring. At a minimum, continued monitoring (Saeki 91) on a ten year basis is warranted to assess herbivore browsing effects. The monitoring will include an inventory of plant species within the exclosures and adjacent control plots, determine condition, availability and use for various plant species within and adjacent to the exclosures and at identified sites (Saeki 91), estimate deer and hare populations at these study sites, and document any other relevant vegetative information.

Project Statement

ACAD-N-064.000

Last Update: 02/28/95
Initial Proposal: 1993

Priority: 3
Page Num: 0120

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
			=====	=====
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	MON	Cyclic	20.00	0.00
			=====	=====
Total:			20.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP 7.4E(2) DLY RM&RESEARCH

Project Statement

ACAD-N-065.000

Last Update: 02/28/95
Initial Proposal: 1993

Priority: 3
Page Num: 0121

Title : MONITORING ABUND/DISTR OF CARNIVORES ON MDI

Funding Status: Funded: 0.00 Unfunded: 24.00

Servicewide Issues : N20 (BASELINE DATA)
N19 (CONSUMPT USE)

Cultural Resource Type:

RMAP Program codes : W00 (Wildlife Management)
W01 (Native Terrestrial Animal
Management & Monitoring)

10-238 Package Number :

Problem Statement

Carnivore information (Winter 1989, Harrison 94) provided an initial investigation of coyote and fox occurrence and distribution with some interpretation as to spacial interactions with the recent arrival (early 1980's) of coyotes to the MDI area. Food habits information (O'Connell, et.al.) presented general information on coyote diets for MDI for the late 1980's, but left many questions about the long term interactions with prey and other predators. The impact of these two canines on other carnivores (N-06, N-23,) as well as other fauna (N-05, N-07) is largely unknown. Monitoring canine ecology, coyote and fox interactions and with other carnivores on MDI supports an understanding of species ecology and has long term benefits in monitoring (N-41) the health of park species and ecosystems (i.e., ecology of other mammals, ecosystem structure and relationships, assessing harvesting pressures on adjacent lands, and in assessing stress related effects from continuing habitat fragmentation). Continuing development along the park's borders and conservation easements, increasing traffic and visitation, and other activities warrant a scientific monitoring of carnivore ecology.

Description of Recommended Project or Activity

The design and implementation of applicable monitoring techniques in a monitoring program compatible with the goals and objectives of the park's Long Term Monitoring Program (LTMP) is necessary. The selected techniques and design should provide information on populations and their distribution, predator-prey relationships, relationships between canines, and any threats (harvesting on adjacent lands, disease outbreaks, visitor conflicts, etc.) to these species. Incidental knowledge gained through these studies on the relationship with other carnivores (e.g., furbearers, bobcat) would contribute to the general knowledge of park ecosystems and the LTMP.

Project Statement

ACAD-N-065.000

Last Update: 02/28/95

Priority: 3

Initial Proposal: 1993

Page Num: 0122

BUDGET AND FTEs:

Source		Activity	FUND Type	Budget (\$1000s)	FTEs
			Total:	0.00	0.00

		Activity	FUND Type	Budget (\$1000s)	FTEs
Year 1:		MON	Recurring	6.00	0.00
Year 2:		MON	Recurring	6.00	0.00
Year 3:		MON	Recurring	6.00	0.00
Year 4:		MON	Recurring	6.00	0.00
			Total:	24.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP 7.4E(2) DLY RM&RESEARCH

Project Statement

ACAD-N-066.000

Last Update: 02/28/95

Priority: 2

Initial Proposal: 1993

Page Num: 0123

Title : BIODIVERSITY/DISTRIBUTION OF BATS ON PARK LAND

Funding Status: Funded: 0.00 Unfunded: 100.00

Servicewide Issues : N20 (BASELINE DATA)
N17 (BIODIVERSITY)

Cultural Resource Type:

RMAP Program codes : W00 (Wildlife Management)
W01 (Native Terrestrial Animal
Management & Monitoring)

10-238 Package Number :

Problem Statement

Species conservation is a major priority of the NPS. Knowledge of all or most of the species found in a park is vital to their management and protection as well as contributing to the understanding of species ecology, ecosystem relationships, and processes. Considerable discussion and scientific investigation have been devoted to conservation of species in parks and natural reserves, yet knowledge about many species, their ecology, and their place in communities, on local to global scales, remain relatively unknown. Bats are an example where information on park species, their distribution and general ecology are either unknown or have been unrepresented in management planning, funding requests, or attracting outside investigations. Bats are important components of their environments and thus are an important resource for the park. Bat information for park lands will assist regional management understanding and conservation efforts. The state presently lists seven species in the "Indeterminate Status" category needing more than causal information in assessing their population status, management, and threats.

Establishing a baseline of data on all species in the park is a primary objective of the park's I&M program. In order to assess the impacts and threats of direct and indirect activities on park resources, the park needs baseline data on species diversity and distribution, habitat utilization, ecology and relationships to their environment, and descriptions of the real and possible threats. Without this knowledge, management decisions and activities in and around the park will be hindered and the monitoring of park species and ecosystems will be incomplete.

Description of Recommended Project or Activity

The park purposes that two approaches be implemented in describing and managing bats. The first would conduct

Project Statement

ACAD-N-066.000

Last Update: 02/28/95

Priority: 2

Initial Proposal: 1993

Page Num: 0124

comprehensive sampling of park communities to determine species, their status, distribution, and habitat associations. Species would be trapped for identification, taxonomic measurements and released. Several trapping and censusing techniques will be tested to evaluate their effectiveness and application for long term monitoring. The second approach will evaluate the design and implementation of applicable monitoring techniques to be used in the park's monitoring program.

This work will recommend the monitoring design and selected techniques be used in long term monitoring, develop databases for the park GIS and I&M program, develop recommendations in the management of the species, and list bat specialists and other relationships (MDIFW) to assist with the management and conservation of bats.

BUDGET AND FTES:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTES
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTES
Year 1:	RES	One-time	35.00	0.00
Year 2:	RES	One-time	35.00	0.00
Year 3:	RES	One-time	30.00	0.00
Total:			100.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP 7.4E(2) DLY RM&RESEARCH

Project Statement

Last Update: 03/27/95
Initial Proposal: 1993

ACAD-N-067.000
Priority: 1
Page Num: 0125

Title : ENHANCE GIS PROGRAM

Funding Status: Funded: 0.00 Unfunded: 40.00

Servicewide Issues : N20 (BASELINE DATA)
N24 (OTHER)

Cultural Resource Type:

RMAP Program codes : C00 (Collections and Data Management)
C03 (GIS/Data Management)

10-238 Package Number :

Problem Statement

ACAD has an operational, PC based GIS using PCArc/Info. The current configuration of the systems includes a dedicated PC (486/66 with 16MB RAM and 340MB hard-drive) with 17" monitor, large format 8-pen plotter, large format digitizing table, small format color printer, and a dual drive 44MB cartridge Bernoulli Box. The park also has several copies of ArvView2 for Windows, which will allow personnel not trained to use GIS to access and display GIS databases.

GIS is tool of increasing importance to the park. Current operations are generating spatially related data. Also, there are large amounts of existing data in reports, files, and on maps of differing scales which have not been incorporated into the GIS and are currently difficult to access.

Fully integrating GIS into park operations is currently limited by staffing and hardware limitations. Some examples of current problems include:

- 1) ACAD currently lacks personnel to implement all requests and adequately manage the growing data library. Current personnel (part-time GS-7) has limited training in GIS, cartographic and data management concepts and issues.
- 2) The park has identified projects that require data or data manipulation that cannot be done on the PC version of its GIS software (e.g., inability to process and manipulate elevational [DEM] data).
- 3) Data storage is becoming an issue. ACAD will be receiving digital ortho-photo-quads for a portion of the park during FY95 and the current hard drive will be inadequate to store and manipulate them. In addition, while we will be able to display these data in ArcView2, we will not be able to use them with our GIS software.
- 4) The park is not currently computer networked, making GIS data inaccessible to most staff if the dedicated GIS computer is being

Project Statement

ACAD-N-067.000

Last Update: 03/27/95
Initial Proposal: 1993

Priority: 1
Page Num: 0126

used.

5) Data exchange, especially with a local cooperator (College of the Atlantic), has become more difficult due to incompatible media. Our Bernoulli Box is obsolete and will read the currently supported cartridges (150 or 230 MB). College of the Atlantic does not have the same type of tape drive as we do, so we are left having to swap data with diskettes, which is inconvenient for large GIS files.

6). The park has minimal standards to guide producers of spatial data.

7). The park has a sizeable amount of legacy data that needs to be documented according to FSDC standards and posted for distribution within the next several years. We currently lack the personnel and training to accomplish this task.

Description of Recommended Project or Activity

In order to meet the identified personnel, hardware and software needs, we propose to integrate our GIS program with that of College of the Atlantic. They not only have the hardware and software capabilities to meet our growing program needs, but they also have a dedicated professional staff and constant supply of student interns to work on park projects and data management tasks. We envision entering into a cooperative relationship with College of the Atlantic, whereby they would manage our database, participate in conducting park specific GIS applications, produce GIS products and provide training to park staff. We plan that park staff would be able to access our data at College of the Atlantic using ArvView2 via the Internet or other dial up procedure. We would continue to employ a dedicated GIS specialist to serve as the foundation of the bridge linking College of the Atlantic to the park; this person would be responsible for facilitating GIS use throughout the park, conveying program needs, and conducting park GIS applications. In order to implement a networked program, there will be a number of one-time equipment purchases needed at both the park and College of the Atlantic. In addition, we anticipate that to provide long-term GIS services to the park, an annual "fee" will be provided to College of the Atlantic.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
			=====	=====
Total:			0.00	0.00

Project Statement

ACAD-N-067.000

Last Update: 03/27/95
Initial Proposal: 1993

Priority: 1
Page Num: 0127

-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	ADM	One-time	25.00	0.00
	MON	Recurring	15.00	0.00
	Subtotal:		40.00	0.00
Total:			40.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM 2 APP. 2, 1.2

Project Statement

ACAD-N-068.000

Last Update: 01/11/95

Priority: 3

Initial Proposal: 1993

Page Num: 0128

Title : MITIGATE HEALTH THREAT FROM HUMAN WASTE

Funding Status: Funded: 0.00 Unfunded: 270.00

Servicewide Issues : N22 (VIS USE-DEV ZN)

N18 (VIS USE-BCTRY)

Cultural Resource Type:

RMAP Program codes : H00 (Pest and Hazard Management)

H02 (Hazardous Waste Management)

10-238 Package Number :

Problem Statement

During the summer season, the parking lots for popular park attractions and trailheads in Acadia National Park are overflowing with vehicles and visitors. Some of them, such as Eagle Lake and Thunder Hole, experience the same condition at other times of the year. A survey of many of these sites in 1988 revealed that nearby forests served as toilets, and that human waste was not disposed of properly. Piles of toilet paper and human feces were common, with some sites having much more than others. Improper waste disposal is a threat to human health and water quality and an aesthetic concern. Construction of toilets at these sites was specifically identified as an action item in the park's recently approved General Management Plan.

The park also operates a primitive campground on Isle au Haut, a remote island. Five lean-to shelters accomodate up to 30 people per night. Human waste is managed through two primitive composting pit toilets having a capacity of about 18 people per night. Up to 50 day use visitors may also use these toilets. Management of the toilets requires direct handling of human waste by rangers and is potentially hazardous due to diseases such as hepatitis.

Description of Recommended Project or Activity

Where levels of human waste are low, educate visitors through signs describing proper human waste disposal and indicating the nearest facility. This is covered under a separate project statement (N70) about resource protection signs.

At the major trailheads and attractions, install vault toilets. Eleven vault toilets are needed at Eagle Lake (4), Thunder Hole (2), Acadia Mountain, Pretty Marsh, Brown Mountain, Parkman Mountain, and Lake Wood. Costs are estimated at \$20,000 each for a total of \$220,000. The park could implement this proposal incrementally by installing three to four toilets per year.

Project Statement

ACAD-N-068.000

Last Update: 01/11/95
Initial Proposal: 1993

Priority: 3
Page Num: 0129

At Isle au Haut, install 2 Clivus Multrum composting toilets.
Estimated cost including transport and set up on the island is \$50,000.

Once these toilets are installed, the park will cover their maintenance. A simple monitoring program will be used to document conditions before and after the installation of the vault toilets to determine their effectiveness in mitigating the problem.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	MIT	One-time	270.00	2.00
Total:			270.00	2.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EA (ENV. ASSESSMENT)
ARPA (ARCH. RES. PROT. ACT.)

Explanation:

Project Statement

ACAD-N-069.000

Last Update: 01/11/95

Priority: 3

Initial Proposal: 1993

Page Num: 0130

Title : MITIGATE EROSION AND DETERIORATION OF HIKING TRAILS

Funding Status: Funded: 0.00 Unfunded: 60.00

Servicewide Issues : N18 (VIS USE-BCTRY)

Cultural Resource Type:

RMAP Program codes : D00 (Disturbed Area Rehabilitation)

10-238 Package Number :

Problem Statement

Acadia National Park has over 130 miles of hiking trails traversing a variety of habitats. Some mountain top and coastal headland trails contain locally rare populations of plants. Other trails pass through wetlands or rise up steeply in areas with thin soils susceptible to erosion. Trailhead parking lots are overflowing with cars during the summer season attesting to the popularity of hiking. Though many trails to Acadia's mountain summits are steep and rocky, they are inviting and accessible because they are not high and fine views can be obtained in less than an hour of walking.

For many years, trails have been deteriorating from increased use and decreased maintenance, just like the park's Carriage Roads. Staffing for trails maintenance has been inadequate for a long time. Trails staff completed a comprehensive assessment of trail conditions park-wide in June, 1993. A detailed trail work log was outlined for every trail, describing all needed work from blazing to installing rock steps. This work log estimated 8,873 persondays of work to stabilize trails at a standard providing for resource protection from erosion and trampling as well as hiker safety. This is the equivalent of over 88 person-years at 100 work days per season.

Description of Recommended Project or Activity

Completing all the work described in the Trail Work Log is going to take a long time. The park must get started on it, and the first step is to break this work into smaller more manageable units. Every individual work unit recommended has been given a priority rating of 1, 2, or 3.

Priority one work is being addressed now based on available professional staff. Priority two and three work is being addressed through volunteers and YCC crews.

With the additional \$60,000 funding, the park would hire a second professional trail crew of five persons for one season, including a work leader, to work on Priority one projects.

Project Statement

Last Update: 01/11/95
Initial Proposal: 1993

ACAD-N-069.000
Priority: 3
Page Num: 0131

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	MIT	One-time	60.00	2.50
Total:			60.00	2.50

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : OTHER ()
NHPA ((106) NAT. HIST. PRES.)

Explanation: LOCAL PROJECT REVIEW

Project Statement

ACAD-N-070.000

Last Update: 02/06/95
Initial Proposal: 1993

Priority: 1
Page Num: 0132

Title : MITIGATE VISITOR IMPACTS WITH RESOURCE SIGNING

Funding Status: Funded: 0.00 Unfunded: 57.10

Servicewide Issues : N18 (VIS USE-BCTRY)
N22 (VIS USE-DEV ZN)

Cultural Resource Type:

RMAP Program codes : I00 (Interp. of Natural Resource Issues)

10-238 Package Number :

Problem Statement

Acadia National Park receives 2.7 million visitors annually on its 38,000 acres. Most of this use however, is concentrated on a much smaller area. In the summer, trailhead parking lots are overflowing with vehicles, as thousands of visitors take to the hills on trails and Carriage Roads. The park's easily accessible summits are popular with hikers.

Many parks have trailhead signs to educate hikers about visitor use impacts and conflicts, provide safety messages, and orient hikers to the terrain and various hiking options. Acadia National Park has not made such an effort in the recent past to inform hikers at trailheads of the resource problems to which they are contributing.

In addition to trailheads/hiker impacts issue, the park has several other locations where high visitor use and/or a sensitive resource exists with little or no onsite guidance for the recreationist.

Resource issues of concern related to the above are listed below.

1. Fires: Fires are permitted only in the developed campgrounds and picnic areas in the park. The fear of fire in the local communities is still great due to a major fire in 1947. Virtually all fires in the park are human caused. A fire on any of Acadia's small islands would involve a long response time, with danger of serious impacts to island flora and fauna.

2. Camping: Camping is permitted only in the developed campgrounds. Illegal camping does occur throughout the park, with perhaps the greatest potential for damage on Acadia's small offshore islands. Escaped campfires pose the greatest danger from camping, followed by the usual impacts of vegetation damage, soil compaction, and human waste disposal.

3. Human Waste: Improper human waste disposal is prevalent throughout the park anywhere people concentrate without toilet facilities. These areas are numerous and include most park trailheads. No information is provided about proper backcountry

disposal of human waste at these locations. Some may require toilet facilities, but the message is still pertinent to all hikers.

4. Trail erosion and braiding: Park staff have recently documented parkwide trail conditions and the enormous work load required to upgrade them. There is no education of hikers regarding proper trail use such as staying on the trail and avoiding fragile subalpine plants.

5. Bicycles: Acadia's Carriage Roads have long been a magnet for bicyclists and their current rehabilitation is attracting even more bikers. Fifty seven miles of Carriage Roads however are not enough for an increasing number of them. Park staff have noted more and more illegal use of bikes on maintained park trails and unmaintained trails. This use conflicts with the enjoyment of other recreationists and may cause more wear to the trail tread.

6. Dogs: Dogs have historically been permitted on park trails if they are leashed. A majority of dogs on trails are off a leash posing dangers to ground nesting birds, small mammals, and other wildlife. Their waste is a problem and their presence may interfere with other recreationists.

7. Islands: Acadia includes several small islands all of which may be sensitive to human disturbance. Some have very significant resource values (e.g. shorebird nesting, bald eagle nesting, locally rare plant populations). Small boating recreation is increasing dramatically along the Maine coast, and sea kayaking in particular has become very popular. The park is rarely able to patrol these islands to monitor use or protect resources.

8. Cadillac Mountain: Cadillac Mountain is accessible by automobile and receives about two thirds of all park visitors, all of which is concentrated on 5 acres. A study of subalpine vegetation which also included measures of visitor use and impacts is almost completed, and it is clear that visitors are having a detrimental effect on the vegetation. There is no educational effort being made to keep visitors on summit trails.

9. Rock Climbing: Rock climbing is another activity that has increased significantly at Acadia in the 1980's, as it has nationwide. Acadia's main climbing areas are few in number and heavy in use. Especially popular is sea cliff climbing at Otter Cliffs, a unique experience for climbers. A Climbing Management Plan is being developed for the park as part of a servicewide effort. There are currently no guidelines or regulations posted for climbers at any cliffs.

10. Water Quality: Many of the lakes and ponds serve as public water supplies for the nearby towns. Swimming and boating on these lakes are restricted to protect water quality. Water companies have taken steps to educate visitors and enforce regulations, but park sign efforts can add to the educational

Project Statement

Last Update: 02/06/95
Initial Proposal: 1993

ACAD-N-070.000
Priority: 1
Page Num: 0134

campaign.

The common thread through all of the above resource issues is a lack of mitigation through appropriate interpretive signing as is common at other parks. Signing is only part of any mitigation solution, and these new signs would become part of a greater program of routine patrol, roving interpretation, and outreach to local user groups, including rental outfitters.

Two of the Resource Management Goals stated in the park's General Management Plan (GMP) are to protect and manage the park's natural resources, giving priority to those that are exceptionally fragile or significant, and to improve visitor's understanding of their impact on park resources. This project directly addresses these goals. Evaluation, management, and mitigation of visitor impacts are important components of the GMP.

Description of Recommended Project or Activity

Design work for signs protecting Little Moose Island, bald eagle nest islands, seabird nest islands, a generic trailhead resource protection panel, a generic carriage road user guidelines panel, and 16 map panels for trailhead and carriage road access points, is nearing completion.

Proposed here is continuing design work for trailhead and carriage road access points at Jordan Pond and ten other locations throughout the park, Cadillac Mountain Summit area, rock climbing areas, and Baker Island.

Estimated design costs: \$3000

Also proposed here is the production and installation of the following embedded fiberglass signs nearing design completion:

Production

Protect Rare Plants	\$2000
Protect Nesting Birds	\$2000
Protect Bald Eagles	\$2000
Share the Roads Panel	\$2000
Extra Copies 5 @ \$100\$	\$ 500
Protect Acadia National Park Panel	\$2000
Extra Copies 16 @ \$100	\$1600
Map Panels (16)	
Parkman Mtn.	\$2000
Brown Mtn.	\$2000
Eagle Lake	\$2000
Duck Brook Bridge	\$2000
Visitor Center	\$2000

Project Statement

ACAD-N-070.000

Last Update: 02/06/95

Priority: 1

Initial Proposal: 1993

Page Num: 0135

Bubble Pond	\$2000
Gorham Mtn.	\$2000
Precipice	\$2000
South Ridge Cadillac	\$2000
South Bubble	\$2000
Beehive	\$2000
Acadia Mtn.	\$2000
Cadillac Summit Area	\$2000
Cadillac North Ridge	\$2000
Ship Harbor	\$2000
Wonderland	\$2000

Installation

Installation of above 19 signs by park staff.

Costs of Material, Labor, Transportation	\$10000
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Total	\$57100
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BUDGET AND FTEs:

-----FUNDED-----					
Source	Activity	Fund Type	Budget (\$1000s)	FTEs	
			=====		
Total:			0.00	0.00	
-----UNFUNDED-----					
	Activity	Fund Type	Budget (\$1000s)	FTEs	
Year 3:	MIT	One-time	57.10	0.00	
Total:			57.10	0.00	

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4 C(5) SIGNS

Project Statement

Last Update: 02/16/95
Initial Proposal: 1993

ACAD-N-071.000
Priority: 2
Page Num: 0136

Title : DEVELOP COMPREHENSIVE VEGETATION MANAGEMENT PLAN

Funding Status: Funded: 0.00 Unfunded: 85.00

Servicewide Issues : N03 (T&E PLANTS)
N08 (CULT LANDSCAPE)
Cultural Resource Type: COMB (Combination)
RMAP Program codes : V00 (Vegetation Management)
V01 (Native Terrestrial Plant Management
and Monitoring)

10-238 Package Number :

Problem Statement

Acadia National Park's enabling legislation (1916) directs the preservation of it's ecologic, historic, scenic, and scientific values. The park now supports a complex mosaic of diverse natural and cultural resources surrounded by an increasingly urbanized landscape. It includes a number of nationally significant cultural landscapes interspersed with a wide range of natural communities. These extend from the intertidal zone to old-growth forests to sub-alpine habitats, and include 14 State critical areas, of which 11 were designated to protect rare plants or special plant habitats (see appendix I). The vegetation of the park is now threatened by visitor use, incompatible adjacent land use, and inappropriate management techniques. For example, of the 1,289 plant species found in the park, more than 150 are locally rare and of potential importance as indicators of rare habitats worthy of protection (NPS 1991); nearly one quarter (289) are non-native species which may threaten native habitats. The lack of a comprehensive and systematic hazard tree management program poses a threat to public health and safety.

Overlaid on this complex landscape are an equally diverse, and sometimes conflicting, mixture of vegetation-related management goals and issues as specifically identified in the park's General Management Plan (1991). These include:

1. Cooperatively Protect Species and Habitats of Value to the Park

The General Management Plan directs us to protect and enhance species whose presence in the park is jeopardized by their limited distribution or limited numbers. Using a list provided by a local plant taxonomist, surveys for rare species occur prior to most development or maintenance projects. However, the park needs to develop defensible criteria for identifying species of concern and a strategy for systematic surveys and documentation of results. In addition, none of the park boundaries have been

surveyed for the presence of species of concern to management, yet they are increasingly threatened by incompatible private development on park lands. Floral surveys will help us prioritize areas for resource protection. Nearly one quarter of the plant species in the park are nonnative. Invasive exotic plants such as purple loosestrife (*Lythrum salicaria*) threaten native habitats. Other nonnative plants species must be evaluated and prioritized for management based on the most recent scientific information. Management strategies must be developed for non-native plants which are the most threatening to native habitats or species of concern.

2. Mitigate Resource Impacts from Visitor Use

Many sensitive habitats, including several state critical areas, have been impacted by overuse and are in need of rehabilitation. The park needs a plan, staffing, and funding to develop and implement a rehabilitation program to mitigate these impacts and prevent them from reoccurring.

3. Survey and Mark the Park Boundary

The boundary of the park is complex, and commercial and residential development lie directly adjacent to the park. An increasing number of impacts to park resources are occurring because the vegetation along the boundary is not managed and boundary lines are obscured soon after they are surveyed. These intrusions include the building of private structures and dumping of thousands of cubic yards of contaminated fill on park land. Methods must be developed which allow limited staff and funding to manage vegetation once the boundary is surveyed.

4. Manage Fire

The park's Fire Management Plan is in the final stages of development. It raises issues related to the protection of developed areas within the park and on urbanized adjacent lands in an area of extreme fuel loadings. Cultural landscape preservation and natural resource needs must be juggled with structural fire protection and hazard fuels management.

5. Evaluate, Treat, and Maintain Cultural Landscapes

Culturally significant landscapes must be protected. The park is currently developing cultural landscape reports on the Carriage Road System and the historic Park Loop Road. In addition, historic lighthouses, structures, and landscapes need to be evaluated from a cultural landscape perspective and recommendations made to guide their preservation and maintenance, while balancing structural fire protection and other needs.

6. Rehabilitate the Carriage Roads, and Protect and Enhance the Original Design Intent of the Historic Park Loop Road -

The Carriage Road system is currently being rehabilitated, which

will require extensive revegetation along road shoulders, ditches, and in staging areas. Vistas designed by Beatrix Ferrand and other nationally prominent landscape architects were an integral part of the Carriage Road system and the Park Loop Road, but have grown over and need to be rehabilitated. Methods for vista rehabilitation must be developed which protect sensitive species of concern to management yet provide for ecologically sound conversion of plant communities dominated by trees to those dominated by shrubs and ground covers. The most feasible method of maintenance must be determined or the vistas will be obscured by stump sprouts within just a few years.

Native plants for revegetation of the Carriage Roads and the Park Loop Road (Federal Highways projects) are not currently available commercially, and the park has entered into a cooperative agreement with the Soil Conservation Service for plant propagation to support native plant revegetation. In addition, the park has been successful in obtaining Challenge Cost Share funds to support native plant salvage, and the development of a small nursery. However, the funding for these efforts is insecure. The park needs to develop vegetation maintenance guidelines which use integrated management strategies for maintaining 52 miles of carriage roadsides, cultural landscapes around 17 bridges, 2 gatehouses, and rehabilitated vistas.

7. Minimize Impacts of Nonpark Roads within the Park -

The General Management Plan directs park staff to consult and coordinate with the state of Maine, local communities, and interested citizens to analyze the environmental impacts on park resources along state highways, utilities, and other nonpark roads which traverse the park. There are currently no memorandums of agreement nor action plans to guide management of vegetation along roadsides or utilities. This results in haphazard management of vegetation, possible impacts on rare species, potential indiscriminate use of herbicides, and other resource impacts.

8. Conduct a Park Ethnographic Study -

An ethnographic assessment is needed to obtain information on park-related ethnic groups regarding their use of and value assigned to park vegetative resources. Examples may include tradition Native American use of sweet grass and ash for basketry and traditional collection of beach heather, berries, and macroalgae by local families. Other important ethnographic resources need to be identified.

9. Catalog and Treat the Park Collections -

The GMP directs the staff to conduct preservation, collection, and maintenance work and document the locations, scope, and sizes of Acadia's natural history collections currently distributed among repositories nationwide. The park lacks a curator to maintain the herbarium, and has developed an informal agreement

with a local college to be the repository of herbarium specimens until a plan can be developed to address the curatorial needs for the park. The current informal agreement is not sufficient to meet National Park Service policies, and places undue burden on the College to maintain park collections without compensation.

10. Communicate Research Data to the Public -

Acadia's heavy visitation and high public profile make the park an ideal place to educate the public about resource issues such as rare plant and habitat protection, the use of native plants in landscapes, least toxic methods of pest control, and cultural landscape protection. Yet the park lacks a strategic plan to ensure that resource information is transferred to interpreters.

In addition to these specific directives from the General Management Plan, the park is faced with other vegetation related issues such as hazard tree management. Currently, different organizational units within the park are attempting to address many of these directives in various degrees, but in an scattered approach which lacks direction or cohesion. Current actions may or may not be based on the most recent scientific information. There has been no attempt to prioritize issues. Little progress has been made to integrate long-term maintenance and resource concerns into the design of landscapes in developed areas. These issues will not be addressed by the Servicewide Inventory and Monitoring Program in the next three years.

Description of Recommended Project or Activity

To address these issues in a comprehensive and systematic manner, a vegetation management plan must be developed (and subsequently implemented - see project statement ACAD-N-0073) based on management experience and existing research information. It will coordinate management actions related to the issues previously outlined, and will set forth functional roles and responsibilities within the park.

Objectives of the Vegetation Management Plan will be to:

1. promote the health and safety of park visitors and employees (for example, through the development of a documented hazard tree program);
2. perpetuate native species through rare plant surveys, the identification and maintenance of habitat, enhancement efforts for specific species, and management of habitats prone to degradation from over-use, non-native species invasion, and other threats;
3. rehabilitate and maintain historically significant scenic vistas, and other important cultural landscapes while balancing

Project Statement

Last Update: 02/16/95
Initial Proposal: 1993

ACAD-N-071.000
Priority: 2
Page Num: 0140

natural resource needs;

4. address information management needs, including specific recommendations for spatial data management (GIS) related to research, mitigation, protection, and education concerning the park's flora;
5. promote the education of park visitors, neighbors, and employees about issues related to vegetation;
6. guide maintenance of road and utility corridors and park boundaries to manage vegetation in an ecologically sensitive and economically efficient manner.
7. serve as a source of information to other natural area managers, including those at other National Park Service units, regarding vegetation management.

The plan will be developed by a multi-disciplinary team of professional or university specialists in vegetation management. It will be advised by a committee of park managers representing all divisions and park neighbors and State and local agencies with interest or expertise in vegetation management issues. The advisory team will draw on the experience of other agencies such as The Nature Conservancy and the U.S. Forest Service with experience in specific topics such as rare plant protection or hazard tree management. The plan will be based on the most recent scientific information available.

This project will be completed either through contract or cooperative agreement. Every effort will be made to tap Challenge Cost Share, Forest Service, and other funding to maximize cost effectiveness. Costs are estimated based on the development of the park's Water Resource Management Plan, which is currently being developed using a similar strategy. The products will include:

1. Vegetation Management Plan
2. Any required National Environmental Policy Act documents
3. Slide set for interpretive/educational purposes

Without this plan, the issues identified in the Statement of the Problem (above) will continue to be addressed in a disjointed way by the resource preservation, maintenance, visitor protection, and interpretation divisions. The occurrence of plants of concern to management may be unknown or undocumented and State listed and locally rare species may be lost. Nationally significant cultural landscapes will not be maintained, or will be maintained in a manner which is ecologically or economically flawed. Herbicides may be applied to State or town road and utility corridors within the park without park approval. Visitor safety will be compromised without an approved and implemented hazard tree plan.

Project Statement

ACAD-N-071.000

Last Update: 02/16/95

Priority: 2

Initial Proposal: 1993

Page Num: 0141

BUDGET AND FTES:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTES
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTES
Year 1:	MIT	One-time	50.00	0.00
Year 2:	MIT	One-time	35.00	0.00
Total:			85.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : NHPA ((106) NAT. HIST. PRES.)
EA (ENV. ASSESSMENT)

Explanation:

Project Statement

ACAD-N-072.000

Last Update: 01/11/95
Initial Proposal: 1993

Priority: 1
Page Num: 0142

Title : MONITORING EPISODIC ACIDIFICATION OF PARK STREAMS

Funding Status: Funded: 0.00 Unfunded: 25.00

Servicewide Issues : N11 (WATER QUAL-EXT)
N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : Q00 (Water Resources Management)
Q01 (Water Resources Management)

10-238 Package Number :

Problem Statement

acidic deposition resulting from air pollution has been documented as affecting aquatic ecosystems in the eastern United States. One suspected avenue for this effect is the sudden acidification associated with large runoff events such as those following rapid snowmelt or heavy rainfall. Quantification of the duration, extent and significance of this effect is difficult. Further the proper protocol and technique for measuring these events remains to be defined. Researchers at the University of Maine have conducted several investigations at Acadia National Park over the past 10+ years which have established baseline conditions for surface water chemistry of ponds and streams, and which have also documented episodic acidification, Kahl (1986), Heath (1992). Most of the streams in ACAD have not been sampled for 10 years. During this time acid deposition as measured by the park NADP site has continued to remain relatively constant at approximately pH 4.5. In addition, the potential for acidification, changes in nutrient cycling, and fundamental changes in forest health have been suggested as a result of "nitrogen saturation", a possible consequence of atmospheric deposition.

Description of Recommended Project or Activity

The park recommends contracting with the university of Maine to resample water quality sites in Acadia National Park and to evaluate methods for interpreting episodic acidification data.

In order to develop a protocol for evaluating episodic acidification, the project will resample the original stream sites studied by Kahl, (1985) to evaluate any recent changes in the mechanisms of acid-base status. Specifically, automated water samples will be taken late March through May (exact dates depending on snowpack and spring rains). Samples will be analyzed for complete chemistry including: closed cell pH, air-equilibrated pH, ANC, conductance, color, dissolved organic

Project Statement

ACAD-N-072.000

Last Update: 01/11/95
Initial Proposal: 1993

Priority: 1
Page Num: 0143

carbon (DOC), calcium, magnesium, potassium, total aluminum, nitrate, sulfate, and silica. In order to duplicate the sampling done in 1982, additional sampling will be done in early summer and at least once in the fall. Results will be tabulated in a final report and electronically on diskette. The final report will contain statistical and graphical interpretation of the data from all sites and a comparison with the previous sampling period. Recommendations will be made for future monitoring protocols at Acadia National Park.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
			=====	=====
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
			=====	=====
Year 1:	MON	One-time	25.00	0.00
Total:			25.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4 E(2)

Project Statement

ACAD-N-073.000

Last Update: 01/11/95
Initial Proposal: 1994

Priority: 1
Page Num: 0144

Title : CARRIAGE ROAD MODEL VISITOR USE STUDY

Funding Status: Funded: 0.00 Unfunded: 48.90

Servicewide Issues : N22 (VIS USE-DEV ZN)
N20 (BASELINE DATA)

Cultural Resource Type:

RMAP Program codes : R00 (Social Science Research)

10-238 Package Number :

Problem Statement

Fifty miles of carriage roads were constructed by John D. Rockefeller in Acadia National Park between 1913 and 1940 to provide carriage driving access to park resources in an unobtrusive manner. Their construction was in part a response to the admission of automobiles to Mount Desert Island. The carriage road system is significant for its state of the art design and construction, which is exhibited in its sensitivity to the landscape, stone bridges, and broken stone road composition. A carriage road experience is found in only one other national park unit and a few other locations nationwide. The carriage road system in Acadia is a National Register Historic Site set amidst the scenic beauty and natural resources of Acadia National Park.

Increased multiple use of the park's carriage roads over the past ten years has resulted in increased visitor complaints and generated concerns among park staff for the visitor experience. Most complaints center on conflicts between bicyclists and other users, and include too many bikes, bike speed, and courtesy. A park team is using the Visitor Experience Resource Protection Process (VERP) developed by the Denver Service Center to develop a carriage road visitor use strategy. VERP is a rational, defensible carrying capacity process for deciding which kinds and levels of use are appropriate, and where, when, and why they are appropriate. Management action is hampered by a lack of visitor use level data for the carriage road system and the true extent of the conflicts occurring. Current information is entirely anecdotal.

Description of Recommended Project or Activity

A visitor use study is proposed which would: 1. design and implement a visitor use estimation system for the carriage roads, 2. select indicator variables (e.g. number of bicycles encountered per hour, number of complaints per season etc.) and develop standards of quality (e.g. 100 bicycles per hour, 20 complaints per season etc.) for the carriage road visitor

Project Statement

ACAD-N-073.000

Last Update: 01/11/95

Priority: 1

Initial Proposal: 1994

Page Num: 0145

experience for a future monitoring program [an indicator variable is something measurable related to resource or social carrying capacity and the standard is the level at which the indicator must be maintained to preserve the resource or experience] and 3. recommend management actions to achieve and preserve a quality visitor experience based on the standards developed.

This research project would occur in two phases over two years. Phase 1 would concentrate on the design and implementation of a visitor use estimation system to provide baseline information, with some informal interviews and focus group sessions to help further define the problem and generate a list of potential indicators of quality. In Phase 2, a visitor survey would be administered to a representative sample of carriage road users. The aim of the survey is to help select indicator variables and standards of quality for the visitor experience. The survey would also address the following questions:

What are the problems (behaviors, crowding)?
 How frequently do they occur?
 Where do they occur?
 When do they occur?
 Who is involved?

Better information from this study will assure that management actions preserve a quality visitor experience on the carriage roads.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
			=====	
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	22.45	0.00
Year 2:	RES	One-time	26.45	0.00
			=====	
Total:			48.90	0.00

(Optional) Alternative Actions/Solutions and Impacts
 (No information provided)

Project Statement

Last Update: 01/11/95
Initial Proposal: 1994

ACAD-N-073.000
Priority: 1
Page Num: 0146

Compliance codes : OTHER ()

Explanation: OMB VISITOR SURVEY APPROVAL

Project Statement

ACAD-N-074.000

Last Update: 03/08/95

Priority: 1

Initial Proposal: 1994

Page Num: 0147

Title : EVALUATE MERCURY CONTAMINATION IN AQUATIC ENVIRON

Funding Status: Funded: 200.00 Unfunded: 0.00

Servicewide Issues : N11 (WATER QUAL-EXT)
N14 (AIR POLLUTION)

Cultural Resource Type:

RMAP Program codes : Q00 (Water Resources Management)
Q01 (Water Resources Management)

10-238 Package Number :

Problem Statement

The Maine Departments of Environmental Protection and Inland Fisheries and Wildlife have over the last year been collaborating to identify levels of chemical contamination found in fish populations inhabiting Maine freshwater lakes and to assess the risk that these levels pose to human and wildlife consumers. The National Park Service (NPS) has recently learned of some unpublished data from this ongoing study that some fish sampled from two lakes in Acadia National Park (ANP) were contaminated with very high levels of mercury.

A total of four brook trout and four small-mouth bass were collected from Bubble and Hodgdon Ponds, respectively, within ANP on Mount Desert Island. Tissue samples from two large sized bass had the highest mercury levels (3.4 and 2.8 ppm) found in this study of 120 Maine lakes, while two smaller individuals had levels of 0.8 ppm. Mercury levels in tissue samples from the trout were found to be 0.2 ppm. The mercury levels in bass are extremely elevated and are cause for concern both from the standpoint of humans and fish and wildlife predators. The mercury levels in trout would be considered "elevated", but not as alarming as the contamination reported for the bass. Mercury is one of the few metals which strongly bioconcentrates and biomagnifies in the food chain; it has only harmful effects when present in fish and wildlife.

Deposition from the atmosphere has been implicated as a major source of mercury in Maine. Utilities (coal-fired power plants) and incinerators are suspected of being two of the more important sources for airborne mercury emissions. Low pH and low alkalinity waters present in ANP lakes increase the potential for greater bioaccumulation of mercury in fish.

Park staff are most immediately concerned about the potential public health implications of these preliminary elevated mercury levels because of the number of people who engage in fishing at ANP. The reported mercury levels found in two of the bass from ANP exceed the U.S. Food and Drug Administration's action level (1.0 ppm) for mercury in fish tissue that will be consumed by

Project Statement

Last Update: 03/08/95
Initial Proposal: 1994

ACAD-N-074.000
Priority: 1
Page Num: 0148

humans. In addition, park staff are very concerned about the impacts that elevated mercury levels may have on fish and wildlife predators. Given the limited amount of sampling conducted to date, however, the park staff cannot adequately determine whether or not this mercury contamination represents a real public health threat and/or ecological problem at ANP.

The ANP Acting Superintendent requested guidance from the Maine Bureau of Health as to whether the elevated mercury levels found at ANP represent a public health problem. In response to our inquiry, the State of Maine issued a state-wide public health advisory in May 1994, warning pregnant women, nursing mothers, women who may become pregnant and children less than eight years of age not to eat fish from lakes and ponds in Maine, including those located within ANP. The health advisory also warned other members of the public to limit eating fish from these waters to 6-22 fish meals per year. The State decided not to post warnings at ponds and lakes known to harbor fish with elevated levels of mercury. ANP is following the State's recommendations about this public health problem. Park staff have also alerted their employees about the mercury contamination issue and written an article on this subject for the park's summer newspaper that is distributed to visitors.

Description of Recommended Project or Activity

At present, very little is known about mercury contamination at ANP. Only two lakes have been sampled and two species of fish have been analyzed for mercury at the park. No information exists about the processes that regulate mercury deposition and uptake in ANP waters. Moreover, the ecological effects of mercury contamination on ANP aquatic organisms is unknown. An integrated research and monitoring program is critically needed to fully understand the extent and potential impacts of elevated mercury levels in ANP's aquatic freshwater environment. The following are examples of projects that could help park staff to develop this needed information base:

1. Characterize mercury contaminated fish and their distribution in the park.
2. Determine mercury levels in other aquatic organisms (invertebrates).
3. Demonstrate food chain transfer of mercury in order to predict species at risk from mercury contamination.
4. Assess the environmental factors controlling mercury bioavailability to aquatic organisms (e.g., mercury cycling, relationships to water chemistry, the role of wetlands in the transport of mercury to lake ecosystems).

Project Statement

ACAD-N-074.000

Last Update: 03/08/95

Priority: 1

Initial Proposal: 1994

Page Num: 0149

5. Determine a historical data set about trends in mercury deposition in water or fish.
6. Assess other contaminant levels present in freshwater bodies.
7. Develop models of mercury deposition in park waters.
8. Develop a monitoring program to assess long-term changes in mercury deposition and uptake by aquatic organisms.

BUDGET AND FTEs:

-----FUNDED-----					
	Source	Activity	Fund Type	Budget (\$1000s)	FTEs
1995:	WATER-RES	RES	One-time	25.00	0.00
	FED-OTHER	RES	One-time	50.00	0.00
			Subtotal:	75.00	0.00
1996:	WATER-RES	RES	One-time	25.00	0.00
	FED-OTHER	RES	One-time	50.00	0.00
			Subtotal:	75.00	0.00
1997:	FED-OTHER	RES	One-time	50.00	0.00
			Total:	200.00	0.00
=====					
-----UNFUNDED-----					
		Activity	Fund Type	Budget (\$1000s)	FTEs
			Total:	0.00	0.00
=====					

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM2 APP. 2, 1.6

Last Update: 02/16/95
Initial Proposal: 1994

Project Statement

ACAD-N-075.000
Priority: 1
Page Num: 0150

Title : SURVEY OF FRESH WATER AQUATIC VEGETATION

Funding Status: Funded: 39.91 Unfunded: 0.00

Servicewide Issues : N03 (T&E PLANTS)
N17 (BIODIVERSITY)

Cultural Resource Type:

RMAP Program codes : V00 (Vegetation Management)
V02 (Native Aquatic Plant Management and Monitoring)

10-238 Package Number :

Problem Statement

Greene (1990) and Calhoun et al. (1994) provide the best surveys of freshwater aquatic vegetation undertaken in ACAD within the last century, yet both were very limited in scope and focused primarily on upland habitats and species other than submerged aquatics. Greene (1990) discovered the first and only known occurrence of the globally rare prototype quillwort, *Isoetes prototypus*, in the United States. *I. prototypus* meets criteria developed by The Nature Conservancy for listing as a G1 (critically imperiled) species. It also meets Maine Natural Areas criteria for listing as S1 (state endangered) species. The extreme rarity of *I. prototypus* may warrant its inclusion on the federal list of endangered species. A second rare aquatic, alga pondweed, *Potamogeton confervoides*, a candidate species for federal listing, was found by accident in 1994 in an ACAD lake (A. Haines, pers. comm.). The extreme rarity of these two species, as well as historic, yet unrelocated occurrences of *Isoetes acadensis* (Rand and Redfield 1894), (Maine historic occurrence, endangered in Massachusetts and rare in New Brunswick) and *Cardamine longii* (threatened in Maine) from ACAD (Rand and Redfield 1894), warrants further systematic surveys of aquatic vegetation. Searching other ACAD ponds for these plants of national significance is of specific concern.

Because many aquatics have narrow habitat requirements (Hellquist and Crow 1980; Kott and Britton 1983) changes in water quality can greatly affect their continued existence. Atmospheric deposition, high mercury levels such as those recently documented in fish from Bubble Pond (T. Haines, pers. comm.), and changes in nitrogen levels may all pose threats to aquatic species. An aquatic inventory coupled with current water quality data will provide valuable baseline information with which changes over time in each waterbody can be tracked.

Description of Recommended Project or Activity

Project objectives are to systematically survey aquatic vegetation in ACAD's freshwater ponds and streams, with special emphasis on locating and censusing populations of rare species. Field efforts will be concentrated in late July and early August when most species are identifiable. Whenever practical, a canoe or raft will be used to expedite surveys.

Species identification, whenever it cannot be completed in the field, will be undertaken at the herbaria of College of the Atlantic, University of Maine, University of New Hampshire, or Harvard University. Specialists will be consulted to confirm identifications when necessary.

The park recommends amending an existing cooperative agreement with the College of the Atlantic to employ Dr. Craig Greene and Dr. Barre Hellquist to survey ponds and streams for submerged aquatics in ACAD. Dr. Greene has conducted research on the flora of the Mount Desert Island region for the past fifteen years and Dr. Hellquist is a recognized authority on aquatic plants of New England. The occurrence and present status of threatened and endangered vascular plants of federal, state, and regional significance will be assessed throughout the park, including the Schoodic peninsula and Isle au Haut, in this two year effort. Products of the study will include: 1) a final report to the Park Service summarizing findings, with emphasis on the status of rare species and habitats and suggestions for their management; 2) herbarium voucher specimens of representative species; 3) a checklist of the vascular plants encountered during fieldwork; 4) photographic slides of rare species and habitats for interpretive presentations; and 5) a presentation to park personnel of study results.

TIMETABLE

May-June 1995--Herbarium and library research in Bar Harbor, Orono

June-September 1995--Fieldwork in Acadia National Park; additional herbarium research as necessary

September 1995-May 1996--Species verification by specialists as necessary

December 1995--Progress Report to ACAD

June-September 1996--Fieldwork in Acadia National Park; additional herbarium research as necessary; informational presentation to park personnel

December 1996--Final Products to ACAD, NPS North Atlantic Region

Project Statement

ACAD-N-075.000

Last Update: 02/16/95

Priority: 1

Initial Proposal: 1994

Page Num: 0152

BUDGET AND FTEs:

-----FUNDED-----					
	Source	Activity	Fund Type	Budget (\$1000s)	FTEs
1995:	RG-RM-NAT	RES	One-time	21.61	0.00
	UNIV-COLL	RES	One-time	18.30	0.00
			Subtotal:	39.91	0.00
			Total:	39.91	0.00

-----UNFUNDED-----					
		Activity	Fund Type	Budget (\$1000s)	FTEs
			Total:	0.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : ESA (ENDANGERED SPECIES ACT)
OTHER ()

Explanation: 516 DM2 APP. 2, 1.6

Project Statement

ACAD-N-076.000

Last Update: 02/16/95
Initial Proposal: 1994

Priority: 1
Page Num: 0153

Title : EVALUATE PURPLE LOOSESTRIPE MANAGEMENT PROGRAM

Funding Status: Funded: 13.00 Unfunded: 0.00

Servicewide Issues : N05 (NON-NAT PLANTS)
N17 (BIODIVERSITY)
Cultural Resource Type:
RMAP Program codes : V00 (Vegetation Management)
V04 (Exotic Plant Management)

10-238 Package Number :

Problem Statement

Purple loosestrife (*Lythrum salicaria*) is an herbaceous perennial, introduced from Eurasia before 1814 (Louis-Marie 1944). While it's striking displays of color have made it a favorite of gardeners, it's highly invasive nature has seriously impacted wetland communities throughout the United States. Fernald (1940) first noted purple loosestrife displacing native vegetation, which later caused concern that important wildlife food plants such as cattail would decline (McKeon, 1959; Smith, 1959; Smith, 1964; Novak, 1968). Purple loosestrife encroachment is now recognized as a cause for decline in wetland quality (Malecki and Rawinski, 1979; U.S. Fish & Wildlife Service, 1979; Rawinski and Malecki, 1984).

Rawinski and Malecki (1984) noted that serious ecological consequences appear to result from purple loosestrife invasion in marshes. Loss of open water and mudflats reduces feeding areas for shorebirds and waterfowl. Muskrats (*Ondatra zibethica*) and marsh wrens (*Cistothorus palustris*) use cattail (*Typha latifolia*) stands rather than purple loosestrife. While some native animals have been shown to benefit from purple loosestrife, these are primarily species with broad niches that can exist in a variety of communities. Animals that lose their habitat to purple loosestrife invasion are species with narrow niches that rely on cattails and other outcompeted graminoid plants (Thompson et al. 1987).

Wetlands comprise 20% of the total area of Acadia National Park (Calhoun et al. 1994), and harbor the highest percentage of the park's state and federally listed plants and animals (Greene 1990). Purple loosestrife was first noted on a plant list of Mount Desert Island in the mid-1920's (Wherry 1928), however it was not recognized as a threat to park wetlands until the early 1980's.

After five years of preliminary work, ACAD staff determined that management of purple loosestrife was "prudent and feasible" according to NPS Management Policies (National Park Service 1988), because few park wetlands were infested and populations

Project Statement

Last Update: 02/16/95
Initial Proposal: 1994

ACAD-N-076.000
Priority: 1
Page Num: 0154

were still relatively low. We developed and implemented a comprehensive purple loosestrife management program in 1987, which was later incorporated into the park's Integrated Pest Management Plan (Connery 1991). The goals of this program are to prevent the spread of purple loosestrife into uninfested wetlands, and reduce or maintain low populations of loosestrife in wetlands already infested so that wetland values are protected.

Management of purple loosestrife at Acadia includes monitoring wetlands for the presence of loosestrife, preventing invasion of wetlands by educating local landowners and nursery owners, chemical treatment of existing infestations, and quantitative monitoring where purple loosestrife has been long established to assess treatment success. This integrated approach has been used for eight years. Other parks are also using the strategies we have developed, yet the program has never been peer reviewed. Without such review we cannot ensure that the park is addressing the purple loosestrife issue in a scientifically sound and efficient manner, and meeting the goal of protecting park wetland values.

Issues of concern to the park include:

1. Are sampling and monitoring techniques appropriate to meet program goals? Are quantitative monitoring methods currently in use statistically valid? If not, how should such a monitoring program be conducted?
2. Has the effort to date achieved program objectives? What alternative management actions can be taken to achieve program goals? What new treatment strategies exist? What are the risks and benefits of different treatment strategies? No treatment? Continued chemical treatment every year? Less frequent chemical treatment? Biological control?
4. If chemical treatment is appropriate, are we using the most appropriate product? What alternatives exist? What level of infestation should trigger management action?
5. Loosestrife is increasing outside park boundaries. Given this increase, are our management efforts worthwhile?

Description of Recommended Project or Activity

We will convene a two day workshop to review and evaluate the park's purple loosestrife management program, and make specific recommendations to improve the effectiveness and efficacy of our monitoring and control efforts. Prior to the workshop, park staff will provide a report summarizing the current management program and monitoring results to workshop participants. This report will include detailed information about the goals and history of program development, quantitative monitoring methods and results, habitat analysis and extent of infestations, and outreach activities.

Project Statement

ACAD-N-076.000

Last Update: 02/16/95

Priority: 1

Initial Proposal: 1994

Page Num: 0155

An individual will be hired through a cooperative agreement to facilitate and coordinate the workshop. Experts in plant ecology, statistics, biological control, exotic plant management, and NPS policy will be invited to participate. In addition, parks concerned with purple loosestrife management will be allowed to participate at their expense. Workshop participants will make site visits, review reports and data, critique sampling methods, and make recommendations.

Following the workshop, park staff and the facilitator will produce a technical report summarizing the meeting and resulting recommendations. We will also seek publication of a program overview in the Natural Areas Journal or similar publication. The Integrated Pest Management Plan will be updated by the park based on recommendations resulting from the workshop.

Recommendations will be implemented in the 1996 field season.

BUDGET AND FTEs:

-----FUNDED-----					
Source	Activity	Fund Type	Budget (\$1000s)	FTEs	
1995: RG-RM-NAT	MIT	One-time	13.00	0.00	
Total:			13.00	0.00	
-----UNFUNDED-----					
	Activity	Fund Type	Budget (\$1000s)	FTEs	
Total:			0.00	0.00	

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : OTHER ()

Explanation: FEPCA, FIFRA, NEPA, STATE REGS.

Project Statement

ACAD-N-078.000

Last Update: 02/15/95
Initial Proposal: 1994

Priority: 2
Page Num: 0156

Title : EMERGENCY NATIVE PLANT REVEGETATION PROJECT

Funding Status: Funded: 17.68 Unfunded: 0.00

Servicewide Issues : N24 (OTHER)
N05 (NON-NAT PLANTS)
Cultural Resource Type:
RMAP Program codes : V00 (Vegetation Management)
V01 (Native Terrestrial Plant Management
and Monitoring)

10-238 Package Number :

Problem Statement

Active construction sites, trail relocations, and areas of high visitor impacts are in critical need of revegetation to prevent erosion and invasion by exotic plants, protect stream quality, reduce visitor traffic and continued degradation, screen park development, and improve scenic quality. Despite park intentions to comply with park service policies and legal mandates, native plants are not commercially available from any source. The park lacks funding to support site rehabilitation efforts and mitigate ongoing resource damage. The establishment of a native plant revegetation program within the park is essential to provide native plant materials.

A cooperative agreement was developed with the Soil Conservation Service in 1992 to propagate 27 species of native plants for use in revegetation of Federal Highways projects. Work is proceeding well, however plant materials will not be available until 1995, and then will only be sufficient to revegetate Federal Highways construction sites.

A native plant nursery was established with Challenge Cost Share and Carriage Road Funding in 1993 to hold plant materials salvaged from carriage roads until rehabilitation proceeds to the point where revegetation can be completed. Despite vigorous attempts by park personnel this year, no Challenge Cost Share partner could be located to continue to develop and maintain the nursery and associated salvage efforts in 1994. Without support to maintain the nursery, it will soon be overtaken with weeds, approximately 500 salvaged plants will be lost, the nursery site will need rehabilitation to restore the original lawn, and our efforts from 1992 will have been wasted.

In addition, this fall the park acquired approximately 1500 native plants, valued at over \$15,000, from the Ozone Effects Study. These plants, and those salvaged in 1993 which were overwintered in the nursery, must either be planted or repotted in spring of 1994 or they will be lost, yet the park lacks the funding to support this effort.

Project Statement

ACAD-N-078.000

Last Update: 02/15/95

Priority: 2

Initial Proposal: 1994

Page Num: 0157

Description of Recommended Project or Activity

The park seeks emergency one-year funding to:

1. Maintain the native plant nursery at Hulls Cove
2. Plant or repot containerized native plants acquired from the ozone fumigation study.

Proposed nursery maintenance consists primarily of weeding, watering, and pest management. Cover crops sown last fall in unused beds will be tilled to prevent reseeding and increase soil organic matter. These beds will be maintained in a weed free state, ready to accept any plants salvaged next spring. Plants salvaged in 1992 will be maintained. Woody species will require potting in containers if they are not used in site rehabilitation. Plants must be closely monitored throughout the summer to prevent desiccation and loss. Irrigation and shade systems will be maintained. An integrated pest management action plan will be developed to manage non-native red ants which are infesting the nursery site, and prevent their spread throughout the park as plants are used for revegetation.

Plants obtained from the ozone fumigation research project must be removed from winter storage, watered frequently, and either installed at rehabilitation sites or repotted and maintained. In addition to their value for revegetation, these plants have been carefully studied and may be used to monitor ozone effects in the future. For this reason, detailed records must be maintained regarding their planting location and treatment as they are permanently installed at revegetation sites, and care should be taken to maintain the current tagging system.

The park is attempting to leverage several funding sources to support the revegetation program in 1994. Approximately \$7,500 will likely be allocated from the Denver Service Center to support 14 days of plant salvage from Park Loop Road shoulders prior to construction in 1993. This work will be conducted by a team of maintenance staff under the direct supervision of natural resource personnel. This effort will serve as a training exercise for park laborers, and help build a foundation for integrating native plant revegetation in all park construction activities. In addition, funding from the Carriage Road Rehabilitation account has been committed to support limited revegetation work (GS-7 Botany Technician, part time) and endangered plant inventories on proposed vista rehabilitation sites. A \$500 donation was received from the Mt. Desert Garden Club to support this program in 1994.

Proposed Budget

Personnel:

Reveg. Leader (GS-7) - 3 day/week, April-Oct. \$7,025
(Remainder of salary to be provided by Carriage Road, DSC, and other accounts)
GS-5 Seasonal (or 2 SCAs) - 6 months \$6,500

Project Statement

ACAD-N-078.000

Last Update: 02/15/95
Initial Proposal: 1994

Priority: 2
Page Num: 0158

Supplies/Materials: \$2,500

GSA Vehicle:

May - September (6) x \$275/month \$1,650
Travel

Total: \$17,675

As in 1993, we will continue to recruit volunteers from the Mt. Desert and Bar Harbor Garden Clubs to assist with nursery maintenance and plant salvage efforts. The park will continue to seek base funding to support a comprehensive native plant revegetation/site rehabilitation program (see ACAD N-57.000).

BUDGET AND FTEs:

Source		Activity	FUND Type	Budget (\$1000s)	FTEs
1994:	RG-RM-NAT	MIT	One-time	17.68	0.80
Total:				17.68	0.80

Activity		FUND Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4 E(3)

Project Statement

ACAD-N-079.000

Last Update: 01/11/95
Initial Proposal: 1994

Priority: 1
Page Num: 0159

Title : MITIGATE VISITOR IMPACTS WITH RESOURCE SIGNING

Funding Status: Funded: 0.00 Unfunded: 5.00

Servicewide Issues : N18 (VIS USE-BCTRY)
N22 (VIS USE-DEV ZN)

Cultural Resource Type:

RMAP Program codes : I00 (Interp. of Natural Resource Issues)

10-238 Package Number :

Problem Statement

Acadia National Park has virtually no signs educating visitors how to tread lightly to protect park resources. The park's 2.7 million visitors per year concentrate their use on trails and at popular attractions. Information on camping, fires, pets, bicycle use, sensitive areas, trail etiquette, etc. is not available at the trailhead. Other parks (e.g. Rocky Mountain) have educational trailhead signs that serve multiple purposes of resource protection, orientation, and safety.

The park's GMP has several resource management goals, including protection and management of natural resources, giving priority to those that are exceptionally fragile or significant, and to improve visitors' understanding of their impact on park resources. This project directly addresses these goals from the GMP and will help build an understanding of and constituency for park values.

For more detail, see Project Statement N070.000 which is more comprehensive in scope.

Description of Recommended Project or Activity

This sub-project proposes to fund only the design and photo preparation of resource education signs recommended in Project N070.000. A GS 5 seasonal employee with graphics and design skills will be hired to complete the project. The park sign committee will provide detailed input to this person through representation of all divisions. Products will be ready art for embedded fiberglass signs for the following:

1. Trailheads: this design will serve as a model for the twenty eight trailhead signs.
2. Little Moose Island: rare plant location with high visitor use.

Project Statement

ACAD-N-079.000

Last Update: 01/11/95

Priority: 1

Initial Proposal: 1994

Page Num: 0160

3. Cadillac Mountain: sub-alpine sensitive plant area and high visitor use area.

4. Baker Island: remote island rarely patrolled by park staff; potential of catastrophic fire. Uninformed visitor use is increasing.

5. Otter Cliffs Climbing Area: increased climbing at coastal rock climbing area receiving impacts from human waste, erosion, with concerns for aesthetics and bolting as well.

We estimate the cost of this to be \$5,000. With the design completed and ready art available, sources of funding will continue to be sought to manufacture, mount, and install the signs as soon as possible. Friends of Acadia has offered to contribute \$6,000 and volunteer labor to assist in the manufacture, mounting, and installation of the first signs.

For more detail see Project N070.000.

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	MIT	One-time	5.00	0.20
Total:			5.00	0.20

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes : EXCL (CATEGORICAL EXCLUSION)

Explanation: 516 DM6 APP. 7.4 C(5)

Project Statement

ACAD-N-080.000

Last Update: 02/23/95
Initial Proposal: 1995

Priority: 1
Page Num: 0161

Title : CARRIAGE ROAD VISITOR USE: PHASE 2

Funding Status: Funded: 0.00 Unfunded: 80.00

Servicewide Issues : N18 (VIS USE-BCTRY)
Cultural Resource Type:
RMAP Program codes : R00 (Social Science Research)

10-238 Package Number :

Problem Statement

Fifty six miles of carriage roads were constructed on Mount Desert Island (MDI) by direction of John D. Rockefeller between 1913 and 1940. Most of the lands on which these roads were built were eventually donated to Acadia National Park (ANP). Twelve miles of carriage roads and surrounding lands remain in the hands of the Rockefeller family today and are linked to those in the park to provide a continuous system. The roads were built to provide carriage driving access to the natural resources and scenic beauty of MDI and the park in an unobtrusive manner. Their construction was in part a response to the admission of automobiles to MDI in 1913.

The carriage road system is significant for its state-of-the-art design and construction, which is exhibited in its sensitivity to the landscape, stone bridges, and threelayered, broken stone road composition. Moreover, a carriage road experience is found in only one other national park unit and a few other locations nationwide. The carriage road system in ANP is a National Register Historic Site.

Increased use of the carriage roads in the park over the past ten years has generated complaints from users and concerns among park staff. Although the roads were built for the horse and carriage, they are now used extensively from May to October for walking and bicycling. Data collected at entry points in 1994 show that 70% of use is by bicyclists and 26% is by walkers. Runners make up slightly less than 2% of users with horseback riding and carriage driving just slightly less than that. Within some sections of the carriage road system, the ratio of bikers to walkers increases to 85% to 13%. The major concerns expressed about carriage road use are conflicts between bicyclists and other users, and include too many bicycles, bicycle speed and courtesy, and safety. A change in the visitor experience may be occurring, largely as a result of the development of the mountain bike. The mountain bike has made carriage road riding easier with its wide tires and multiple gears. This change in experience, the result of increased and apparently conflicting uses, may be neither desirable nor appropriate for ANP.

In December 1993, park staff convened with Marilyn Hof of the

Project Statement

Last Update: 02/23/95
Initial Proposal: 1995

ACAD-N-080.000
Priority: 1
Page Num: 0162

Denver Service Center and Dr. Robert Manning of the University of Vermont to explore using the National Park Service Visitor Experience Resource Protection (VERP) process for the carriage roads. VERP is a carrying capacity process for safeguarding the quality of park resources and park experiences. The VERP process assesses and manages carrying capacity by determining indicators and standards of the quality of park resources and the visitor experience. Indicators of quality are specific, measurable variables which are important to determining the quality of park resources and the visitor experience. Standards of quality define the quantitative condition of each indicator variable. Carrying capacity is managed through a monitoring program which ensures that standards of quality are not violated.

Park staff have continued to move forward with the VERP process, recognizing the greatest need as objective information about carriage road use and users, and about indicators and standards of quality for the carriage road experience.

A two phase research program was planned to provide the information necessary for application of the VERP process. Phase 1 was begun in the summer and fall of 1994, and consisted of exploratory research designed to scope out and define the issues involved in management of carriage road visitor use. As part of Phase 1, a survey of carriage road visitors and preliminary estimations of carriage road use were made. Prior to this research only anecdotal evidence existed regarding issues surrounding the carriage roads. Data from these visitor studies are now being analyzed, and reports are being prepared.

Additional and more detailed social science research remains to be conducted before the VERP process can be fully implemented and a carriage road management plan written. Phase 2 builds on Phase 1 by focusing on identifying and establishing indicators and standards of quality visitor experiences and finalizing protocols to monitor visitor use levels on the carriage road system. Without the Phase 2 research proposed here, park efforts to resolve increasing visitor conflicts and crowding on the carriage roads will become stalled.

Description of Recommended Project or Activity

Phase 2 research will integrate these four strategies.

1. Focus group sessions. While carriage road visitors were surveyed about their attitudes and preferences regarding problems in the 1994 visitor survey, several interest groups have not yet been queried. Such groups could include local community residents, local businesses, Friends of Acadia, and the Mount Desert Island Bicycling Association. Focus group sessions will be conducted with these interest groups to further define the issues associated with carriage road use and to help identify

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Project Statement

Last Update: 02/23/95
Initial Proposal: 1995

ACAD-N-080.000
Priority: 1
Page Num: 0163

potential indicators of quality.

2. Visitor survey. A second visitor survey will be conducted to help identify indicators and standards of quality for the visitor experience. Potential indicators of quality identified in Phase 1 research will be presented to a representative sample of visitors who will be asked to rate the importance of these indicator variables. In addition, respondents will be asked to express their normative standards for these indicator variables. From these data, social norms will be calculated which will serve as the basis for determining standards of quality to be incorporated into the VERP process.

3. Education program. Initial indications are that behavior of carriage road visitors may contribute substantially to existing conflicts. This suggests that a visitor education program may be critical to managing carriage road use. This part of the research program will involve a literature review focused on evaluation of public education programs. In addition, the visitor survey described above will be used to assess the effectiveness of current visitor education programs and to determine visitor attitudes toward alternative educational programs.

4. Visitor use monitoring system. Phase 1 research is now developing insights into the complexities of designing a comprehensive visitor use monitoring system for the carriage roads. However, more analysis and technical assistance is needed. Researchers at the Aldo Leopold Institute of the U.S. Forest Service in Missoula, Montana, are developing a technical handbook of trail use monitoring. A site visit by one of these researchers will be scheduled to determine how this information might best be applied to the carriage road system, and a report outlining monitoring procedures will be completed. In addition, visitor use measures might best be displayed and analyzed using a Geographic Information System (GIS) approach. Visitor use data collected in Phase 1 research will be used to determine how such data can best be incorporated within a GIS format.

The Phase 2 research described above would be conducted during 1995 and 1996. Cost of this research will total approximately \$80,000. Completion of this research will allow for continued application of the VERP process to the carriage road system through development of indicators and standards of quality for the visitor experience and design of a visitor use monitoring program. This information will then serve as the basis for writing a carriage road visitor use management plan.

Project Statement

ACAD-N-080.000

Last Update: 02/23/95

Priority: 1

Initial Proposal: 1995

Page Num: 0164

BUDGET AND FTEs:

-----FUNDED-----				
Source	Activity	Fund Type	Budget (\$1000s)	FTEs
			=====	=====
Total:			0.00	0.00
-----UNFUNDED-----				
	Activity	Fund Type	Budget (\$1000s)	FTEs
Year 1:	RES	One-time	80.00	0.00
Total:			80.00	0.00

(Optional) Alternative Actions/Solutions and Impacts
(No information provided)

Compliance codes :

Explanation: