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Evaluation and Financial Study
of the
Critical Areas Program



Presented To:
113th Legislature
by the
Critical Areas Advisory Board

December 1987

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Cover photograph: Mount Katahdin showing the Knife's Edge, Baxter Peak, and the edge of the Tablelands located in Baxter State Park. This area was placed on the Register of Critical Areas on October 8, 1981 and includes approximately 1380 acres. Mount Katahdin possesses the greatest assemblage of rare plants in Maine, and also the most extensive area of alpine tundra vegetation in Maine. Forty-two species of rare vascular plants are known from Mount Katahdin, twenty-three of which are found only on Mount Katahdin in Maine. One plant, the Starry Saxifrage, Saxifraga foliolosa, is found only on Mount Katahdin in the 48 contiguous states. This is one of 122 Critical Areas owned and managed solely by the State of Maine.

Under Maine's recently passed Endangered Plant Act, 22 species are proposed as being listed as Endangered, and 10 species as Threatened that are found on Mount Katahdin. Photo by Hank Tyler.



STATE OF MAINE
EXECUTIVE DEPARTMENT
STATE PLANNING OFFICE

JOHN R. McKERNAN, JR.
GOVERNOR

RICHARD H. SILKMAN
DIRECTOR

December 30, 1987

The Honorable Members
113th Maine Legislature
State House
Augusta, ME 04333

Dear Legislator,

I am very pleased to submit to you this report on the Evaluation and Financial Study of the Critical Areas Program.

The First Regular Session of the 113th Legislature directed the Critical Areas Advisory Board to conduct a study of the Critical Areas Program to evaluate whether current staffing and funding levels are adequate to accomplish the Program's mandate (Private and Special Law of 1987, Chapter 67).

We find that the Critical Areas Program has made significant progress in documenting and placing Critical Areas on the Register of Critical Areas. Appropriated funds have been wisely expended. Land conservation and environmental education have benefited from the Program's accomplishments. The Program's information on Critical Areas, and its assistance provided to landowners and businesses are essential for the State of Maine to wisely protect and manage Critical Areas.

We conclude that the Program is underfunded and understaffed to accomplish the Program's expanded legislative mandate. Inflation, low levels of funding, and a recent heavy demand for services and information have slowed the documentation of Critical Areas. Given the current level of funding the Program cannot meet its legislative mandate.

The Board recommends that the Legislature provide sufficient staffing and funding so the Critical Areas Program can meet its mandate and present workload, and provide the proper services to the State of Maine for the 1990's for Critical Area protection and education.

The Critical Areas Advisory Board appreciates the opportunity to undertake this study and to provide this report to the Legislature on one of Maine's vital natural resource programs.

Sincerely,

Dawn Hill-Lowther, Chair
Critical Areas Advisory Board

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EXECUTIVE SUMMARY

The 113th Legislature directed the Critical Areas Advisory Board to conduct a study of the Critical Areas Program to evaluate whether current staffing and funding levels are adequate to accomplish the Program's mandate (Appendix I).

In conducting this study, the Board drew upon the Critical Areas Program's staff and publications, the Register of Critical Areas itself, and the financial records of the State Planning Office. All the background reports used in this study are available from the Maine State Planning Office.

The study found that the Maine Critical Areas Program was the first natural areas program to be established and funded by State government in New England. Given historically modest levels of funding, the Program has made considerable progress in documenting Critical Areas and establishing the Register of Critical Areas.

Accomplishments of the Program include:

1. Establishment of 585 areas on the Register of Critical Areas;
2. Completion of 86 statewide topical inventories, 13 specific site inventories, 26 miscellaneous reports, and 35 educational brochures;

3. Frequent use of the Program's information by landowners and businesses;
4. Development of a positive working relationship with public and private landowners;
5. Technical assistance provided to state agencies; and
6. Development of a series of educational brochures that are frequently used by Maine students and teachers in environmental education.

The Study found that recent additional mandates and responsibilities have diminished the Program's capability to respond. The Legislature in recent years has mandated new tasks without funding. The study of "Uncut Forests and Unique Alpine Areas" (Reference 1), the Endangered Plant Act (1986) and the Heritage Coastal Act (1986) have all placed considerable financial strain on the Program. The increasing number of areas on the Register has resulted in an increasing demand of staff time to maintain the Register and assist landowners seeking technical assistance. The combination of increased demands for information, new mandates, and management of an enlarged listing of Critical Areas has slowed the addition of new areas onto the Register. Recent economic growth has resulted in greatly increased number of requests for information from consultants and businesses on a demand/response basis.

The Study concludes that, while initial funding levels might have been sufficient, the Critical Areas Program is currently underfunded and understaffed to undertake its three primary mandates: 1) to conduct a statewide inventory and place areas on the Register, 2) to establish and maintain the official listing of Endangered Plant Species, and 3) to develop and maintain the listing of Heritage Coastal Areas. In the 1990's, the State of Maine will need to have a strong Critical Areas Program with an ability to manage its own data in a computer format common to other natural area programs. Inventories of Maine's very special natural resources that are conducted by the Program are an investment in Maine's future. A substantial list of rare and unusual topics has yet to be inventoried. A plant ecologist and associated increased funding are requested to meet this particular acute need. An information specialist is requested to maintain and manage a computerized data base and respond to requests for information. Maine needs to build and maintain a strong Program so that state government can actively assist Maine citizens and businesses in maintaining the State's special "quality of life".

The Critical Areas Advisory Board makes six specific recommendations to maintain and meet the demands of an expanded Critical Areas Program (draft legislation is provided as Appendix X):

1. Existing State positions for the Program's director and botanist should continue to be included in the State Planning Office budget. The Program's botanist position has been assigned partially to implement the recently passed Endangered Plant Act.

2. The Program should be strengthened by creating 2 1/2 new State-funded positions for: 1) an information specialist/data base manager; 2) plant ecologist; and 3) 1/2 time secretary.

3. For contractual services to identify Critical Areas, the Program should be funded at \$75,000 annually.

4. For the production of educational materials and for operating expenses the Program should be funded at \$20,000 annually.

If items 1-4 are approved and funded as requested, the mandate of the Endangered Plant amendment will be able to be implemented. The "all other" account total would be \$95,000.

5. In FY93, the State Planning Office should reassess the Program's progress to determine if the level of State funding over a five year span has been sufficient to protect Maine's Critical Areas.

6. The Legislature should provide General Fund appropriations to support Heritage Coastal Areas identification and conservation.

INTRODUCTION

Maine's natural landscape - mountains, lakes, ponds, rivers, coastal islands, rocky shores, salt marshes and sand beaches - make the State of Maine an extraordinary place. The State's diversity of outstanding natural features is unmatched in the eastern United States. The predominantly rural setting of the State of Maine containing special assemblages of natural areas and associated endangered species contribute to Maine's special "quality of life".

The Allagash Waterway, Mount Katahdin and Mount Desert Island are national treasures. A variety of State parks, fish and wildlife management areas, and private nature preserves protect a diversity of special features in Maine.

During the last fifty years, Maine citizens have played a significant role in protecting the State's and the nation's natural treasures. Some of the first sanctuaries were established on the Maine coast during the early decades of this century by the National Audubon Society. The Nature Conservancy, a national non-profit land conservation organization, has one of its oldest and largest chapters in Maine.

It was in this context that the State of Maine became involved in natural areas conservation in the early 1970's. Maine citizens participated in the statewide Natural Areas Inventory in 1970 and 1971 which compiled a listing of 2,029 special areas. The Natural Areas Inventory was the precursor to the Critical Areas Program. A 1972 report by the Natural Resources Council of Maine recommended that the State of Maine continue with natural areas documentation and conservation.

In 1974, the 106th Legislature passed the Critical Areas Act (Appendix II) directing the State Planning Office to identify "critical areas" and promote their conservation. The term "critical areas" was used to refer to exceptional and special natural areas in the state.

"Critical Areas. 'Critical areas' means areas containing plant and animal life or geological features worthy of preservation in their natural condition or other natural features of significant scenic, scientific or historical value." (Title 5, §3311-A(1) M.R.S.A.)

The Critical Areas Program was established by the Legislature as a non-regulatory land use planning and conservation program. Because of the Legislature's foresight, Maine established the first state natural areas program in New England.

The Legislature mandated that a statewide inventory be conducted to identify significant areas worthy of conservation

(Title 5 §3311 M.R.S.A.). After the inventoried areas are ranked, the landowners of the most significant areas are notified that they own a candidate Critical Area. The ten members of the Critical Areas Advisory Board, who are appointed by the Governor, review candidate Critical Areas and recommend areas to be officially designated as Critical Areas. The Director of the State Planning Office establishes the State's official listing, the Register of Critical Areas (Title 5 §3314 M.R.S.A.).

This non-regulatory Program promotes the protection of Critical Areas through a variety of educational efforts with landowners and the general public. The Program focuses its effort to work directly with private and public landowners on the conservation and protection of Critical Areas. In addition, the staff undertakes public educational efforts that include public lectures and slide shows, as well as preparation and dissemination of printed materials.

ACCOMPLISHMENTS AND DESCRIPTION OF ACTIVITIES

Overview

During the past decade the Critical Areas Program has made substantial progress in greatly increasing the State's knowledge of Critical Areas in the State of Maine, primarily through undertaking statewide inventories. The Program's comprehensive statewide inventories are the underlying foundation for successful Critical Area designation. Eighty-six statewide inventories on major topics (e.g., waterfalls, peatlands, and seabird nesting islands), and thirteen site-specific inventories (e.g. Jasper Beach, Bigelow Preserve and the Mahoosuc Mountain Range) have been undertaken since 1974 (Figure 1; Table 1; Appendix III). The inventories have identified over 1563 significant areas. The Register of Critical Areas contains the official listing of 585 areas (Figures 2, 3; Table 2; and Appendix IV).

The Program has developed a highly respected report format, the planning report, for its Critical Areas surveys. These planning reports are widely acknowledged as both scientifically accurate and presentable to citizens and landowners as a major information resource, and have come to serve as standard references for Maine's unique natural resources.

The Critical Areas Program planning reports, miscellaneous reports, and educational brochures are available to Maine citizens in most major libraries, numerous school systems, and nature centers.

Figure 1. Critical Areas Program Inventories *

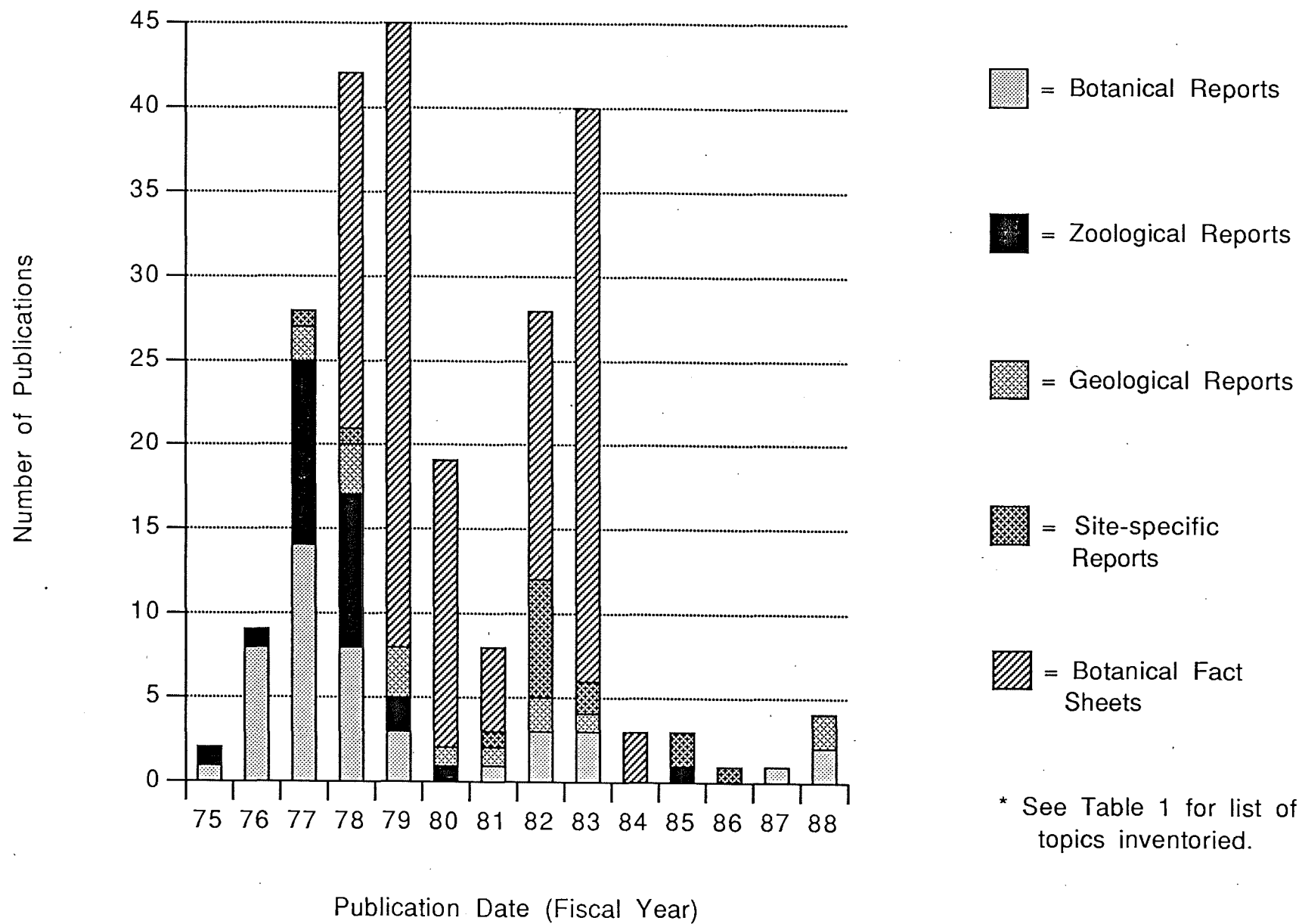


Table 1. Critical Areas Inventories*

Fiscal Year 1975

2 Statewide Inventories (Luminous Moss, and Terns).

Fiscal Year 1976

9 Statewide Inventories (Great Rhododendron, Mountain-laurel, Sassafras, Flowering Dogwood, Inkberry, Slender Blue Flag, Spotted Wintergreen, Scarlet Oak, and American Oyster).

Fiscal Year 1977

27 Statewide Inventories (Furbish's Lousewort, Chesnut Oak, Ginseng, Long's Bitter Cress, Nodding Pogonia, Canada Buffalo-berry, Slender Cliff-brake, Spicebush, Small Whorled Pogonia, Ram's-Head Lady's-Slipper, New Jersey Tea, Clammy Azalea, Prairie White-Fringed Orchid, Atlantic White-cedar, Alcid Nesting Habitat, Leach's Storm Petrel Nesting Habitat, Piping Plover Nesting Habitat, Black Tern Nesting Habitat, Wading Birds, American Eider, Horseshoe-Crab Breeding Sites, Gaper Clam, Dwarf Tellina, Katahdin Arctic Butterfly, Tourmaline, and Rose Quartz Crystals).

1 Site-specific Inventory (Casco Bay Geology).

Fiscal Year 1978

21 Statewide Inventories (Arctic-Alpine Vegetation on Mountains, Tupelo, Red Chenille Alga, Field Oxytrope, Cut-leaved Anemone, Northern Painted-cup, Small Round-leaved Orchid, Auricled Twayblade, Red Beard Sponge, Quahogs, Astarte Complex, Discordant and Little Black Mussels, Brittle Star, Smooth Top Shell, Intertidal Bedrock Areas of High Species Diversity, Yellow-nosed Vole, Bog Elfin, Bedrock Fossils, Emerged Glaciomarine Deltas, Sand Beach Systems, and Coastal Shell Middens).

1 Site-specific Inventory (York County Coastal Zone Geology).

Fiscal Year 1979

37 Botanical Fact Sheets and 8 Statewide Inventories (Old-Growth White Pine, Old-Growth White Oak, Shagbark Hickory, Brachiopods, Priapulid, Waterfalls, Gorges, and Petroglyphs).

Fiscal Year 1980

17 Botanical Fact Sheets and 2 Statewide Inventories (Colonial Waterbirds, and Eskers).

Fiscal Year 1981

5 Botanical Fact Sheets and 2 Statewide Inventories (Whitewater Rapids, and Peatlands).

1 Site-specific Inventory (Appalachian Trail).

Fiscal Year 1982

16 Botanical Fact Sheets and 3 Statewide Inventories (Freshwater Wetlands, Coastal Raised Peatlands, and Arethusa).

7 Site-specific Inventories (Jasper Beach, Bigelow Preserve, Squa Pan Public Lot, Telos Public Lot, Baxter State Park, Belgrade Esker/Delta Complex, and No. 5 Bog and Jack Pine Stand).

Fiscal Year 1983

34 Botanical Fact Sheets and 4 Statewide Inventories (Jack Pine, Subarctic Plants of the Coast, Old-Growth Forests, and Geological Features).

2 Site-specific Inventories (Mahoosuc Mountains, and the Great Heath).

Fiscal Year 1984

3 Botanical Fact Sheets

Fiscal Year 1985

1 Statewide Inventory (Landlocked Arctic Charr/Blueback Trout).

2 Site-specific Inventories (T15 R9 Aroostook County, and Old-Growth Forests, Subalpine Forests and Alpine Areas in Baxter State Park).

Fiscal Year 1986

1 Site-specific Inventory (Old-Growth Forests, Subalpine Forests, and Alpine Areas in the Bigelow Preserve, Mahoosuc Mountains, and the Baldpates).

Fiscal Year 1987

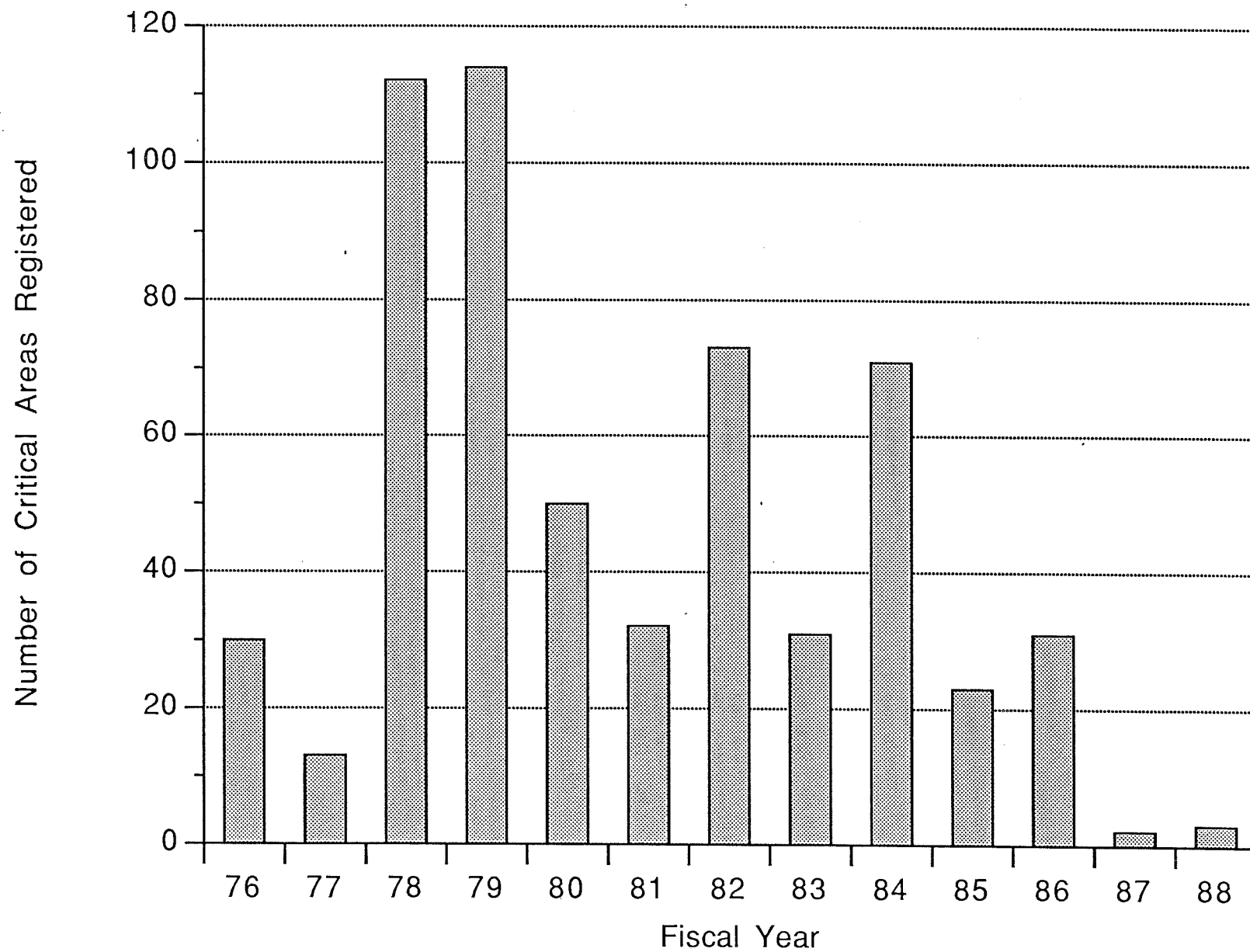
1 Statewide Inventory (Ribbed Fens).

Fiscal Year 1988

4 State-wide Inventories (Old-Growth Forests in Aroostook County, Pitch Pine/Scrub Oak Barrens, Scenic Lakes, and Inland Sand Beaches).

* Listed by date of publication of resultant Planning Report or Miscellaneous Report

Figure 2. Number of Critical Areas Registered per Fiscal Year*



* Total 585 Areas

Land Conservation Accomplishments

A number of significant land conservation accomplishments have been achieved as a result of the Program's efforts. Several Critical Areas have been donated by private citizens to The Nature Conservancy for permanent protection. A very few special areas, that rank high because of their biological diversity, have been purchased by The Nature Conservancy (Table 3). A large portion of No. 5 Bog in Attean Township, Somerset County, was donated to a private land trust as a direct result of a Critical Areas Program evaluation of the area for the National Park Service. This area was also designated as a National Natural Landmark by the National Park Service.

Since its inception the Program has focused a substantial portion of its attention to the coast. Many of the Program's inventories have been directed at coastal topics (Table 1), and approximately one-half of the areas on the Register are coastal. The Critical Areas Program's personnel assisted with the establishment of the Wells National Estuarine Reserve.

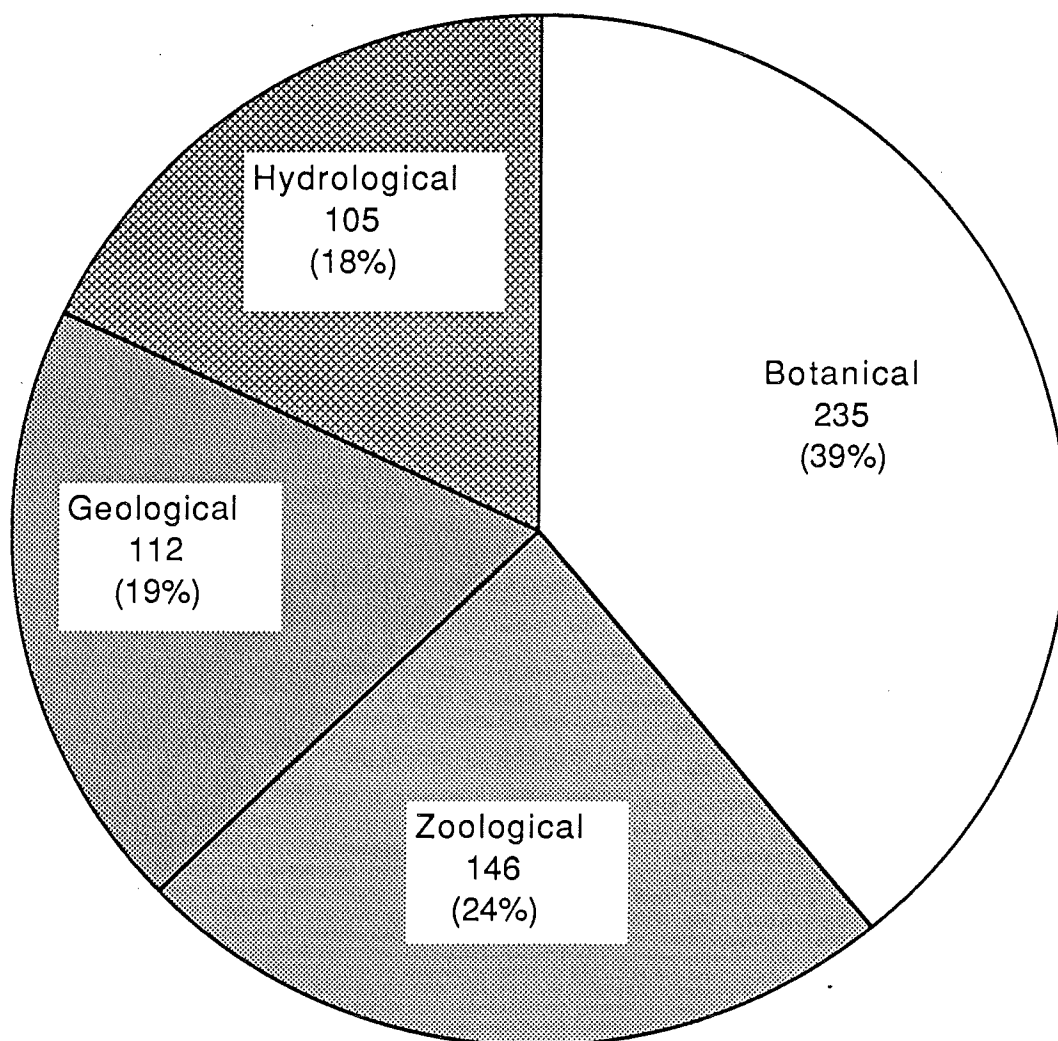
The majority of Critical Areas are privately owned either by individuals or corporations (Figure 4; Appendix V). The Program's efforts have demonstrated that most Critical Areas landowners are willing on a voluntary basis to maintain and protect these special areas. These private landowners have made a significant contribution to the State by their voluntary efforts.

In cooperation with the Maine Coast Heritage Trust, the Program developed and produced with the assistance of The Nature Conservancy, The Landowner's Options, a "how-to" guidebook for land conservation in Maine (Reference 2). This booklet, which has been widely distributed, provides landowners with the necessary information for them to make their own decisions on the protection of their Critical Area. The information and knowledge provided by the Program has been a very helpful conservation tool for Maine landowners. A progress report on the Program was issued in 1986 (Reference 3).

During the last three years, the incumbent Governor has recognized the extraordinary contributions made by individual landowners and corporations by an annual presentation of the Maine Critical Areas Award. Recipients of the Award include the late "Pete" Sawyer of Ashland, Marion Davis of Machiasport and the Briggs family of Harrison. Corporations and others receiving the Award include the Coburn Lands Trust, City of Rockland, the Oyster River Bog Association, and Boise Cascade.

Citizens and landowners of the State of Maine have derived a definite benefit from the Critical Areas Program. There has been a significant increase in the State's knowledge and understanding of Critical Areas and endangered plants. While many of the gains for the State are intangible, information from the Critical Areas Program has resulted in improved natural areas management and

Figure 3.
Number of Registered Critical Areas (585) by Topic*

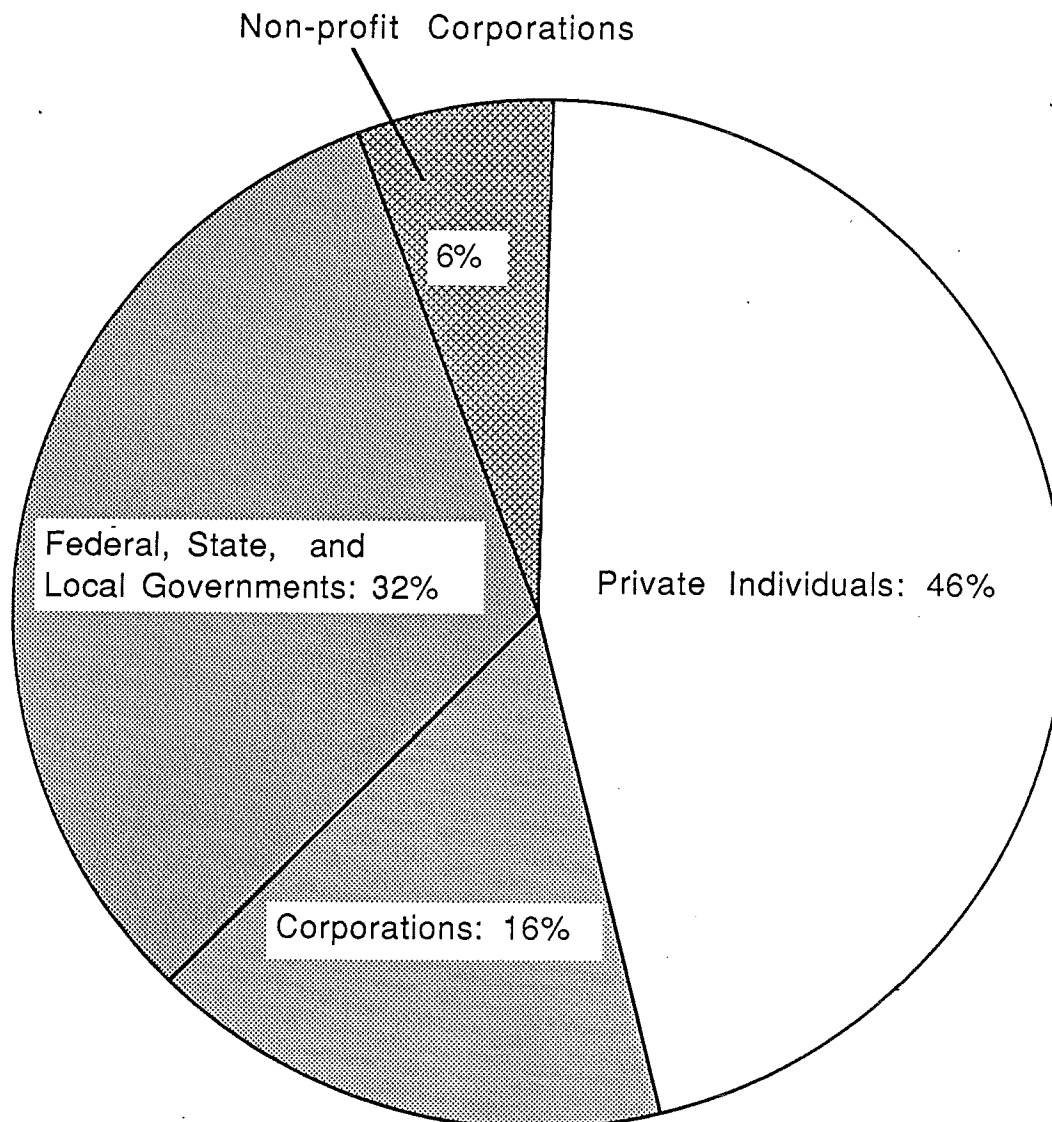


* As of December 1987

A few areas are categorized in more than one topic because they possess a variety of values.

See Appendix IV for a detailed listing of each category

Figure 4. Ownership of 585 Registered Critical Areas *



* As of December 1987

For a more detailed breakdown of the Critical Areas ownership categories, see Appendix V

Table 2.
Categorization of Areas Identified by the
Critical Areas Program

Register of Critical Areas	585
Qualified-but-Unregistered Areas	48
Nominated Areas	50
Candidate Areas	191
Field Checked Areas	689
Total	<u>1563</u>

Table 3.
Special Critical Areas
Recently Acquired by The Nature Conservancy

<u>Number</u>	<u>Name</u>
38	Great Duck Island (North)
39	Great Duck Island (South)
68	Upper Goose Island Heronry
108	Little Brimstone Island
153	Chapman Devonian Brachiopods
156	Bar Island Seabird Nesting Area
255	Woodland Bog
261	Brothers Island Eider Nesting Area
262	Brimstone Island
287	Hay Ledge Eider Nesting Area
347	Central Peatlands, Great Wass Island
348	Southwest Heath, Great Wass Island
523	Rocky Island Rare Plant Station
572	Mistake Island Rare Plant Station

conservation. State policy includes provisions for Critical Areas protection. In the private sector, The Nature Conservancy and the Maine Coast Heritage Trust actively pursue the protection of Critical Areas.

The Program has demonstrated that voluntary land conservation does work successfully in Maine. There has been broad support for protecting Critical Areas on a voluntary basis which is demonstrated by the high level of landowner response to the Program's biennial monitoring of Critical Areas on the Register. In response to the 1985 and 1986 biennial monitoring survey, landowners reported on the current status of 86% of the 515 areas on the Register at that time (Reference 4).

Staffing

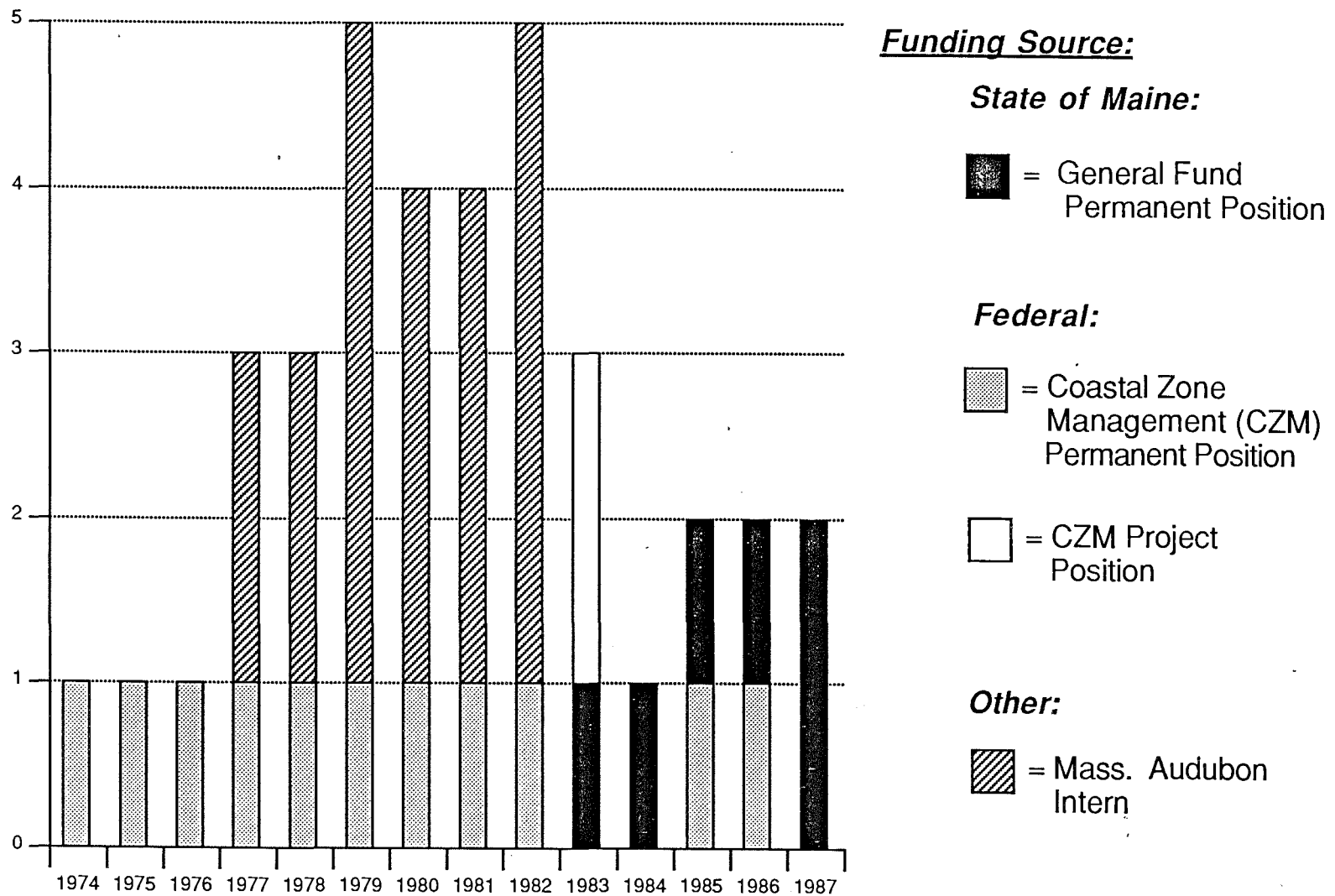
The Critical Areas Program currently has two full-time staff, and secretarial support from the State Planning Office. The staff includes a Senior Planner, Hank Tyler, a marine biologist who has been with the Program since its inception in 1974. The other position is a Research Technician filled by Patricia DeHond, a botanist. Both positions are now State funded. The State Planning Office provides secretarial and receptionist staff support funded from a federal Coastal Zone Management grant. Between 1977 and 1983 a series of environmental internships and project positions were used to augment permanent staff positions (Figure 5). It was during this time that the Program completed its largest number of inventories and placed the most areas on the Register of Critical Areas (Figures 1, 2).

The staff is expected to carry out a full range of legislatively mandated tasks and associated administrative tasks (Title 5 §3311, 3314, 3315, 3316):

Legislatively mandated tasks:

- statewide inventories (Section 3311)
- landowner notification (Section 3314)
- compile the Register of Critical Areas (Section 3314)
- assist with the voluntary conservation of Critical Areas (Section 3311)
- compile the Official List of Endangered and Threatened plants (Section 3315)
- identify, designate and assist with the protection of Heritage Coastal Areas (Section 3316)
- remove areas from the Register of Critical Areas if necessary (Section 3314).

Figure 5. Number of Critical Areas Program Staff Positions



Administrative tasks:

- administer contracts for inventories
- provide information to the Critical Areas Advisory Board
- respond to requests for information to schools, businesses and consultants
- environmental review for State agencies, consultants and corporations
- maintain an information data base of Critical Area sites and topics
- biennial monitoring of Critical Areas
- maintain contact with landowners through newsletters
- produce educational material on Critical Area features
- provide public presentations on Critical Areas
- coordinate with Federal Agencies
- coordinate with State Agencies
- participate in State and National workshops and conferences

Financial Support

When the Critical Areas Program was initiated, the Legislature appropriated \$30,000 from the General Fund annually in "all other" for administrative and contractual expenses. The State Planning Office has also provided additional financial support to the Program from its General Funds appropriation. From 1974 to 1983, the one permanent staff position was supported by federal funds through the Coastal Zone Management (CZM) program. In the early 1980's small grants were made to the Critical Areas Program by the National Park Service and U.S. Fish & Wildlife Service of the Department of the Interior. From 1974 to 1983, the Program spent approximately \$21,000 to \$43,000 annually from General Fund appropriations and from \$5,000 to \$20,000 from federal grants (Figure 6). Figure 7 shows the Program's expenditures in 1974 dollars. Thus, in addition to General Fund support, the federal Coastal Zone Management program provided substantial funding to the Program for many years.

Federal Coastal Zone Management Program's grant allocations to the Program were reduced in FY 85 and FY 88. In FY 85, federal CZM support was eliminated from the Program and the one federally funded Program staff position was converted from federal to State support by re-allocating "all other" funds into personal services to support the newly authorized state position (Figure 5). Thus, State General Funds did not support statewide inventories in FY 85 and FY 86.

Figure 6. Critical Areas Program Expenditures

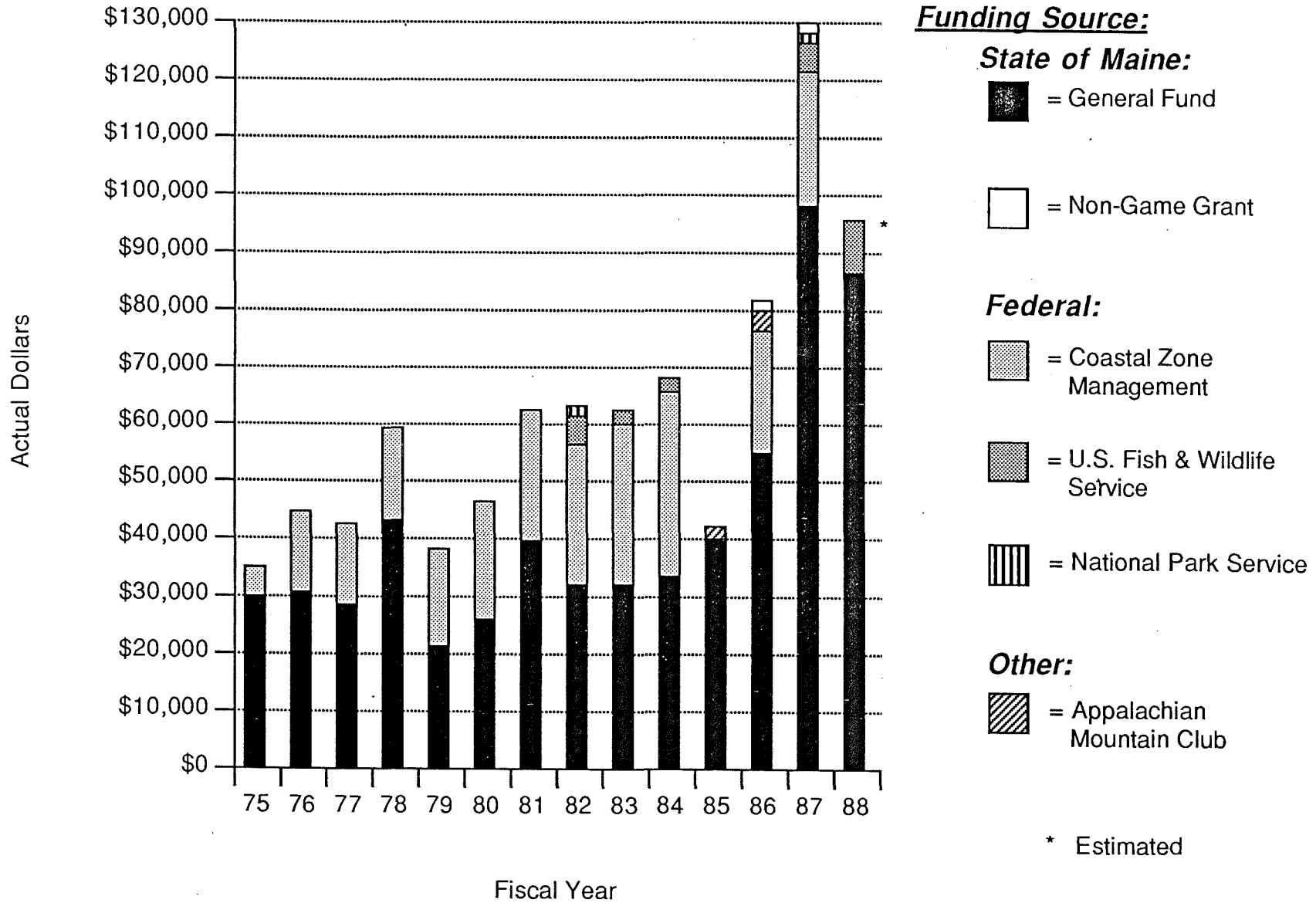
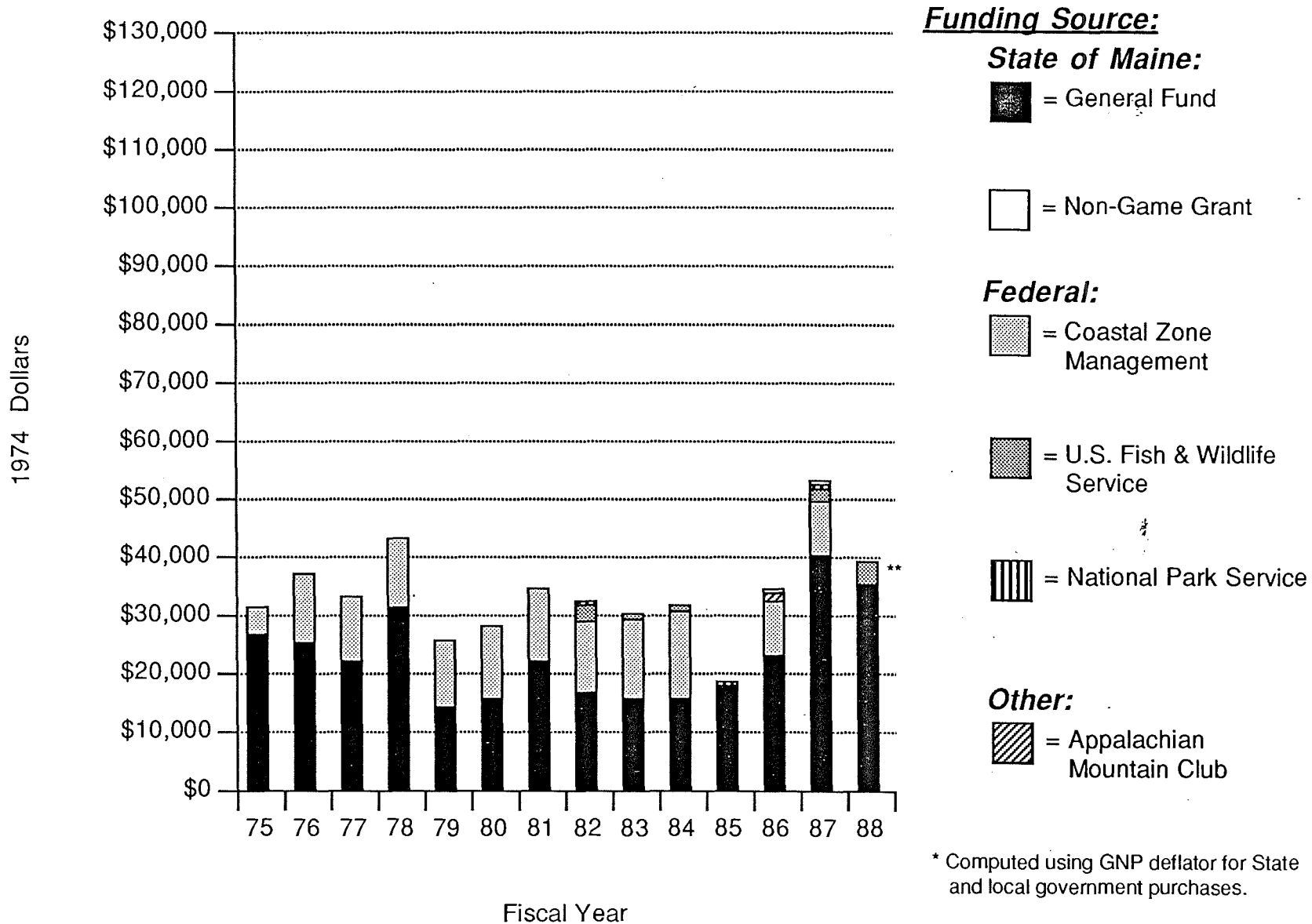


Figure 7. Critical Areas Program Expenditures in 1974 Dollars*



* Computed using GNP deflator for State and local government purchases.

** Computed using estimated expenditures and deflator.

In 1985, the State Planning Office made available a CZM federally funded Research Technician position (Range 15) to the Program. Also, in 1985, Representative Neil Rolde, at the request of the Critical Areas Advisory Board, asked the Legislature to appropriate \$40,000 in "all other" funds for inventories and educational publications. This funding, approved in June 1985, became available on July 1, 1986.

Due to the loss of federal Coastal Zone Management funding to the Program in 1987, Representative Rolde, again at the Board's request, requested \$63,887 from the Legislature for inventories and the Program's assistant position. The Legislature appropriated \$26,113 in "all other" for inventories and educational publications, and \$24,920 for the Research Technician position for FY 88. Thus, in 1985 and 1987, the Legislature provided State financial support that was an essential step towards maintaining the Program (Figure 6). In FY 88, both Critical Areas Program positions are State funded.

Rate of Accomplishments

The rate of identification of Critical Areas and their placement on the Register of Critical Areas reflects State and federal funding levels. During the Program's early years, when there was sustained State and Federal funding, progress was made in conducting statewide inventories (Figure 1; Table 1) and placing areas on the Register of Critical Areas. With the loss of federal funding in FY 85 two project positions were eliminated. Also, reductions in General Fund "all other" appropriations from 1983 to 1985, caused the rate of inventories and the placement of areas on the Register to decrease (Figures 1, 2).

As the Program has matured and its legislative mandate expanded without a corresponding increase in funding, the rate of placing areas on the Register of Critical Areas has slowed. Servicing the Register of Critical Areas and the Program's information on Critical Areas takes a considerable amount of personnel time. The increasing size of the Program's information data base on Critical Areas and endangered plant species has been matched with a corresponding increased demand for services and information by the public. The administrative working arrangements with State and federal agencies and non-profit conservation programs have broadened the Program's work tasks. Personnel time has necessarily been allocated to providing information, assisting with site-specific inventories, and environmental review, limiting personnel time for conducting statewide inventories and placing areas on the Register. The increased General Fund appropriations in FY 87 and FY 88 have resulted in a number of new inventories to identify and document Critical Areas. This increased funding has enabled the Program to increase the pace of identifying Critical Areas, and accounts for the 191 candidate areas (Table 2). The rate of placing areas on the Register should increase in FY 88 and FY 89 in response to the increased State funding in FY 88.

New Legislative Mandates

In 1983, the 111th Legislature passed a study order directing an inventory of Uncut Timber Stands and Unique Alpine Areas on State owned lands. No funds were appropriated for this study. The State Planning Office applied for and received grants from the Evelyn H. Murphy Fund of the Appalachian Mountain Club. The study was submitted to the Legislature in April 1986 (Appendix VI).

The 112th Legislature passed two amendments to the Critical Areas Act in 1986 (Appendix II):

1. The Official List of Endangered Plants
(Title 5 § 3315 M.R.S.A.)
2. List of Heritage Coastal Areas
(Title 5 § 3316 M.R.S.A.)

The Program is currently undertaking the first phase of compiling the Official List of Endangered Plants through a \$2,500 contract with the University of Maine. This funding was obtained from the reallocation of "all other" funds appropriated in 1986 to the Program for inventories. Also, the newly-hired botanist, Patricia DeHond, has been partially assigned to assist with this task. Thus, the effort to conduct other inventories and place areas on the Register has again necessarily been reduced. Additional continued financial support is necessary to carry out the mandate of the Endangered Plant Species amendment.

Implementing the Heritage Coastal Areas amendment is a very large undertaking that will require substantial funding to be successful. Currently, the Coastal Program of the State Planning Office has assigned a staff person funded by a one-year-only Federal CZM grant to develop the methods for designation, prepare a preliminary listing of potential Heritage Coastal Areas, and undertake a pilot project in southern Maine. However, this effort is inadequate to undertake and complete the mandated inventory of Heritage Coastal Areas for Maine's entire coastline. For the success of the effort, a firm funding commitment from the Legislature is necessary and should continue for at least two additional years beyond the start up phase.

Current Work Tasks

The Program's staff is currently engaged in a variety of work tasks for FY 88. Topics being documented by inventories include peatlands, endangered plants, lakes, coastal and inland bedrock sites and a pilot project on cobble beaches. A portion of the Program's site information is being added to The Nature Conservancy's computerized Heritage data base.

The Endangered Plant Technical Advisory Committee working with University of Maine botanists has prepared a draft listing of endangered and threatened plants. An Endangered Species Conference was held in October to provide public review of the listing. A formal public hearing will be held in 1988, and the Official List of Endangered Plants will be established in 1988.

In early 1988, the staff will recontact the landowners of Critical Areas on the Register to determine the current status of the special feature represented. Also, a newsletter will be prepared and distributed by the spring of 1988. Down East Books will publish an education book on Critical Areas and endangered species during the summer of 1988. Maine's Natural Heritage, by Dr. Dean Bennett of the University of Maine at Farmington, is a collaborative effort by the Critical Areas Program.

Future Work for the Critical Areas Program

In addition to ongoing work, major tasks remain for the Critical Areas Program. There are still a substantial number of important topics in Maine that remain to be inventoried (Appendix VII). Many important geological critical areas still remain to be documented. To date, only one scenic inventory (scenic lakes) has been undertaken by the Program, and no areas have been placed on the Register solely for their scenic value. This represents a clearly defined area where the legislative mandate has been unattainable.

It is difficult to assess the time period necessary to complete the required statewide inventories. The list of future inventories must periodically be revised and updated. During the Program's first decade, inventories resulting from readily available data were undertaken. Future inventories will be more difficult and costly to undertake and dependent on adequate staffing. It may take up to a decade to complete all the remaining inventories. However, a point will be reached when the Program's inventory functions will decrease.

The quickening pace of development in Maine argues for increasing the pace of inventorying and documenting Critical Areas. Economic development has resulted in a substantial increased use of the Program's information, and has placed a strain on the Program's personnel time allocation. A more complete information base on Critical Areas enables better decisions to be made for the future of Maine's very special natural resources.

The Program has lagged in promoting the voluntary conservation of Critical Areas because the small staff is often unable to provide technical assistance to cooperating landowners who want to voluntarily protect their Critical Areas. There is much work to be done in promoting our most inexpensive protection, the voluntary conservation of Critical Areas by private landowners. Promoting the voluntary conservation of the increasing numbers of Critical Areas through educational publications and assistance to landowners will require more time

of the Program's staff. As a result of the identification of Critical Areas that are worthy of protection, the State of Maine has an obligation to assist landowners with conservation and management advice. The Program has not had adequate staffing to recommend or implement contractual management agreements to promote Critical Areas conservation (Section 3314.3).

The Program has the authorization to recommend Critical Areas that are suitable for acquisition by non-profit organizations and public agencies. Over the years, a few recommendations have been made to The Nature Conservancy. With the recent passage of the referendum which authorized \$35,000,000 in bonding for state land acquisition, the Program and Board will be called upon to play a role in acquisition recommendations.

The Critical Areas Program's large statewide information on natural and Critical Areas requires constant servicing and maintenance. This data base is a very valuable pool of knowledge that is used by land use planners, developers and landowners. Maintaining an up-to-date information base and responding to requests for information will require a modest but long term financial commitment. During the past two years, there has been an increasing demand for Critical Areas information (Appendix VIII).

COMPARISON WITH OTHER PROGRAMS

Comparison with Natural Areas Programs in other states

Throughout the U.S. the effort to identify and protect natural areas has been a state initiative. The State of Maine has been at the forefront of the natural areas movement by legislatively establishing the Maine Critical Areas Program, one of the oldest natural areas programs in the country.

Currently there are state natural areas programs in 48 States. Most states also have "Non-Game Programs" within their Natural Resources Department or Fish & Wildlife Department. There is a wide diversity of administrative arrangements between Natural Areas Programs and Non-Game Programs among the states. Forty-seven states have adopted The Nature Conservancy's Natural Heritage Program. Therefore, Maine is one of three states that has not yet adopted The Nature Conservancy's Heritage Management System.

Many states of similar size to the State of Maine have Natural Areas Programs or Heritage Programs with a staff of four to five, and with budgets that range from \$250,000 to \$350,000. Natural Areas Programs and Heritage Program in eleven other states were contacted in order to compare Maine's programs (Appendix IX). Of the 12 states presented, Maine ranked 10th in the size of legislative appropriations.

Interrelationship with Other Programs

State Programs

The Critical Areas Program has developed a close working relationship with a number of State agencies and non-profit land conservation organizations, which illustrates the usefulness of the Critical Areas Program's inventories and information. The Bureau of Public Lands and the Critical Areas Program have conducted natural resources inventories on selected public lots to identify Critical Areas and environmentally sensitive sites. In addition, the Critical Areas Program staff participates in the Bureau's unit planning process. The Baxter State Park staff and the Critical Areas Program staff have conducted joint inventories to identify significant areas within the Park, and also to develop and print educational material for use by visitors to the Park. The Program coordinated the compilation and printing of a listing of plants in Baxter State Park.

The Critical Areas Program will be using the Land Use Regulatory Commission (LURC) data files on Maine lakes to ensure compatibility and ability to use analytic procedures developed by LURC. The Department of Transportation (DOT) environmental staff uses the Program's data base when reviewing DOT construction and resurfacing projects.

The Maine Endangered and Non-Game Wildlife Program of the Department of Inland Fisheries & Wildlife and the Critical Areas Program share a common linkage in special wildlife areas. The Programs' staff confer on wildlife issues of mutual concern. In 1985, the Department and the Critical Areas Program completed a statewide report on Landlocked Arctic Charr. In 1985 and 1986, they jointly sponsored an inventory of inland great blue heron nesting sites. Also, the Department of Inland Fisheries and Wildlife and Critical Areas Program have jointly undertaken vegetation inventories of a wildlife management area in southern Maine.

Through current and contemplated contracts with The Nature Conservancy, the Maine Endangered and Non-Game Wildlife Program and the Critical Areas Program are undertaking compatible automation of their data bases. The potential exists for an overall Maine natural areas data management system. The Legislature should allocate necessary funding to improve natural areas programs data management if such programs are expected to provide sufficient natural areas information to those needing it, in order to conserve such areas and make timely and appropriate management decisions.

The Critical Areas Program, the Endangered and Non-Game Wildlife Program and The Nature Conservancy will meet in the near future to discuss the preparation, distribution, and periodic updating of an index and map series to facilitate access to appropriate natural areas site information. The intent is to provide more attention to significant natural areas in State permitting and development review activities, and to provide municipal planning and development control activities with better data to consider impacts on significant natural areas within their communities. Community land trusts would also benefit from expanded data access.

Strong inter-relationships exist between Maine's natural areas programs. Review of the structure of and relationship between these programs is necessary to ensure optimal State natural areas conservation. A commitment to better defined and enhanced coordination between programs is essential to eliminate duplication of effort and to maximize the opportunities for mutual benefit.

Federal Programs

The Critical Areas Program interacts with a number of federal agencies. A strong working relationship has developed with the National Park Service (NPS) and the U.S. Fish and Wildlife Service. The State Planning Office has signed an agreement with the National Park Service to cooperate on the federal designation of National Natural Landmarks in Maine. The Program has evaluated potential National Natural Landmarks for federal designation. The National Park Service and the Critical Areas Program will continue to cooperate in jointly designating areas.

The Program has signed a Limited Cooperative Agreement with the U.S. Fish and Wildlife Service to undertake endangered plant conservation work in Maine. Federal funding has been made available to the Program to promote the conservation of federally designated endangered plants in Maine.

The Program has also been in contact with U.S. Forest Service, U.S. Navy, and U.S. Coast Guard concerning Critical Areas located in Maine.

Non-Profit Conservation Organizations

The Critical Areas Program interacts with a number of Maine conservation organizations. The Program's educational materials are used and distributed by Maine Audubon Society, National Audubon Society, West Quoddy Marine Research Station, the Oceanarium in Southwest Harbor, College of the Atlantic Natural History Museum, Hardwood Island Biological Station and others.

A booklet, The Landowner's Options, was developed in cooperation with the Maine Coast Heritage Trust and reprinted with the assistance of The Nature Conservancy. The Trust and the Program work closely on assisting land trusts and protecting areas by conservation easements. The Trust is particularly interested in the protection of scenic areas.

The Program enjoys a very close working relationship with The Nature Conservancy (TNC) because both share a common goal of protecting rare and endangered species. The Program has provided information to Maine Chapter of TNC for many years concerning rare features and Critical Areas. The personnel from both programs spend a considerable amount of time frequently conferring on natural areas conservation in Maine. TNC has accepted donations of property and has purchased a number of Critical Areas in Maine (Table 3).

For a number of years, the State Planning Office and The Nature Conservancy (TNC) have discussed instituting a Natural Heritage Program within Maine State Government. The Natural Heritage Program is a comprehensive data management system specifically designed to manage data on rare and endangered species and exemplary natural areas. The Natural Heritage Program system has been formally incorporated by forty-seven state governments across the United States to meet the need for efficient natural areas data management. The Natural Heritage Program currently operating within the Maine Chapter of The Nature Conservancy has a staff of two and one-half, which includes a data manager, a natural community ecologist, and a coordinator/ zoologist.

In the 1970's, the Critical Areas Program maintained and updated the Natural Areas Inventory of Maine which has served as the Program's computerized listing of sites. Since 1980, the Program has been negotiating with TNC to establish TNC's computerized Heritage data management system within State government. In 1986, the Land & Water Resources Council undertook a study of the data management needs of State government for natural areas. The report by Joseph Chaisson recommended that the Critical Areas Program adopt TNC's data management system (Reference 5). The State Planning Office is currently contracting with The Nature Conservancy to computerize a portion of the Critical Areas Program's information into the Heritage data base. This will meet a short-term need, but will not meet all of Maine's long-term natural areas data management needs.

The State Planning Office and The Nature Conservancy are philosophically in agreement concerning establishment of this data management system within the Office. The State Planning Office and The Nature Conservancy are currently exploring the costs and benefits of transferring the mature Natural Heritage Program into State government. Establishing the Natural Heritage Program in the State Planning Office will allow Critical Areas staff to allocate more time to completing statewide inventories and placing areas on the Register. The Natural Heritage Program in combination with the Critical Areas Program would be able to serve a broader audience in meeting additional information needs of State Planning Office, other state agencies, and local governments. Greater flexibility in conserving natural areas may be achieved.

Because of similar functions and interests of the Endangered and Non-Game Wildlife Program, The Nature Conservancy's Heritage Program and Critical Areas Program, the Program plans to prepare a separate study considering the linkage of these three programs to improve administrative and inventory efficiency and enhance the capabilities of each. This study would go beyond the scope of the recent Chaisson report, Recommendations for a Maine Natural Areas Data Management System, presented in January 1987 to the Land & Water Resources Council (Reference 5).

ANALYSIS

Issue: Future Work Tasks

The Critical Areas Program still has a significant amount of work to undertake in order to accomplish its legislative mandate. A number of significant major topics remain to be inventoried from a statewide perspective (Appendix VII). Also, there is a backlog of 50 nominated and 191 candidate Critical Areas that need to be evaluated for inclusion on the Register of Critical Areas (Table 2). The recently passed Endangered Plant Act and the Heritage Coastal Areas Act need to be implemented.

A summary of future work tasks for the Critical Areas Program includes:

- conducting statewide inventories of rare and unusual features
- contacting Critical Areas landowners
- placing areas on the Register of Critical Areas
- maintaining up-to-date information on Critical Areas and features
- answering requests for information
- providing technical assistance to landowners wishing to carry out voluntary conservation measures
- compiling and maintaining the Official List of Endangered Plant Species
- assisting in documentation and compilation of the listing of Heritage Coastal Areas.
- assisting the Lands for Maine's Future Board with land acquisition criteria and relevant data for decision-making

Findings:

The Board finds that the State must have a properly funded and staffed Critical Areas Program in order to provide the proper protection for the State's special natural areas. With an increasing population in Maine and increasing economic development, State government should increase its financial support to assure Maine's citizens that the Program will meet the needs of the 1990's.

Issue: Staffing

The Program's current staff of two is unable to cope with the Program's existing heavy work load, increased demands for services, and new legislative mandates. In recent years, the current level of staffing has been inadequate to undertake statewide inventories and place areas on the Register of Critical Areas in a timely fashion. During the past three years, the

Program has devoted much of its staff time to responding to requests for information, and also recontacting owners of existing Critical Areas. During 1987, the Program concentrated much of its efforts on compiling the Official List of Endangered Plants. As a consequence, little forward progress has been made in conducting new inventories and adding areas to the Register (Figures 1, 2).

The Program's information and data base are very valuable state resources that are used by a wide diversity of citizens. In recent years the Program's personnel have devoted a considerable amount of time to responding to requests for information. As a result, the staff has had less time to contact landowners, to conduct or coordinate inventories, and to work with landowners who seek voluntary means of protection for their land.

As the Register of Critical Areas grows, the Program must have adequate human resources to meet the demands for services required by landowners, businesses, and local governments. As the size of the Critical Areas Program's data base increases, and the number of areas on the Register of Critical Areas grows, there is a need for a corresponding increase in staff size to handle the work load generated by increasing demands on the Program.

Promoting the voluntary conservation of the increasing numbers of Critical Areas through educational publications and technical assistance will require more of the Program's staff time. The State Planning Office has the authorization to enter into conservation agreements with landowners; however, staffing limitations have prevented the use of this protective tool. Professional personnel with a knowledge of land conservation techniques are needed to provide technical assistance to towns and private landowners. As additional areas are identified and more areas are placed on the Register of Critical Areas, it is anticipated that the Program will have to devote more assistance to landowners and communities wishing to voluntarily protect Critical Areas.

Findings:

In reviewing the Critical Areas Program of the State Planning Office, the Board has arrived at the following findings with respect to personnel:

1. Endangered Plant List. The recently hired botanist, Patricia DeHond, will be able to carry out and administer the State's Official List of Endangered Plants. This state-funded position will give continuity to the State's effort to identify and protect endangered plants. In 1988, the State Planning Office expects to establish the Official List of Endangered Plants. The work of compiling and maintaining the Official List

of Endangered and Threatened. Plants will also lead to the generation of more endangered plant sites for designation as Critical Areas. Attention will also have to be given to monitoring the endangered plant areas. However, staff time directed to endangered plant species work will decrease staff time being devoted to placing geological and zoological areas on the Register. As a result, the Program's botanist will be unable to devote substantial time to important plant communities such as wetlands, old-growth forests, and peatlands.

2. Heritage Coastal Areas List. The Coastal Program of the State Planning Office received a one-year grant from the Federal Office of Coastal Zone Management to undertake a one-year (August 1987 to July 31, 1988) pilot project to identify Heritage Coastal Areas. Richard Kelly of the Coastal Program is currently identifying and documenting Heritage Coastal Areas in York County. This effort will document coastal areas with concentrations of scenic, natural and historic values that are worthy of special conservation attention. The designation of Heritage Coastal Areas will enable all levels of government and non-profit organizations to focus their attention on coastal areas with a diversity of values. Approximately ten Heritage Coastal Areas in York County may be designated by July 1988 as a result of this pilot project. This effort will provide the needed assistance and guidance to local coastal governments. Because federal funding is unavailable to continue this coastal planning effort beyond July 1988, the Board finds that the Legislature should provide additional State funds if this function is to continue.

3. Information Specialist. The Program's large information data base is a very valuable State resource. The State Planning Office receives a substantial number of requests for information on Critical Areas and endangered species from citizens, landowners, businesses and consultants (Appendix III). The Program requires a full time staff person to oversee the management of the Critical Areas Program information and to respond to requests for information. The State Planning Office is currently contracting with The Nature Conservancy's (TNC) Heritage Program to computerize a portion of the Critical Areas data base into the Heritage Program's dBase III PLUS format. Maintaining a complete computerized data base and responding to requests for information will require an additional staff person. Consequently, the Board finds that a full time staff person needs to be added to the State Planning Office for data management for the Critical Areas Program.

4. Plant Ecologist. The Program does not currently employ a person with the necessary plant ecology background to work on natural plant communities such as wetlands, peatlands, old-growth forests, and other unusual or special plant communities. Many plant communities remain to be inventoried (Appendix VII).

This is an important subject for the Program because natural plant communities are very significant components of Maine's landscape. Many of Maine's most unusual Critical Areas are plant communities. With the prospect of a number of biomass plants for the generation of electricity being constructed in Maine during the next decade, it is essential that the most significant peatlands and old-growth forest areas be identified and documented. As a response, the Board finds that a full time plant ecologist needs to be added to the State Planning Office staff for the Critical Areas Program.

5. Secretarial Position. The Program does not have secretarial staff assigned to undertake Critical Areas tasks, but relies upon secretarial staff of the Natural Resources Policy Division funded by federal Coastal Zone Management (CZM) grants. The State Planning Office is unable to provide adequate secretarial support for the Program because of diminished support from the federal CZM grants, and increased staffing within the Natural Resources Policy Division. To cope with increased responsibilities, the Board finds that a one-half time secretarial position should be established within the State Planning Office for the Critical Areas Program.

6. 1988 Natural Resource Work Tasks for the Natural Resources Division. The recently passed \$35,000,000 bond issue for public land acquisition will place additional demands on the Critical Areas Program staff to assist with the selection and documentation of potential acquisition lands. To date, the staff has already devoted a portion of their time to this issue. The Program has the legislative mandate to recommend areas for acquisition. The Program must have sufficient staffing to respond effectively to this new State initiative. The State Planning Office is hopeful that the Legislature will provide a new staff position to the State Planning Office to assist with the public land issue. The Board finds that this position is essential to efficiently administer the public land acquisition.

The Natural Resources Policy Division of the State Planning Office will be preparing a "State of the Environment Report" in 1988. Increased Critical Areas staffing and an upgraded data management system with information on endangered species and Critical Areas will be of great assistance to the State Planning Office's overall work efforts. The Board finds that if the State Planning Office expects to undertake new natural resource initiatives relating to Critical Areas, increased Critical Areas personnel are essential.

Issue: Funding

The current budget of \$85,000 in State funding and approximately \$18,000 in federal grants is inadequate to address current demands placed on the Program and also make progress in undertaking new activities. The loss of federal funds from the Program's budget in FY 85 and FY 88 adversely impacted the Program. During FY 85 inventories as mandated by the legislature for Critical Areas came to a standstill (Figure 1). Placing areas on the Register of Critical Areas, the State's official list, has been greatly slowed as a result of the 1983-85 funding reductions combined with new mandates and increased demands for information (Figure 2).

During the Program's history, the Legislature has provided funding to keep the Program staffed. The Legislature provided key funding in 1985 and 1987 to maintain the existing program. However, the level of funding has not been able to sustain the Program's new mandates and demands placed on the State Planning Office (Figures 6, 7).

The Program's current annual appropriation in the "all other" category is inadequate to undertake inventories, prepare educational materials, and print reports. In particular, the number of statewide inventories that have been undertaken in recent years have been greatly reduced because of the small amount of "all other" funds allocated to the Program.

Findings:

In reviewing the Program's budget the Board has made the following findings:

1. Funding for Inventories - The Program has efficiently used "all other" funds for statewide inventories of Critical Area topics. Recognized authorities and researchers, primarily from the University system, have been able to effectively undertake statewide studies to identify and document Critical Areas. However, small allocations of "all other" funds have slowed the identification process and eventual listing of Critical Areas on the Register. The Board finds that "all other" funds should be increased and this appropriation maintained for the Program to undertake new inventories listed in Appendix VII.
2. Scenic and geological features - Geological and scenic topics are two of the major features the Program has been mandated to inventory. Some progress has been made identifying geological and hydrological features. However, no progress has been made on scenic topics.

Priority should be given to scenic areas in Maine because these are the components of the landscape which contribute to the State's "quality of life". In addition, Maine's tourist and recreation industry depends upon Maine's scenery as a major attraction. Protection of Maine's scenic areas is in the best interest of the State economy. The Board finds that the Program should contract for services to identify on a statewide basis, scenic and geological Critical Areas.

3. Educational Effort and Planning Reports - The Program has developed and compiled a wealth of information on Maine's special natural heritage which has been in great demand by landowners, researchers, educators, and land use consultants. Making the Program's information available to the public is one of the most effective means to promote the long-term protection of Critical Areas.

The Board finds that the Program has insufficient funds to meet the demand for educational materials on Critical Areas and their conservation.

4. Operating Funds - The Critical Areas Program expenses for telephone, travel, publication subscriptions, and Board expenses have been paid for from the State Planning Office's overall budget. This arrangement has generally provided adequate financial support to the Program. However, with increased demands on the State Planning Office budget, and increased demands for Critical Areas services, the Program may not continue to have adequate support. Thus, the Board finds that the "all other" appropriations should be increased for direct office expenses.

RECOMMENDATIONS

The following recommendations represent the most optimal outcomes for the future of Maine Critical Areas Program.

Recommendation I

Existing general fund appropriations for the Program's director and botanist should be maintained and included in the State Planning Office budget.

Recommendation II

The Legislature should appropriate sufficient funding so that the Critical Areas Program can effectively accomplish its legislative mandate and meet future needs.

The Board finds that the Critical Areas Program is inadequately funded and staffed. The Program is unable to make steady progress in conducting inventories, placing areas on the Register of Critical Areas and promoting the voluntary conservation of Critical Areas due to budget constraints.

The current staff of two professionals is not able to keep up with the volume of work expected of the Program. Current staff

are not able to undertake new inventories, meet with landowners regarding the registration and conservation of Critical Areas, and properly address the large volume of requests for information that the Program receives.

Actions Required:

- o The Board recommends that a Planner II position (range 22) be established for the information specialist for the Critical Areas Program with a funding cost of \$23,236.
- o The Board recommends that a Planner II position (range 22) be established for the plant ecologist for the Critical Areas Program with a funding cost of \$23,236.
- o The Board recommends that a half-time Clerk Typist III (range 12) position be established for the Critical Areas Program with a funding cost of \$8,400.

Draft legislation is provided in Appendix X.

Recommendation III

The all other funding to the Critical Areas Program should be increased to \$75,000 per year to undertake Critical Area inventories.

The Board finds that the funding available to the Program for statewide Critical Area inventories is inadequate. Currently, the Program has available an appropriation of \$26,113 for FY 88 and \$24,920 for FY 89 in the "all other" account. The amounts are insufficient to conduct inventories of resources critical to the future of Maine's citizens.

There are still significant numbers of critical area topics that have not yet been inventoried in Maine (Appendix VII). Priority should be placed on completing inventories of old-growth forests, wetlands and peatlands in a timely fashion. Additionally, priority should be given to initiating new inventories for cobble beaches, kettlehole formations, wetlands, and scenic areas.

The Program will rely primarily on inventories conducted by the Endangered and Non-Game Wildlife Program for wildlife and zoological topics. It is anticipated that the Critical Areas Program may undertake joint inventories of selected wildlife topics with the Endangered and Non-Game Wildlife Program.

The Board feels that it is essential for the Program to have adequate funding for inventories so that the Program can continue to document significant natural areas that are worthy of official recognition as critical areas. Critical Areas inventories are one of the Program's cornerstones, and are the foundations of the Program's success. Given the current level of land development

in Maine, it is essential that the Program have a vigorous and timely inventory effort. If these new Critical Areas are not identified by the Program in the near future, they may be lost forever.

Actions Required:

- o The Board recommends that \$75,000 be appropriated annually for contractual inventories. An eight year period will be necessary to undertake and complete the most essential inventories.
- o The Board has asked the Program to place a high priority to identify geological and scenic areas by contracting out for the inventory services. Additional high priority activities for the Program should be to complete inventories for wetlands, peatlands, and old-growth forests.
- o The Board recommends that the Program allocate inventories on the following basis:

Fiscal Year 1989

Geological -	cobble beaches	\$15,000
	inland bedrock	5,750
	kettlehole formations	5,000

Scenic -	coastal highways	10,000
Plant communities -	peatlands	9,000
	wetlands	8,750
	old-growth forests	4,000
Endangered and Rare Plants -		5,000
Zoological - (to be determined with IF&W)		2,500
Lakes		7,500
State-owned lands		<u>2,500</u>
		\$75,000

Fiscal Year 1990

Geological -	Inland Bedrock Areas
	Kettlehole topography
Scenic -	coastal
Plant communities -	peatlands
	wetlands
	old-growth forests
	northern hardwoods
Endangered and Rare Plants	
Zoological (to be determined with IF&W)	
State-owned lands	

Fiscal Year 1991

Geological -	Glacial features
	Drumlins
	Eskers, Deltas
	Aeolian deposits
Scenic -	coastal
Plant communities -	peatlands
	wetlands
	riverside communities
Endangered and Rare Plants	
Zoological (to be determined with IF&W)	
State-owned lands	
Rivers	

Fiscal Year 1992

Geological -	Minerals & update on fossils
Scenic -	major inland highways
Plant communities -	wetlands
	talus slope communities
Endangered and rare plants	
Zoological (to be determined with IF&W)	
State-owned lands	
Rivers	

Fiscal Year 1993

Geological - tills and soils
 reversing deltas
Scenic - rivers
Plant communities - wetlands
 sand plain grasslands
Endangered and rare plants
Zoological (to be determined with IF&W)
State-owned lands

Fiscal Year 1994

Geological - reversing waterfalls
 additional inland
 bedrock sites
Scenic - review of scenic lakes
Plant Communities - wetlands
 coastal headlands
Endangered and rare plants
Zoological (to be determined with IF&W)
State-owned lands

Fiscal Year 1995

Geological - alpine features
Scenic - mountain areas

Plant Communities - wetlands
flood plain forests
Endangered and Rare Plants
Zoological (to be determined with IF&W)
State-owned lands

Fiscal Year 1996

Geological - coastal
geomorphological
Scenic - statewide assessment
Plant Communities - wetlands
Endangered and Rare Plants
Zoological (to be determined with IF&W)
State-owned lands

Draft legislation is provided in Appendix X.

Recommendation IV

An annual appropriation of \$15,000 should be made for the production and distribution of educational materials, and \$5,000 should be appropriated annually for operating expenses incurred by the Program and Board.

Promoting the conservation of Critical Areas through educational means is the primary basis for the Program's

conservation efforts. The Program has produced a series of educational publications that provide vital information to landowners, citizens and educators. The Program's planning reports, educational brochures, and The Landowner's Options are examples of these educational efforts. As the size of the Register of Critical Areas grows, the Program will need to increase its funding and conservation effort.

Actions Required:

- o The Board recommends that \$15,000 be appropriated annually for FY 89, FY 90, FY 91, FY 92 to develop and distribute educational materials on Critical Area topics for Maine's citizens and school children:

- developing and printing of educational materials;
- endangered plant educational materials;
- printing and distribution of Critical Areas reports;
- and
- educational slide show.

After the four-year period of developing these new educational materials, the Program should determine an appropriate funding level to keep educational publications available to the public.

- o The Board recommends that \$5,000 be appropriated annually to the Program to cover operating expenses incurred by the Program and Board.

Draft legislation is provided in Appendix X.

Recommendation V

After a five year period, the State Planning Office should assess the effort devoted to the conservation of areas on the Register of Critical Areas.

During the next five years the number of significant Critical Areas on the Register of Critical Areas will increase. In 1993, current staffing levels may be inadequate to provide proper services to assist with the conservation of designated Critical Areas. At that time, the State Planning Office should assess the situation and determine the proper level of State effort needed to assist with Critical Areas conservation.

Recommendation VI

The Legislature should provide State funding for the Heritage Coastal staffing effort.

In 1986, the 112th Legislature passed the Heritage Coastal Act to enable the State Planning Office to identify and document exceptional coastal areas where clusters of Critical Areas occur. Because no state funding was provided to the State Planning Office, the State Planning Office moved to assign a federally-funded coastal planner position to initiate this new activity. This federal support will not continue to be available for this effort.

REFERENCES

1. Uncut Forests and Unique Alpine Areas. 1986. A Study Order Report submitted to the 112th Legislature. State Planning Office. 21 pages.
2. The Landowner's Options. 1985. Third Edition by Janet E. Milne. State Planning Office. 37 pages.
3. The Maine Critical Areas Program - A Progress Report. 1986. Maine State Planning Office. 15 pages.
4. The 1985 Critical Areas Biennial Status Report. 1986. 21 pages.
5. Recommendations for a Maine Natural Areas Data Management System by Joseph M. Chaisson. 1987. State Planning Office. 22 pages.

JUN 29'87

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BY GOVERNOR

P & S LAW

APPENDIX I

STATE OF MAINE

IN THE YEAR OF OUR LORD
NINETEEN HUNDRED AND EIGHTY-SEVEN

H.P. 1073 - L.D. 1456

AN ACT to Appropriate Funds for the Critical
Areas Program.

Be it enacted by the People of the State of Maine as follows:

Study order. The Maine Critical Areas Advisory Board shall conduct a study of the Critical Areas Program's progress, current work priorities and future work tasks necessary to accomplish the intent of the Act for a State Register of Critical Areas, Title 5, chapter 312. The board shall evaluate whether current staffing and funding levels are adequate to accomplish the program's mandate and shall report back to the Legislature with its findings and recommendations by January 1, 1988.

APPENDIX II

August 25, 1987.

CRITICAL AREAS ACT

AS AMENDED

TITLE 5

CHAPTER 312

STATE REGISTER OF CRITICAL AREAS

Sec.

3310	Title
3311	Findings: declaration of purpose
3312	Definitions (repealed)
3313	Maine Critical Areas Advisory Board
3314	Register of Critical Areas
3315	Official List of Endangered Plants
3316	List of Heritage Coastal Areas

Chapter 312, State Register of Critical Areas, was enacted by Public Law, of 1973, c. 778. S 1, and amended by Public Laws of 1979, c. 672 SS A, 7-10; Public Laws of 1983, Chapter 812. S 28; and Public Law of 1986, Chapter 595 and 794.

§ 3310 Title

This chapter shall be known and may be cited as the "Act for a State Register of Critical Areas."

§ 3311 Findings: Declaration of purpose

The Legislature finds that the State has an overriding interest in the optimum development and preservation of sites or areas of unusual natural, scenic or scientific significance. In order to facilitate their preservation for present and future generations, the Legislature directs that a statewide inventory and an official, authoritative listing of the natural, scenic and scientific areas of overriding state interest be made by the State Planning Office as part of its overall responsibility for the preparation of statewide goals and policies and coordination of the planning and conservation efforts of State and local agencies. The official listing shall be known as the "Register of Critical Areas" and may be referred to as the "register".

The Legislature also finds that the best ways to accomplish the objectives cited in this section are through continued implementation of the State's land use laws which guide and control development in all areas of the State, including those areas listed in the statewide inventory and through voluntary conservation efforts by landowners. The Legislature authorizes the State Planning Office to work with interested landowners on voluntary conservation of these areas.

The Legislature further finds that species of native plants are important for human enjoyment; for scientific purposes and as components of their ecosystems for the benefit of the people of this State. Native species of plants within this State and the nation that are reduced in number shall be identified as endangered or threatened so as to encourage their protection and to maintain and enhance their numbers.

§ 3311 - A. Definitions

As used in the section, unless the context otherwise indicates, the following terms have the following meanings.

1. Critical areas. "Critical areas" means areas containing plant and animal life or geological features worthy of preservation in their natural condition or other natural features of significant scenic, scientific or historical value.

2. Endangered plant species. "Endangered plant species" means any species of native plant that is in danger of extinction throughout all or a significant portion of its range within the State or any species determined to be an "endangered species" pursuant to the United States Endangered Species Act.

3. Endangered Species Act. "Endangered Species Act" means the United States Endangered Species Act of 1973, Public Law 93-205, as amended.

4. Threatened plant species. "Threatened plant species" means any species of native plant likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range within the State or any species of plant determined to be a "threatened species" pursuant to the United States Endangered Species Act.

Section 3312 Definitions (repealed)

§ 3313 Maine Critical Areas Advisory Board

There is hereby created a Maine Critical Areas Advisory Board to advise and assist the State Planning Office in the establishment and maintenance of the Register of Critical Areas. The Maine Critical Areas Advisory Board, hereinafter in this chapter referred to as the "board", shall be appointed by the Governor with the approval of the Council and shall be convened by the State Planning Office and shall consist of 11 members, one of whom shall be a permanent member.

1. Permanent member. The one permanent member of the board shall be the appointed designee or the director of the State Planning Office.
2. Additional members. There shall be 10 additional members of the board who shall serve for terms of 3 years respectively except that initially, 3 members shall be appointed whose terms shall expire at the end of one year, 3 members whose terms shall expire in 2 years, and 4 members whose initial terms will expire at the end of 3 years.
3. Officers. The board shall annually select from its membership a chairman and a secretary, and said board shall meet not less than twice a year at the call of the chairman or a majority of the members. The State Planning Office shall furnish clerical, technical and other services required by the board in the performance of its official duties.
4. Quorum: records. A quorum of the board for the transaction of business shall be 7 members. The secretary of the board shall keep a record of all proceedings of the board, which record shall be a public record.
5. Rules and regulations. The board may adopt and promulgate rules and regulations governing the conduct of its business.
6. Expenses. Members of the board shall receive no compensation, but shall be reimbursed for their actual and necessary expenses incurred in the performance of their official duties.

§ 3314 Register of Critical Areas

1. Register of Critical Areas. The State Planning Office, with the advice and approval of the board, shall establish a Register of Critical Areas, which shall contain an inventory of sites and areas of significant natural, scenic or scientific

value duly classified as "critical areas" as defined in section 3312. In determining the classification of an area or site as a critical area, the State Planning Office shall consider, interalia:

- A. The unique or exemplary natural qualities of the area or site:
- B. The intrinsic fragility of the area or site to alteration or destruction:
- C. The present or future threat of alteration or destruction:
- D. The economic implications of inclusion of a critical area in the register.

2. Landowner consultation. No area or site classified as a critical area shall be included in the register without notification of the landowner at least 60 days prior to such classification. Each critical area listed in the register shall include:

- A. A general description of the area or site:
- B. A list of its unique or exemplary qualities and reasons for inclusion in the register:
- C. Its size and location:
- D. The name or names of the property owner, contingent upon the consent of the owner.

3. Recommendations. The State Planning Office shall recommend to appropriate state agencies which possess the authority to acquire property rights, through devise, gift, purchase, or otherwise, and which also possess the authority to contract with private owners, the acquisition of property rights or the establishment of management agreements which will insure the protection of critical areas on the register whose natural qualities are threatened with adverse alteration or destruction. The State Planning Office may also recommend the acquisition of property rights or consummation of contractual management agreements regarding any critical area listed in the register to any state agency, political subdivision of the State or private citizens who have demonstrated interest in the protection of critical areas.

4. Repealed.

5. Removal of listed areas. The State Planning Office, with the advice and approval of the Maine Critical Areas Advisory Board, may remove any critical area listed in the register, when it shall determine that such protection as afforded under inclusion in the register is no longer necessary or appropriate.

§ 3315 Endangered plants

1. Official list of endangered plants. The Director of the State Planning Office, with the advice of the Critical Areas Advisory Board, shall establish and maintain the official list of native endangered and threatened plants of the State. The purpose and intent of the list is informational only.

2. Criteria for listing. The State Planning Office may establish procedures to substantiate the identification of endangered and threatened native plant species. In determining the list, the State Planning Office may utilize the rare plant data base of the Critical Areas Program, as well as the knowledge of botanists in the State. In addition, the State Planning Office shall consult with federal agencies, interested state agencies, other states or provinces having a common interest and other interested persons and organizations. When establishing the list, the State Planning Office shall determine guidelines for each category by considering such aspects of plant biology as:

- A. Endemics: Plant species or subspecies that may be geographically restricted to the State;
- B. Scarcity: A plant species or subspecies may be numerically scarce throughout their distribution in North America and occur in only a few locations in the State;
- C. Special habitat: A plant species or subspecies may require special habitat which is scarce in the State or under heavy development pressure, such as, but not limited to, limestone outcrops, alpine areas, calcareous fens and sand plains;
- D. Limit of their range: A plant species or subspecies may be at the edge of its distribution or beyond its normal range in the State;
- E. Declining population: A plant species may be threatened or seriously declining due to habitat modification, collection or over utilization for recreational, scientific or educational purposes; and

- F. Vulnerability: A plant species may be vulnerable to extinction in the State because of destruction to its habitat.

3. Public hearing. The State Planning Office shall conduct at least one public hearing to allow for public comment prior to establishing the list. The State Planning Office may hold other public hearings with regard to modifications.

4. Biennial review. The State Planning Office shall review the list biennially and update it based upon new botanical inventory data, scientific studies or other documentation.

§ 3316 List of Heritage Coastal Areas

The State Planning Office shall develop and maintain the official list of Heritage Coastal Areas.

1. Definition. As used in this section, unless the context indicates otherwise, the following terms have the following meanings.

- A. "Heritage Coastal Areas" means areas containing an assemblage of geological, botanical, zoological, historical or scenic features of exceptional state or national significance.

2. Guidelines for identifying Heritage Coastal Areas. The State Planning Office, in consultation with the Maine Historic Preservation Commission, shall review existing reports and documents on coastal natural, historical and scenic areas in order to document Heritage Coastal Areas. The State Planning Office shall also undertake the necessary studies and inventories to document the scenic and natural values of candidate areas.

When evaluating candidate Heritage Coastal Areas, the following guidelines shall be considered:

- A. Areas eligible for or listed on the Register of Critical Areas; and
- B. Areas eligible for or listed on the National Register of Historic Places.

Nomination forms for each Heritage Coastal Area shall contain a description of the area and its significance, its size and location and the names of the landowners of the features within the area.

3. Municipal and landowner consultation. No area may be included on the list of Heritage Coastal Areas until the State Planning Office notifies the landowner of the features and officials of the municipality where the area is located at least 60 days prior to designation.

4. Designation of Heritage Coastal Areas. The Director of the State Planning Office, with the advice and approval of the Critical Areas Advisory Board, shall designate Heritage Coastal Areas subject to review by the joint standing committee of the Legislature having jurisdiction over energy and natural resources.

The designation of Heritage Coastal Areas officially identifies and documents assemblages of exceptional natural, historical or scenic areas on the coast that merit special attention for conservation.

5. Protection of features within Heritage Coastal Areas. The features identified within Heritage Coastal Areas shall be protected on a voluntary basis. Government agencies at all levels shall consider the importance of protecting the character of Heritage Coastal Areas in land use control and other actions which they take.

APPENDIX III

CRITICAL AREAS PROGRAM LIST OF PUBLICATIONS

BOTANICAL PLANNING REPORTS

(reports are listed in order in which they were published)

<u>Number</u>	<u>Title</u>
2	Luminous Moss, <u>Schistostega pennata</u> , in Maine
3	Great Rhododendron, <u>Rhododendron maximum</u> L., in Maine
7	Mountain-laurel, <u>Kalmia latifolia</u> L., in Maine
8	Sassafras Trees in Maine, <u>Sassifras albidum</u> Nutt.
9	Flowering Dogwood, <u>Cornus florida</u> L., in Maine
10	Inkberry, <u>Ilex glabra</u> (L.) Gray, in Maine
12	Slender Blue Flag, <u>Iris prismatica</u> Pursh., in Maine
13	Furbish's Lousewort, <u>Pedicularis Furbishiae</u> S. Wats., in Maine (revised 1983)
14	Chestnut Oak, <u>Quercus prinus</u> L., in Maine
16	Ginseng, <u>Panax quinquefolius</u> L., in Maine
17	Long's Bitter Cress, <u>Cardamine longii</u> Fern., in Maine
19	Nodding Pogonia, <u>Triphora trianthophora</u> (Sw) Rydb., in Maine
20	Canada Buffalo-berry, <u>Shepherdia canadensis</u> (L) Nutt., in Maine
21	Spotted Wintergreen, <u>Chimaphila maculata</u> (L.) Pursh., in Maine
22	Slender Cliff-Brake, <u>Cryptogramma stelleri</u> (Gmel.) Prantl., in Maine
23	Spicebush, <u>Lindera benzoin</u> (L.) Blume, in Maine
24	Small Whorled Pogonia, <u>Isotria medeoloides</u> (Pursh.) Raf., in Maine
25	Ram's Head Lady-Slipper, <u>Cypripedium arietinum</u> R. Br., in Maine
32	New Jersey Tea, <u>Ceanothus americana</u> L., in Maine
33	Clammy Azalea, <u>Rhododendron viscosum</u> (L.) Torr., in Maine
34	The Prairie White Fringed Orchid, <u>Habenaria leucophaea</u> Nutt., in Maine
36	Alpine Tundra Vegetation on Maine Mountains
38	Atlantic White Cedar, <u>Chamaecyparis thyoides</u> (L.) BSP, in Maine
39	Tupelo, <u>Nyssa sylvatica</u> Marsh., in Maine
42	Red Chenille Alga, <u>Dasya baillouviana</u> (Gmel.) Mont., in Maine
47	Field Oxytrope, <u>Oxytropis johannensis</u> Fern., in Maine
48	Cut-leaved Anemone, <u>Anemone multifida</u> Poir., in Maine
49	Northern Painted-cup, <u>Castilleja septentrionalis</u> Lindl., in Maine
52	Small Round-leaved Orchis, <u>Orchis rotundifolia</u> Banks ex Pursh, in Maine
58	Auricled Twayblade, <u>Listera auriculata</u> Wiegand, in Maine
59	Scarlet Oak, <u>Quercus coccinea</u> Muenchh, in Maine
61	Old-Growth White Pine (<u>Pinus strobus</u> L.) in Maine

- 65 Old-Growth White Oak, Quercus alba L., in Maine
- 66 Old-Growth Shagbark Hickory, Carya ovata (Mill.)
K. Koch, in Maine
- 69 Botanical and Ecological Aspects of Coastal Raised
Peatlands in Maine
- 70 Freshwater Wetlands in Maine
- 73 Maine Peatlands, Their Abundance, Ecology and
Relevance to the Critical Areas Program
- 76 Arethusa (Arethusa bulbosa L.), A Rare Orchid in Maine
- 77 Jack Pine (Pinus banksiana Lamb.) in Maine and its
Relevance to the Critical Areas Program
- 78 Seven Unusual Subarctic Plants of the Maine Coast
- 79 Natural Old-Growth Forest Stands in Maine
- 81 The Ecology and Distribution of Ribbed Fens in Maine

ZOOLOGICAL PLANNING REPORTS

(reports are listed in order in which they were published)

- 1 Common Terns (Sterna hirundo), Arctic Terns (Sterna
paradisaea), and Roseate Terns (Sterna dougalli) in
Maine
- 4 Natural Occurrence of the American Oyster, Crassostrea
virginica, in Maine
- 5 Alcid Nesting Habitat on the Maine Coast - Razorbill
(Alca torda), Common Murre (Uria aalge), Black
Guillemot (Cepphus grylle), Common Puffin (Fratercula
arctica)
- 6 The Nesting Habitat of the Leach's Storm Petrel in
Maine
- 11 Least Tern, Sterna albifrons, Nesting Habitat in Maine
- 15 Piping Plover, Charadrius melodus, Nesting Habitat in
Maine
- 18 Black Tern, Chlidonias niger, Nesting Habitat in Maine
- 26 Wading Birds in Maine: Great Blue Heron (Ardea
herodias), Black-crowned Night-heron (Nycticorax
nycticorax), Little Blue Heron (Florida caerulea),
Snowy Egret (Egretta thula), and Glossy Ibis (Plegadis
falcinellus)
- 27 The American Eider, Somateria mollissima dresseri, in
Maine
- 28 Significant Breeding Sites for the Horseshoe Crab,
Limulus polyphemus, in Maine
- 29 The Gaper Clam, Mya truncata, in Maine
- 30 The Dwarf Tellin, Tellina agilis, in Maine
- 35 Katahdin Arctic Butterfly, Oeneis polixenes katahdin
Newc., in Maine
- 41 Red Beard Sponge, Microciona prolifera Verrill, in
Maine
- 43 Quahogs, Mercenaria mercenaria, in Maine
- 44 The Astarte spp. Complex in Maine
- 45 The Discordant Mussel (Musculus discors) and the Little
Black Mussel (Musculus niger) in Maine
- 50 The Brittle Star (Ophiura robusta) in Maine
- 51 The Smooth Top Shell, Margarites helicina, in Maine
- 55 Intertidal Bedrock Areas of High Species Diversity
in Maine.

- 57 The Yellow-nosed Vole in Maine
- 63 Bog Elfin, Incisalia lanoiaieensis
- 71 The Brachiopod, Terebratulina septentrionalis, in Maine
- 72 The Priapulid, Priapilus caulatus in Maine
- 80 Landlocked Arctic Charr in Maine

GEOLOGICAL AND HYDROLOGICAL PLANNING REPORTS

(reports are listed in order in which they were published)

- 31 Maine Tourmaline Localities
- 37 Significant Geologic Localities in the Casco Bay Group, Southern Maine
- 40 Rose Quartz Crystal Localities in Maine
- 46 Significant Bedrock Fossil Localities in Maine
- 53 Emerged Glaciomarine Deltas in Maine
- 54 Geological and Botanical Features of Sand Beach Systems in Maine
- 56 Significant Geologic Localities in the York County Coastal Zone
- 60 Waterfalls in Maine
- 64 Gorges in Maine
- 67 Eskers in Maine
- 68 The Belgrade Esker/Delta Complex
- 74 Whitewater Rapids in Maine
- 75 Jasper Beach, Machiasport, Maine

MISCELLANEOUS REPORTS

Listing of Critical Area Features

- 2 A Preliminary Listing of Noteworthy Natural Features in Maine
- 27 A Revised listing of Natural Features for the Maine Critical Areas Program - 1983

Conservation

- 4 Long Term Protection of Maine's Critical Areas
- 3 The Landowner's Options - A Guide to the Voluntary Protection of Land in Maine

Title Transfer

- 5 The Effects of Critical Area Designation on Title Transfer of Land

Natural Regions

- 6 The Natural Regions of Maine

Mountain Studies

- 1 Mountain Areas in Maine, Background and Work Program
- 8 Preliminary Critical Areas Survey of the Appalachian Trail in Maine

National Natural Landmark Evaluations

- 14 Evaluation of No. 5 Bog and Jack Pine Stand, Somerset County, Maine, as a Potential National Natural Landmark

Legislative Report

- 35 Uncut Timber Stands and Unique Alpine Areas on State Lands

Annual and Biennial Status Reports

- 18 1979 Annual And Biennial Status Reports
- 20 1980 Annual and Biennial Status Reports
- 22 1981 Annual and Biennial Status Reports
- 23 1981 Unregistered Areas
- 28 1983 Biennial Status Report
- 32 1985 Biennial Status Report

Inventories of State-owned Lands

Public Lands

- 9 Bigelow Preserve, A Natural Resources Inventory and Critical Areas Survey
- 10 Squa Pan Public Lot, A Natural Resources Inventory and Critical Areas Survey
- 11 Telos Public Lot, T6 R11 WELS, A preliminary Natural Resources Inventory
- 12 The Mahoosuc Mountains, A Natural Areas Inventory
- 13 The Great Heath, A Natural Areas Description
- 17 T15 R9 Aroostook County, A Natural Resources Inventory
- 34 Old-Growth Forests, Subalpine Forests, and Alpine Areas in the Bigelow Preserve, Mahoosuc Mountains, and the Baldpates

Baxter State Park

- 24 Special Areas Inventory of Baxter State Park
- 31 Old-Growth Forests, Subalpine Forests and Alpine Areas in Baxter State Park

Geological

- 7 Development of a Methodology for Inventory Kettle Holes in Maine
- 26 Important Geological Features and Localities in Maine

Botanical

- 15 A Revision of the Maine Rare Plant Inventory Process
- 19 Classification Scheme for the Peatlands of Maine
- 25 An Annotated List of Maine's Rare Vascular Plants
- 29 A Summmary of Old-Growth Forests in Maine
- 33 A Compilation of the Critical Area Program's Botanical Fact Sheets

Zoological

- 21 An Application of the Maine Colonial Waterbird Inventory

Archeological

- 16 An Evaluation of Shell Middens on the Maine Coast
- 62 Petroglyphs in Maine

EDUCATIONAL BROCHURES

Plants

Nodding Pogonia
Orchids
Sassafras
Mountain Laurel
Rhododendron
Tupelo
Atlantic White Cedar
Shagbark Hickory
Baxter State Park: Flowering Ground Plants of the
Northern Forest
Stalking Sassafras
Old-Growth White Pine
White Oak
Alpine Tundra
Furbish's Lousewort

Invertebrate Animals

American Oyster
Horseshoe Crab
Marine Invertebrates

Birds

Alcids
Common Eider
Terns
Black Tern
Least Tern
Piping Plover

Leach's Storm Petrel
Wading Birds

Geology

Waterfalls
Gorges
Whitewater Rapids
Eskers
Fossils
Sand Beaches

Wells National Estuarine Reserve

Wells Sanctuary
Estuaries
Birds
Sand Beaches

APPENDIX IV

THE NUMBER OF REGISTERED CRITICAL AREAS (585) BY TOPIC*

Botanical

Rare Plants	153
Natural Plant Communities	
Alpine Tundra Communities	11
Sub-Artic Maritime Communities	6
Old-Growth Forests	42
Coastal Sand Beach Dunes	3
Jack Pine Stands	5
Peatlands	12
Fens	3
	<u>235</u>

Zoological

Blueback Trout Areas	10
Marine Invertebrate Areas	33
Least Tern and Piping Plover Nesting Areas	6
Black Tern Nesting Areas	1
Inland Great Blue Heron Nesting Areas	3
Coastal Wading Bird Colonies	16
Seabird Nesting Islands	77
	<u>146</u>

Geological

Coastal Sand Beaches	27
Coastal Bedrock Areas	28
Coastal Cobble Beach	1
Fossils	28
Eskers	18
Deltas	4
Tourmaline Localities	4
Waterfalls	55
Gorges	17
Whitewater Rapids	33
Kettlehole Pond Complexes	2
	<u>217</u>

* A few areas are categorized in more than one topic because they possess a variety of values.

APPENDIX V

CRITICAL AREA OWNERSHIP

INDIVIDUALS	270
CORPORATIONS	95
Great Northern Paper Co.	19
International Paper	12
Scott Paper Co.	9
Boise Cascade	7
Champion Paper Co.	6
Central Maine Power Co.	10
Diamond Occidental Forests	5
Seven Islands Land Co.	4
Prentiss and Carlisle	4
J.D. Irving	4
J.M. Huber	3
Dunn Timberland	3
Wyman Blueberry	2
Georgia Pacific	2
Bangor and Aroostook Railroad	2
Madison Paper Co.	1
Penley Co.	1
Saddleback Ski Corp.	1
GOVERNMENT	187
<u>Federal</u>	
National Park Service	15
U.S. Fish and Wildlife Service	9
National Forest Service	9
U.S. Coast Guard	4
<u>State</u>	
Department of Conservation	
Bureau of Public Lands	33
Bureau of Parks and Recreation	32
Baxter State Park	23
Inland Fisheries and Wildlife	24
Department of Transportation	8
Department of Education	2
<u>Municipalities</u> (Towns and Cities)	28
NON-PROFITS	33
The Nature Conservancy	22
National Audubon Society	4
New England Wildflower Society	2

Forest Society of Maine	2
Maine Audubon Society	1
Twin Town Nature Club	1
Philadelphia Conservationists, Inc.	1

- * Based on a total of 585.
- ** For areas with multiple landowners, the area is listed in the category of the landowner with the majority interest.

APPENDIX VI
Executive Summary from Uncut Timber Stands and
Unique Alpine Areas

Presented to the 111th Legislature, April 1986

The 111th Legislature directed the State Planning Office to inventory uncut timber stands and unique alpine areas on State-owned lands.

To conduct this study, Critical Areas Program staff drew upon previous inventories and undertook additional studies in 1984 and 1985. Our review was limited to State-owned lands in T.15 R.9 WELS, Baxter State Park, Bigelow Mountain, and the Mahoosuc Mountains. All the background reports used are available from the Maine State Planning Office.

Our studies found that the State owns and manages the most significant alpine vegetation areas in Maine, with Mt. Katahdin being the most significant. Relatively few old-growth forests were found on State lands. In most cases, all the lower elevation forest lands had been commercially harvested. Only fifteen old-growth forest stands, totaling 1553 acres, were documented in this study. The largest old-growth forest areas were found in Baxter State Park and T.15 R.9 W.E.L.S.

Subalpine forests were also documented on 23,094 acres in Baxter State Park, 1334 acres in Bigelow Preserve, 332 acres on Baldpate, and 2444 in the Mahoosuc Mountains. Because subalpine forests have not been comprehensively inventoried in Maine, this study did not evaluate the relative significance of subalpine forests on State lands.

Nine specific recommendations are made to promote the conservation of exceptional forest areas and alpine vegetation. The major recommendations include:

- Existing management plans should be updated by the Bureau of Public Lands and Baxter State Park Authority to consider the exceptional values of old-growth forests and alpine vegetation.
- The topic of subalpine forests should be evaluated by the Critical Areas Advisory Board to determine whether subalpine forests merit inclusion on the Register of Critical Areas.
- Old-growth forest areas documented in this report should be considered for inclusion on the Register of Critical Areas.
- A Maine Forest Reserve System should be established, beginning on State-owned lands, to protect forest stands of exceptional value. Potential sites are identified in the Critical Areas Program's 1984 and 1985 inventories. All State land should be inventoried to identify other potential sites.

APPENDIX VII

FUTURE CRITICAL AREAS INVENTORY TOPICS

Geological Features

(see Important Geological Features and Localities in Maine for more details)

Bedrock

1. Significant Inland Bedrock Sites
2. Mineral localities
3. Update on new fossil areas

Glacial

1. Glacial flow indicators
2. Cirques, tarns, and aretes
3. Fluted tills
4. Multiple tills
5. Laminated tills
6. Drumlins
7. Moraines
8. Update of eskers and deltas
9. Aeolian deposits
10. Kettlehole topography

Geomorphological

1. Reversing deltas
2. Reversing waterfalls
3. Cobble beaches
4. Coastal rock arches, cliffs, caves, kettleholes
5. Scenic ridges and views

Other

1. Natural springs
2. Limestone Caves
3. Slabs Caves
4. Permafrost
5. Soils

Botanical Features

Natural Plant Communities

1. Serpentine outcrop communities
2. Talus slope communities
3. Riverside communities
4. Coastal headland communities
5. Sand plain grasslands
6. Subalpine forest/krummholz (complete for the rest of the state)
7. Maritime forests
8. Floodplain forests
9. Rich upland forests
10. Northern hardwood forests
11. (Examples of old-growth forests of No. 7,8,9,10)
12. Freshwater wetlands and marshes
13. Forested swamps
14. Peatlands - inland domed
 - forested
 - lake-side
 - stream-side
15. Salt marshes
16. Intertidal flats and shores

Rare Vascular Plants

The Critical Areas Program has undertaken extensive work on rare plants. Botanists have prepared 112 botanical fact sheets on rare species, as well as Rare Vascular Plants of Maine, (1983) a volume listing all known herbarium records for rare plants in the state. Currently, the program is completing the Official List of Maine's Endangered and Threatened Plants. The Program will base future inventory needs on the degree of plant rarity and endangerment. As depicted our priorities will be to attempt to relocate the 91 plant species possibly extirpated from Maine, to inventory federally Endangered and Maine Endangered and Threatened Plants. A complete listing of the species in each category is available from the State Planning Office. The Critical Areas Program has a limited cooperative agreement with the U.S. Fish and Wildlife Service which provides partial financial support to continue landowner contact and monitoring of existing populations of the Federally Endangered Furbish's Lousewort and Small Whorled Pogonia, as well as to continue searching for new populations of the latter.

Priority Chart for Rare Vascular Plants

Significance Level:

Maine Status*:	National	New England	Maine	Undetermined	Total
Possibly Extirpated	8	26	45	12	91
Endangered	28	22	27	7	84
Threatened	13	28	30	3	74
Special Concern	9	26	10	0	45
Watch List	2	12	11	10	35
Total	60	114	123	32	329

Number in box is number of plant taxa in each category

Size of number indicates relative priority to Program

* As defined in "Explanation of the Draft List of Maine's Plants that are Endangered, Threatened, of Special Concern, or that belong on a Watch List".

Scenic Features

1. Coastal
2. Coastal highways
3. Major inland highways
4. Mountain tops
5. Major river systems
6. Inland lakes

Zoological Features

Wildlife (to be determined with IF&W)

1. Shorebird feeding areas
2. Shorebird resting areas
3. Upland sandpiper

Public Lands

Priorities for Critical Areas Inventories of State owned land will be determined in cooperation with agencies responsible for managing the resource.

- Department of Inland Fisheries and Wildlife
- Department of Conservation
 - Parks and Recreation
 - Bureau of Public Lands

Major River Systems

Priorities for natural areas inventories of the State's major river systems will be determined in cooperation with the State's River Coordinator.

APPENDIX VIII

REQUESTS FOR INFORMATION FROM THE CRITICAL AREAS PROGRAM DATA BASE

The following is a list of individuals and organizations who have requested information on either Critical Areas or rare and endangered plants, animals and geological features. The requests are either to determine presence or absence of any features within a certain boundary (i.e.: a town or along a proposed route of a transmission line or the site of a proposed residential/commercial development) or often just general information on the ecology and management of the feature.

GOVERNMENT AGENCIES (FEDERAL, STATE, AND LOCAL

1986

U.S. Coast Guard
U.S. Fish and Wildlife Service
U.S. Army Corps of Engineers
U.S. National Park Service

Maine Department of Transportation
Maine Department of Conservation
Governor's Task Force for Nuclear Waste
Office of Representative Olympia Snowe

Penobscot Indian Nation
Passamaquoddy Tribe

Comprehensive Plans for Towns of Smithfield, Richmond & Belgrade
Town of Islesboro Comprehensive Plan
Consultant for the Ogunquit Comprehensive Land Use Plan
Belgrade Planning Board
City of Bangor

1987

U.S. Army Corps of Engineers
U.S. National Park Service
Environmental Protection Agency
USDA Soil Conservation Service
USDA Northeastern Forest Experiment Station
Maine Department of Environmental Protection
Maine Department of Inland Fisheries & Wildlife
Maine Forest Service
Maine Legislature Joint Standing Committee on Audit and Program
Review
Maine Department of Transportation
Ontario Ministry of Natural Resources

Northern Maine Regional Planning Commission
Greater Portland Council of Governments
Eastern Mid-Coast Regional Planning Commission

City of Biddeford
City of Gardiner
Town of Greenbush
Town of Lubec
Town of Union
Penobscot Valley Planning Board
Town Planner, Waterboro
Route 100 Study Committee, Falmouth

CONSERVATION AGENCIES AND ORGANIZATIONS

1986

Island Institute
Maine Coast Heritage Trust
The Nature Conservancy
National Audubon Society
Maine Audubon Society
Maine Appalachian Trail Club
Blue Hill Land Trust

1987

Arrowsic Conservation Commission
Brunswick Conservation Commission
Camden-Rockport Land Trust
Cumberland Conservation Commission
Fayette Conservation Commission
Eliot Conservation Commission
Gray Conservation Commission
Yarmouth Conservation Commission
York Conservation Commission
Phippsburg Conservation Commission
Natural Resources Council of Maine
The Nature Conservancy
Maine Audubon Society

American Pine Barrens Society
Blue Hill Garden Club
Eagle Hill Wildlife Research Station
New Hampshire Natural Heritage Inventory
National Audubon Society
Lloyd Center for the Environment

COMPANIES AND CONSULTING FIRMS

1986

Central Maine Power Company
Swift River/Hafslund Company
Eastern Maine Development Corporation
Cobbosee Development Group
Normandeau Associates, Inc. (Environmental Scientists, Engineers
& Planners, Bedford, NH)
Waste Disposal, Inc., Camden, ME

Woodard & Curran, Portland, ME
Natural Resource Consulting Services, Concord, NH
Rivers Engineering Corporation, Consulting Engineers,
Londonderry, NH
Eco-Analysts, Inc., Bath, ME
Chas. T. Main Co., as consultant for Central Maine Power Company
HTA/OEST Associates, Inc., Wiscasset & Caribou Airport Review
Maine Tomorrow
Marketing Decisions, Inc.
HMM Associates, Inc., Concord, MA

1987

CFW & Associates
D&L Land Surveying
DeLuca-Hoffman Associates, Inc., Consulting Engineers
DuBois & King, Inc.
Eastern Maine Development Corporation
Investing Engineers, Inc.
E.C. Jordan, Co., Engineers & Scientists
Maine Tomorrow
Mitchell-Dewan Associates, Landscape Architects
Maliseet Development Corporation
NUS Corporation
Normandeau Associates, Inc.
Peat Products of America, Inc.
Pinkham and Greer
Woodard and Curran, Inc.
Maine Times
Private Gardens, Inc. Hockessin, DE
Wang's Company, Neenah, WI
Saddleback Ski Area
Chas. T. Main Co., for Central Maine Power Company
Patten Corporation of Maine
Acheron, Inc., Engineering, Environmental & Geotechnical
Consultants
Consultants, Newport & Winthrop, ME
Realty Development Group, Portland, ME
Study Committee for Route 100 Falmouth

Central Maine Power Company
Civil Engineering Services, Brewer, ME
Niles, Barton & Wilmer, Annapolis, MD
HMM Associates, Concord, MA
Natural Resources Conservation Services, Concord, NH

EDUCATIONAL

The following is a partial list of the schools, libraries, and citizens that have requested information in 1986 and 1987:

Asa Adams School, Orono, ME
Newport Elementary School
Nobleboro Central School
Leavitt Area High School, Turner, ME
Falmouth Middle School
Wiscasset Middle School
Bonny Eagle High School, West Buxton, ME
Lane Tech High School, Chicago, IL
Bath Junior High School
Morse High School, Bath, ME
St. Mary's School, Houlton, ME
Lisbon Village Library
Winter Harbor Grammar School
East Grand Elementary School & High School, Danforth, ME
Mt. Blue Junior High School, Farmington, ME
Tabor Academy, Marion, MA
University of Maine at Orono
University of Maine at Fort Kent
University of Maine at Machias
University of Maine at Presque Isle
University of Southern Maine
Colby College
Unity College
College of the Atlantic
University of New Hampshire
University of Vermont
University of Massachusetts at Amherst
University of Minnesota
University of Nevada
Delta State University, Cleveland, MS
St. Lawrence University
The Center for Northern Studies, Wolcott, VT
Brown University
Scarborough College University of Toronto
Harwood Island Biological Station
Acadia National Park
Francis M. Malcolm Institute, Easton, ME
Errol Consolidated School, Errol, NH
Warwick School District, Lititz, PA
Cooperative Extension Service, Dover-Foxcroft, ME

Bloomfield School, Skowhegan, ME
Stone Environmental School
Antioch/New England Graduate School, Keene, NH
Marshwood High School, Eliot, ME
Schoolteacher from Bethel

Local citizens of several towns for the Nuclear Waste Project;
Friends of Turbat's Creek (Kennebunkport); citizens of forty
towns in 14 Maine counties; fifteen citizens of Maryland,
Massachusetts, Montana, Oregon, New Hampshire, New York, North
Carolina, Quebec, and Tennessee.

APPENDIX IX

12/03/87

BUDGET OF NATURAL AREA PROGRAMS AND HERITAGE PROGRAMS IN TWELVE STATES

Program Name	Agency Affiliation	Legislative Budget	Acquisition Appropriation	Staff	State's Area (Sq. mile)	1985 Population (1000)
Maine Critical Areas Program	State Planning Office	\$ 85,000	N/A	2	33,265	1,164
New Hampshire Natural Heritage	Dept. of Resource & Economic Development	\$ 77,000	N/A	4*	9,279	998
VT Natural Heritage Program	Agency of Environment	\$ 66,000	N/A	3*	9,614	535
Massachusetts Natural Heritage Program	Dept. of Environmental Affairs	\$ 190,000	N/A	6	8,285	5,882
Arkansas Natural Heritage Commission	Dept. AK Heritage	\$ 230,000	Occasional	10	53,188	2,359
Indiana Division of Nature Preserves	Department of Natural Resources	\$ 326,700	\$1,250,000 (varies)	12	36,185	5,499
Kentucky Nature Preserves Commission	Natural Resources & Env. Prot. Cabinet	\$ 227,900	0 \$40,000 ck-off	7.5	40,410	3,726
Washington Natural Heritage Program	Dept. of Natural Resources	\$ 310,000	N/A	8	68,139	4,409
Michigan Natural Features Inventory	Department of Natural Resources	\$ 250,000	N/A	5	58,527	9,088
North Carolina Natural Heritage Program	Parks and Recreation	\$ 175,000	N/A	8	52,669	6,255
South Carolina Nongame and Heritage Trust	Wildlife and Marine Resources	\$ 638,000	\$1,300,000 (increasing)	14	31,113	3,347
Tennessee Ecological Services Division	Department of Conservation	\$ 332,000	\$2,000,000 (varies)	9	42,144	4,762

* The Nature Conservancy is contributing one staff person for the Heritage effort

Appendix X

Draft Legislation

AN ACT to Appropriate Funds for the Critical Areas Program of the State Planning Office

Be it enacted by the People of the State of Maine as follows:

Section 1. Appropriations. The following funds are appropriated from the General Fund to carry out the purpose of this Act.

Executive Department	1988-1989
State Planning Office	
Positions	(2 1/2)
Personal Services	\$54,872
All Other	95,000

*Provides funds for one data manager position (range 22), one plant ecologist position (range 23), and one part-time clerk typist III (range 12); and for contractual work for statewide surveys to identify significant geological, scenic, botanical, and geological areas worthy of preservation. Funds are also provided for printing and administrative costs.

Statement of Fact

The purpose of this legislation is to provide funding for the State Planning Office to carry out the Critical Areas Act and administer the Critical Areas Program.