

CALVERT COUNTY CRITICAL AREA

Habitat Protection Areas For:

**Threatened and Endangered Species, and
Species In Need of Conservation**

Natural Heritage Areas

Locally Significant Habitats

R. Wayne Tyndall
Gene Cooley
Aaron Keel

Maryland Natural Heritage Program
Forest, Park and Wildlife Service
Department of Natural Resources
Annapolis, Maryland 21401

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INTRODUCTION

The Chesapeake Bay Critical Area Law was passed in 1984 to:

(1) Establish a Resource Protection Program for the Chesapeake Bay and its tributaries by fostering more sensitive development activity for certain shoreline areas so as to minimize damage to water quality and natural habitats; and

(2) Implement the Resource Protection Program on a cooperative basis between the State and affected local governments, with local governments establishing and implementing their programs in a consistent and uniform manner subject to State criteria and oversight.

Regulations for implementing the Law were promulgated in 1986 and referred to as the Critical Area Criteria. Pursuant to the Criteria, the Natural Heritage Program has been involved with the identification and protection of three types of Habitat Protection Areas (section 14.15.09):

(1) Threatened and Endangered Species, and Species in Need of Conservation (14.15.09.03),

(2) Natural Heritage Areas (14.15.09.04), and

(3) Wildlife habitat types and plant communities which are determined by local jurisdictions to be of local significance (14.15.09.04).

Species and Natural Heritage Areas protected by the Criteria are listed in the Threatened and Endangered Species Regulations passed in June 1987 (Appendix). Locally significant habitats

identified by the Natural Heritage Program are usually areas with uncommon plant communities or with rare species not listed in the Threatened and Endangered Species Regulations, or both.

The role of the Natural Heritage Program has been divided into three overlapping phases. During the first phase, existing data were used to identify a total of 94 Habitat Protection Areas; 60 for State-listed species, 23 for Natural Heritage Areas, and 11 for locally significant habitats. In May 1987, each County was provided with a set of National Wetland Inventory maps illustrating recommended boundaries for these Habitat Protection Areas boundaries plus synoptic descriptive material.

In the second phase, beginning with the commencement of the 1987 growing season and ending with the close of the 1988 field season, protection plans were prepared for each site along with more detailed ecological summaries. Emphasis was placed upon determining which provisions of the Criteria apply to each site. In the great majority of cases, the Criteria appear to offer adequate protection. For some sites, additional protection measures were needed. Protection plans were also prepared for sites discovered after May 1987.

The third phase, assisting local jurisdictions in protecting Habitat Protection Areas pursuant to the Criteria, officially began with passage of Critical Area Plans of local jurisdictions. As mandated by law, local jurisdictions are responsible for site protection. For pragmatic reasons, the great majority of local jurisdictions have decided to use existing environmental review

programs to apply the Criteria on a case-by-case basis. Therefore, the site-specific ecological and regulatory information generated during the second phase will expedite cooperative review between the Natural Heritage Program and local jurisdictions.

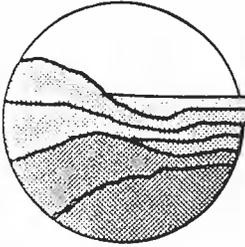
This publication marks the end of the second phase and will serve as the basis for reviewing proposed activities in Habitat Protection Areas during the third phase. Adding new Habitat Protection Areas will also be an important component of future efforts. As stated in Section 14.15.09.04.C.(2)(c), "If additional plant and wildlife habitat areas are designated in the future, local public hearings, as appropriate, shall be held to consider comments on the areas and protection measures proposed."

FOREST, PARK AND WILDLIFE SERVICE

ENVIRONMENTAL REVIEW PROCEDURES

(as outlined in 28 February 1989 correspondence)

This section describes the procedures and specifications of the **State-wide** Environmental Review process conducted by the Maryland Forest, Park and Wildlife Service. Information is provided on the material necessary and the time required to complete an environmental review. This process alerts the Maryland Natural Heritage Program to any projects affecting Listed Species Sites, Natural Heritage Areas, and Other Locally Significant Habitats. In addition, the FPWS environmental review will include concerns of the Cooperative Forestry Division and the Wildlife Administration.



Maryland Department of Natural Resources

Forest, Park and Wildlife Service
Tawes State Office Building
Annapolis, Maryland 21401

William Donald Schaefer
Governor

February 28, 1989

Torrey C. Brown, MD
Secretary

Donald E. MacLauchlan
Assistant Secretary

Dear

This concerns the process by which this unit of DNR will be handling the flow of paper relating to Environmental Reviews of development/subdivision projects in the Critical Area. Any developer, consultant, engineer or individual that has a project in the Critical Area will need to have that project reviewed for the presence or absence of state or federally listed threatened or endangered species of plants or animals, and species in need of conservation.

Additional items of concern are found in the Critical Area Law and Regulations and will also be given consideration during our Environmental Review process.

Those items of concern are: Colonial Waterbird nesting sites, Waterfowl staging and Concentration Areas, forests which are potential habitat for forest interior dwelling birds, wildlife corridors, wildlife habitats of local significance, Natural Heritage Areas, the requirements for the protection of existing forest and developed woodland vegetation, the requirements for afforestation if no forests exist on a development site, and the requirements for reforestation if mitigation is needed when forests must be cleared for development. When appropriate, the findings will include occurrences on adjacent sites if the proposal has the potential for disturbing those species or habitats.

This process is designed to allow us to provide a sound Environmental Review, in a timely manner. The process also enables us to offer unified technical assistance to you upon request.

Telephone: _____

DNR TTY for Deaf: 301-974-3683

Any developer, consultant, engineer or individual with a proposed project in the critical area should be directed to make a written request for this review to:

Donald E. MacLauchlan, Assistant Secretary
Maryland Forest, Park and Wildlife Service
580 Taylor Avenue
Annapolis, MD 21401

The developer, consultant, engineer or individual must submit, with his written request, three sets of the following information:

- A. Location Map
- B. Site Map, at a scale of 1:24,000 maximum showing property boundaries, Critical Area boundary, minimum 100 foot Buffer, streams, existing roads, and proposed limits of disturbance.
- C. County or local jurisdiction in which the project is proposed.
- D. Project name.
- E. Statement that the proposed project or any portion of the project is in the Critical Area.
- F. Description of the proposed development/subdivision.

The Wildlife, Cooperative Forestry Management, and Natural Heritage Divisions will conduct a review of their records and if necessary request a site visit to develop a response. A single response will be prepared and mailed to the applicant within 20 working days of receipt of the request. Copies of this response will be circulated to our reviewers as well as the Critical Area commission, the Office of Planning and to you or your designated contact person. Please notify us as to who you wish to be the designated contact person within your county, jurisdiction or agency. When the response indicates that habitats that need special protection occur on the site, an offer of technical assistance will be made and FPWS contact names and phone numbers given.

Intrinsic to the establishment of this process is your cooperation in informing any prospective developer, consultant, engineer or individual who may propose a development/subdivision in the Critical Area that this is a requirement he must meet and the earlier he does so the better for all involved.

This system will allow us to assist all involved parties to meet some of the legal requirements of the laws and regulations. Our Environmental Review response will not imply approval, endorsement or denial of any proposed project, but provide information that is required to be considered when a development/subdivision project falls in the Critical Area.

Please assist our efforts by notifying us that you will cooperate with us on the guidelines and processes presented in this letter, and who you wish to be your designated contact person, by March 17.

I look forward to a cooperative future with you as we continue our efforts at protecting the Chesapeake Bay.

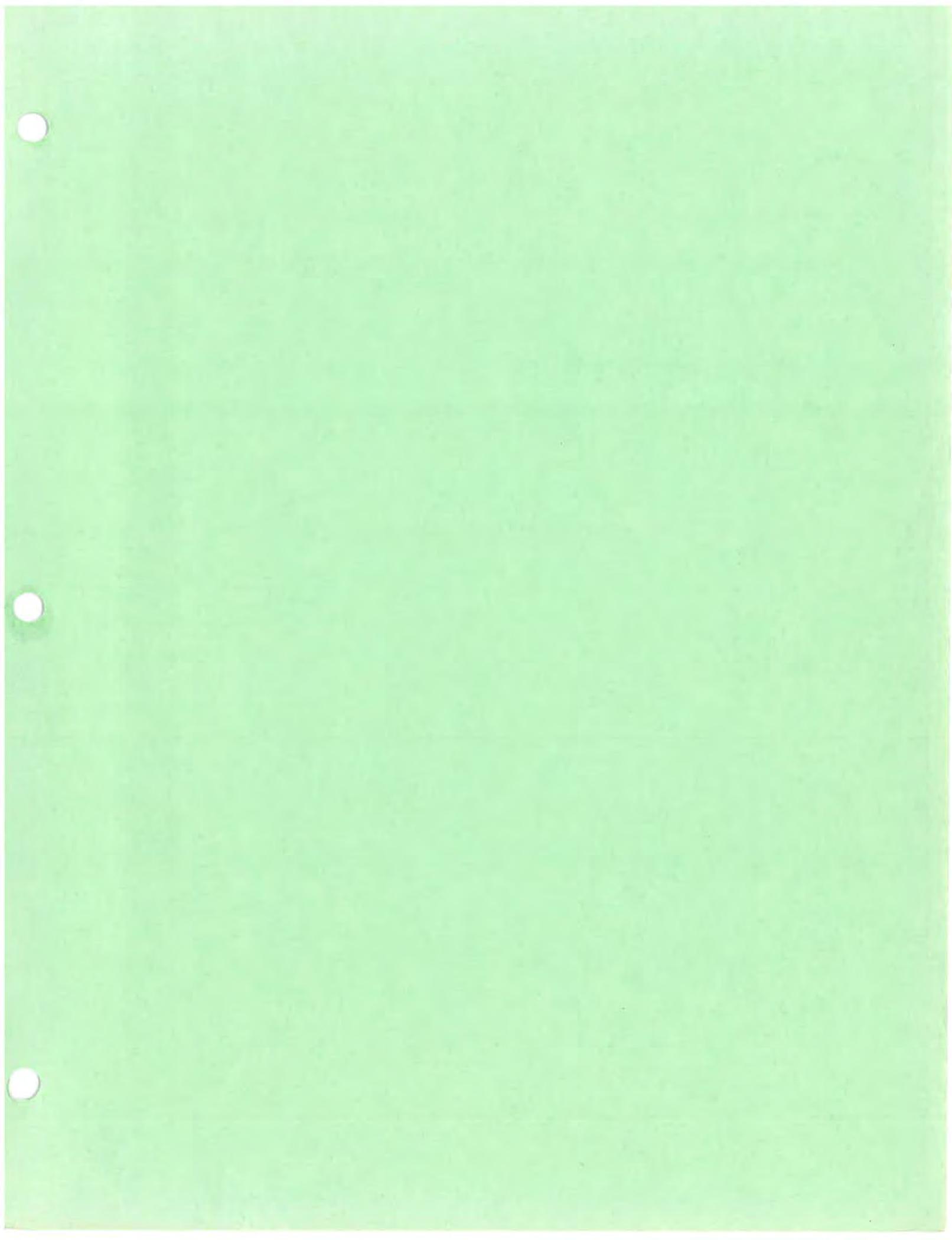
Sincerely,

Donald E. MacLauchlan
Assistant Secretary,
Forest, Park and Wildlife Service

JB/pg

fl: P&Z.mem

cc: Office of Planning
Critical Area Commission
V. Harrison



HABITAT PROTECTION AREA SUMMARIES

Site-specific ecological and protection information is provided in this section in the form of Habitat Protection Area Summaries. Summary sections are annotated below.

Site Name - Whenever practical, a name was selected which would not divulge the precise location of the site. Site codes are those used in the May 1987 correspondence; the County abbreviation is given first, followed by "L" for State-listed species, "NHA" for Natural Heritage Area, and "O" for other locally significant habitat. Sequential numbers have been arbitrarily assigned to Habitat Protection Areas for State-listed species and locally significant habitat, collectively. Numbers for NHAs are those used in the Threatened and Endangered Species Regulations.

County - This field is useful in scanning for sites which extend into neighboring counties.

USGS Quad - Name of 7-1/2' U. S. Geological Survey topographic map(s) and U. S. Fish and Wildlife Service's National Wetlands Inventory map(s) encompassing the site.

SUMMARY OF ECOLOGICAL SIGNIFICANCE - The most important ecological facets of each site are summarized in this field.

ELEMENT SUMMARY TABLE - All State-listed species as well as rare but unlisted species are tabulated in this section.

OTHER VALUES AND SIGNIFICANCE - Biological and ecological features which contribute to the importance of a site are provided in this field. In addition, historical records of rare and endangered species are entered in this section.

THREATS AND MANAGEMENT NEEDS - Identifying all threats and management needs is obviously impractical. Therefore, the most important primary threats are addressed in this section along with immediate management needs.

BOUNDARY DISCUSSION - An ecological description is provided since Habitat Protection Areas are usually comprised of tidal and non-tidal wetlands, steep slopes, and other distinct ecophysiological units readily recognizable in the field. Although map boundaries are essential, their accuracy is restricted by that of the parent map and its scale. Therefore, during site reviews, ecological boundary descriptions and maps must both be used to understand the true site boundary. This section has also been used to identify and discuss specific Criteria which protect natural

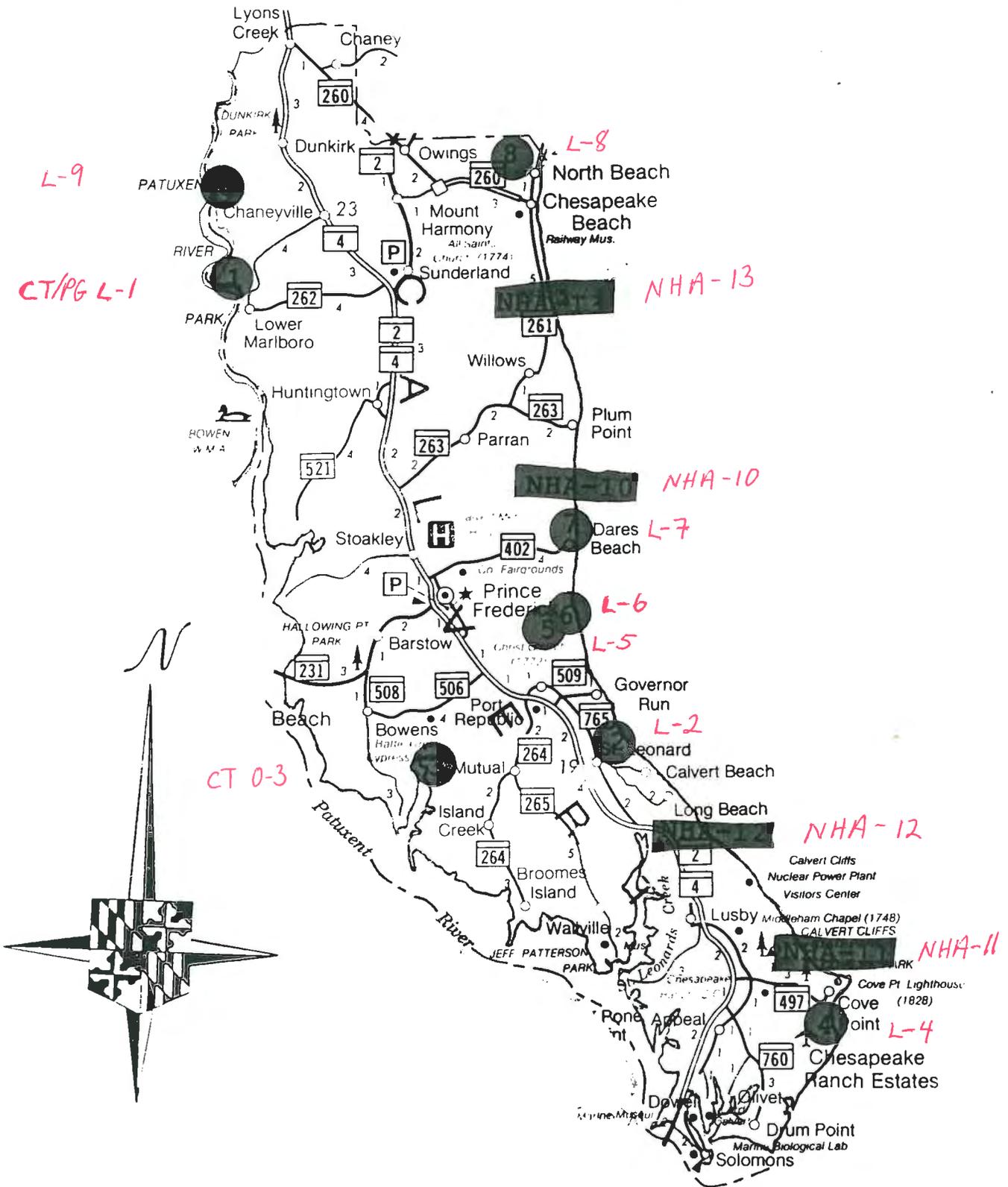
resources encompassed by the boundary. Other protection recommendations are also made whenever necessary.

SITE DESCRIPTION SUMMARY - Additional ecological information is included in this section when deemed necessary to better understand the nature of a site. In most cases, however, this section has not been included to avoid redundancy with previous sections.

Figure 1. General location map for Habitat Protection Areas in the Chesapeake Bay Critical Area of Calvert County.

| <u>Number On Map</u> | <u>STATE-LISTED SPECIES</u> | |
|--------------------------|------------------------------------|----------------------|
| 1 | Middle Patuxent Marshes | (CT/PG L-1) |
| 2 | Western Shores | (CT L-2) |
| 4 | Little Cove Point | (CT L-4) |
| 5 | Scientist Cliffs | (CT L-5) |
| 6 | Parker Creek Slope | (CT L-6) |
| 7 | Plum Point | (CT L-7) |
| 8 | North Beach Marshes | (CT L-8/ AA L-10) |
| 9 | Patuxent Highlands | (CT L-9) |
| 10 | Graham Creek Marsh | (CT L-10) |
| | <u>NATURAL HERITAGE AREAS</u> | |
| NHA-10 | Camp Roosevelt Cliffs | (CT NHA-10) |
| NHA-11 | Cove Point Marsh | (CT NHA-11) |
| NHA-12 | Flag Ponds | (CT NHA-12) |
| NHA-13 | Randle Cliff Beach | (CT NHA-13) |
| | <u>LOCALLY SIGNIFICANT HABITAT</u> | |
| 3 | Battle Creek Cypress Swamp | (CT O-3) |

CALVERT COUNTY



Middle Patuxent Marshes
(Critical Area Site CT L-1 & PG L-1)

County: Calvert, Prince Georges USGS Quad: Lower Marlboro

SUMMARY OF ECOLOGICAL SIGNIFICANCE

This series of wetlands provides habitat for an Endangered species, Sensitive Joint-Vetch (Aeschynomene virginica). In addition, the site supports at least three wetland communities; Big Cordgrass (Spartina cynosuroides), Arrow Arum-Pickerelweed (Peltandra virginica - Pontederia cordata), and Tidal Mud Flat.

Of all tidal marsh types, the Big Cordgrass Community is second in production of detritus available to the estuarine food web. It is heavily utilized by non-game species, as well as by game species such as muskrat and geese. This Community is also important in buffering shoreline erosion, because of the dense system of large rhizomes and intertwining roots.

The Arrow Arum-Pickerelweed Community is also among the most important marsh types for productivity and wildlife utility. Detritus is produced at a rate of two to four tons per acre annually, and it is readily available to the estuarine food web because of daily tidal flushing. Seeds and shoots of both dominant species are consumed by a variety of waterfowl. This Community is also associated with fish spawning and nursery areas, and is important in buffering shoreline erosion.

The Tidal Mud Flat Community is very high in secondary productivity and, therefore, is heavily utilized as foraging area by waterfowl, sport and commercial fishes, and many non-game vertebrate and invertebrate components of the estuarine food web. In addition, it is very important in nutrient cycling and in building habitat for adjacent vegetated communities.

ELEMENT SUMMARY TABLE

| <u>Element</u> | <u>Common Name</u> | <u>Status</u> |
|------------------------------|-----------------------|---------------|
| <u>Aeschynomene Virginia</u> | Sensitive Joint-Vetch | Endangered |

OTHER VALUES AND SIGNIFICANCE

Because of the high species diversity and productivity of these wetland communities, waterfowl hunting and fishing are current recreational uses. The site is also valuable for recreational activities such as birdwatching.

THREATS AND MANAGEMENT NEEDS

Excessive boat wakes is a primary immediate concern which could be mitigated by enforcement of a no-wake speed limit. Another concern is the construction of a large number of waterfowl blinds which may reduce habitat area for Sensitive Joint-Vetch. Other threats include excessive nutrient, pesticide, and sediment loading from agricultural land, and timbering of non-tidal wetlands. The former could be reduced by flanking tributaries leading to the wetlands with naturally vegetated 25-foot setbacks. Timbering of non-tidal wetlands would increase nutrient and sediment runoff, and groundwater discharge into contiguous emergent marshes would be altered. However, adherence to the intent and specific provisions of the Critical Area Criteria would preclude these and other potential threats. Specific provisions are discussed in the next section.

BOUNDARY DISCUSSION

The site boundary includes tidal wetlands plus a contiguous 100-foot strip of upland vegetation. The entire site falls within the Critical Area Buffer.

The following activities are specifically allowed by the Criteria in portions of Habitat Protection Areas in the Buffer, assuming rare and endangered species are not affected detrimentally:

- Hunting
- Fishing
- Trapping
- Educational Pursuits
- Scientific observation
- Non-commercial, passive recreation; e.g.,
 - Hiking
 - Nature photography [14.15.10.N]

- Cutting of trees for personal use, if replaced on an equal basis and does not impair water quality or habitat value [14.15.09.01.C(5)c]

- Individual private piers installed and maintained by the riparian landowner [14.15.03.01.C]

- Public beaches, launching and docking facilities, fishing piers if 5 requirements are met [14.15.03.08]

One subdivision-owned slip, pier, or mooring buoy per
300 feet of shoreline [14.15.03.07]

Water-dependent research facilities [14.15.03.09]

Commercial water-dependent fisheries facilities
[14.15.03.10]

The following activities are specifically disallowed in
portions of Habitat Protection Areas inside the Buffer:

Development activities, including structures, roads,
parking areas and other impervious surfaces,
mining and related facilities, or septic systems
EXCEPT: Activities associated with
acceptable water-dependent facilities
[14.15.09.01.C]

Industrial and port-related facilities, and non-public
marinas [14.15.03.05 and .06]

Bridges and utilities unless no feasible alternative
exists [14.15.02.04.C(1)(b)]

Dredged spoil disposal except for:

- a. backfill for permitted shore erosion
protection structures
- b. use in approved vegetated shore erosion
projects
- c. placement on previously approved channel
maintenance spoil disposal areas
- d. beach nourishment [14.15.03.04(7)]

Clearing of existing natural vegetation except

- a. to provide access to private piers
- b. to install or construct a legally permitted
shore protection device or measure
- c. to install or construct a legally permitted
water-dependent facility [14.15.09.01.C(4)(e)
& (5)(c)]

Farming activities, including the grazing of livestock
[14.15.09.01.C(4)(F)]

Commercial harvesting of trees [14.15.09.01.C(5)(a)].

In addition to the above provisions, Habitat Protection Areas for State-listed species are to be protected from development activities and disturbances "...unless it can be shown that these activities or disturbances will not have or cause adverse impacts on these habitats" [14.15.09.03.C(2)(a)]. To assure adequate enforcement of this provision, each proposed activity or disturbance should be reviewed on a site-by-site basis.

(December 1987)

Western Shores
(Critical Area Site CT L-2)

County: Calvert

USGS Quad: Cove Point

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

The site supports two globally rare species of Tiger-beetles, the Northeastern Beach Tiger-Beetle (Cicindela dorsalis) and the Puritan Tiger-Beetle (Cicindela puritana). Both species are listed by the State as Endangered, and both are candidates for Federal listing.

ELEMENT SUMMARY TABLE:

| <u>Element Name</u> | <u>Common Name</u> | <u>Status</u> |
|---------------------------|------------------------------------|---------------|
| <u>Cicindela dorsalis</u> | Northeastern Beach Tiger-Beetle | Endangered |
| <u>Cicindela puritana</u> | Puritan Tiger-Beetle | Endangered |

OTHER VALUES AND SIGNIFICANCE:

Cliffs at the site date back to the Miocene. They are, therefore, popular to amateur and professional fossil researchers.

THREATS AND MANAGEMENT NEEDS:

Threats

The Puritan Tiger-Beetle is directly dependent upon bare cliff faces for life-cycle completion. Since natural erosion of cliff faces, precludes vegetation establishment, shoreline stabilization structures could be detrimental if cliff stabilization and plant colonization ensue. Planting vegetation on cliff faces would destroy habitat directly, and clearing of vegetation above cliffs could result in excessive erosion of cliff faces destroying individuals or habitat, or both.

Since the Northeastern Beach Tiger-Beetle completes its life cycle on the beach, subpopulations could be destroyed during construction of shoreline stabilization structures. In addition, the amount of suitable habitat could be reduced if beach loss ensues. This species is also susceptible to heavy beach traffic; excessive foot and vehicular traffic have been linked to population declines and extirpation.

Management Needs

Neither the shoreline nor cliffs should be stabilized. At least a 100-foot strip of natural forest should be designated along the edge of cliffs. Off-road vehicles should not be allowed on the beach, and foot traffic should be restricted to small groups.

BOUNDARY DISCUSSION:

The entire site falls inside the Critical Area Buffer since the cliffs are "sensitive areas" contiguous with the minimum 100-foot limit of the Buffer (14.15.09.01.C(7)), and the Buffer must be expanded four feet for every one percent of slope for contiguous slopes of 15 percent or greater.

The following activities are specifically allowed by the Criteria in portions of Habitat Protection Areas in the Buffer, assuming rare and endangered species are not affected detrimentally:

- Hunting
- Fishing
- Trapping
- Educational Pursuits
- Scientific observation
- Non-commercial, passive recreation; e.g.,
 - Hiking
 - Nature photography [14.15.10.N]

- Cutting of trees for personal use, if replaced on an equal basis and does not impair water quality or habitat value [14.15.09.01.C(5)c]

- Individual private piers installed and maintained by the riparian landowner [14.15.03.01.C]

- Public beaches, launching and docking facilities, fishing piers if 5 requirements are met [14.15.03.08]

- One subdivision-owned slip, pier, or mooring buoy per 300 feet of shoreline [14.15.03.07]

- Water-dependent research facilities [14.15.03.09]

- Commercial water-dependent fisheries facilities [14.15.03.10]

The following activities are specifically disallowed in portions of Habitat Protection Areas inside the Buffer:

Development activities, including structures, roads, parking areas and other impervious surfaces, mining and related facilities, or septic systems
EXCEPT: Activities associated with acceptable water-dependent facilities
[14.15.09.01.C]

Industrial and port-related facilities, and non-public marinas [14.15.03.05 and .06]

Bridges and utilities unless no feasible alternative exists [14.15.02.04.C(1)(b)]

Dredged spoil disposal except for:

- a. backfill for permitted shore erosion protection structures
- b. use in approved vegetated shore erosion projects
- c. placement on previously approved channel maintenance spoil disposal areas
- d. beach nourishment [14.15.03.04(7)]

Clearing of existing natural vegetation except

- a. to provide access to private piers
- b. to install or construct a legally permitted shore protection device or measure
- c. to install or construct a legally permitted water-dependent facility [14.15.09.01.C(4)(e) & (5)(c)]

Farming activities, including the grazing of livestock [14.15.09.01.C(4)(F)]

Commercial harvesting of trees [14.15.09.01.C(5)(a)].

In addition to the above provisions, Habitat Protection Areas for State Listed species are to be protected from development activities and disturbances "...unless it can be shown that these activities or disturbances will not have or cause adverse impacts on these habitats" (14.15.09.03.C.(2)(a)). To assure adequate enforcement of this provision, each proposed activity or disturbance should be reviewed on a site-by-site basis.

(August, 1987)

Little Cove Point
(Critical Area Site CT L-4)

County: Calvert

USGS Quad: Solomons Island

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

The site supports the globally rare Puritan Tiger-Beetle (Cicindela puritana). This species is listed by the State as Endangered, and it is a candidate for listing by the Federal government as Endangered.

ELEMENT SUMMARY TABLE:

| <u>Element Name</u> | <u>Common Name</u> | <u>Status</u> |
|---------------------------|----------------------|---------------|
| <u>Cicindela puritana</u> | Puritan Tiger-Beetle | Endangered |

OTHER VALUES AND SIGNIFICANCE:

This area is very valuable for study of fossils by amateurs and professionals.

THREATS AND MANAGEMENT NEEDS:

Threats

The Puritan Tiger-Beetle is directly dependent upon bare cliff faces for life-cycle completion. Since natural erosion of cliffs precludes vegetation establishment, shoreline stabilization structures could be detrimental if cliff stabilization and plant colonization ensue. Planting vegetation on cliff faces would destroy habitat directly, and clearing of vegetation above cliffs could result in excessive erosion of cliff faces destroying individuals or habitat, or both.

Management Needs

Neither the shoreline nor cliffs should be stabilized. At least a 100-foot strip of natural forest should be designated along the edge of cliffs. Off-road vehicles should not be allowed on the beach, and foot traffic should be restricted to small groups.

BOUNDARY DISCUSSION:

The entire site falls inside the Critical Area Buffer since the cliffs are "sensitive areas" contiguous with the minimum 100-foot limit of the Buffer (14.15.09.01.C(7)), and the Buffer must

be expanded four feet for every one percent of slope for contiguous slopes of 15 percent or greater.

The following activities are specifically allowed by the Criteria in portions of Habitat Protection Areas in the Buffer, assuming rare and endangered species are not affected detrimentally:

- Hunting
- Fishing
- Trapping
- Educational Pursuits
- Scientific observation
- Non-commercial, passive recreation; e.g.,
 - Hiking
 - Nature photography [14.15.10.N]

- Cutting of trees for personal use, if replaced on an equal basis and does not impair water quality or habitat value [14.15.09.01.C(5)c]

- Individual private piers installed and maintained by the riparian landowner [14.15.03.01.C]

- Public beaches, launching and docking facilities, fishing piers if 5 requirements are met [14.15.03.08]

- One subdivision-owned slip, pier, or mooring buoy per 300 feet of shoreline [14.15.03.07]

- Water-dependent research facilities [14.15.03.09]

- Commercial water-dependent fisheries facilities [14.15.03.10]

The following activities are specifically disallowed in portions of Habitat Protection Areas inside the Buffer:

- Development activities, including structures, roads, parking areas and other impervious surfaces, mining and related facilities, or septic systems
EXCEPT: Activities associated with acceptable water-dependent facilities [14.15.09.01.C]

- Industrial and port-related facilities, and non-public marinas [14.15.03.05 and .06]

Bridges and utilities unless no feasible alternative exists [14.15.02.04.C(1)(b)]

Dredged spoil disposal except for:

- a. backfill for permitted shore erosion protection structures
- b. use in approved vegetated shore erosion projects
- c. placement on previously approved channel maintenance spoil disposal areas
- d. beach nourishment [14.15.03.04(7)]

Clearing of existing natural vegetation except

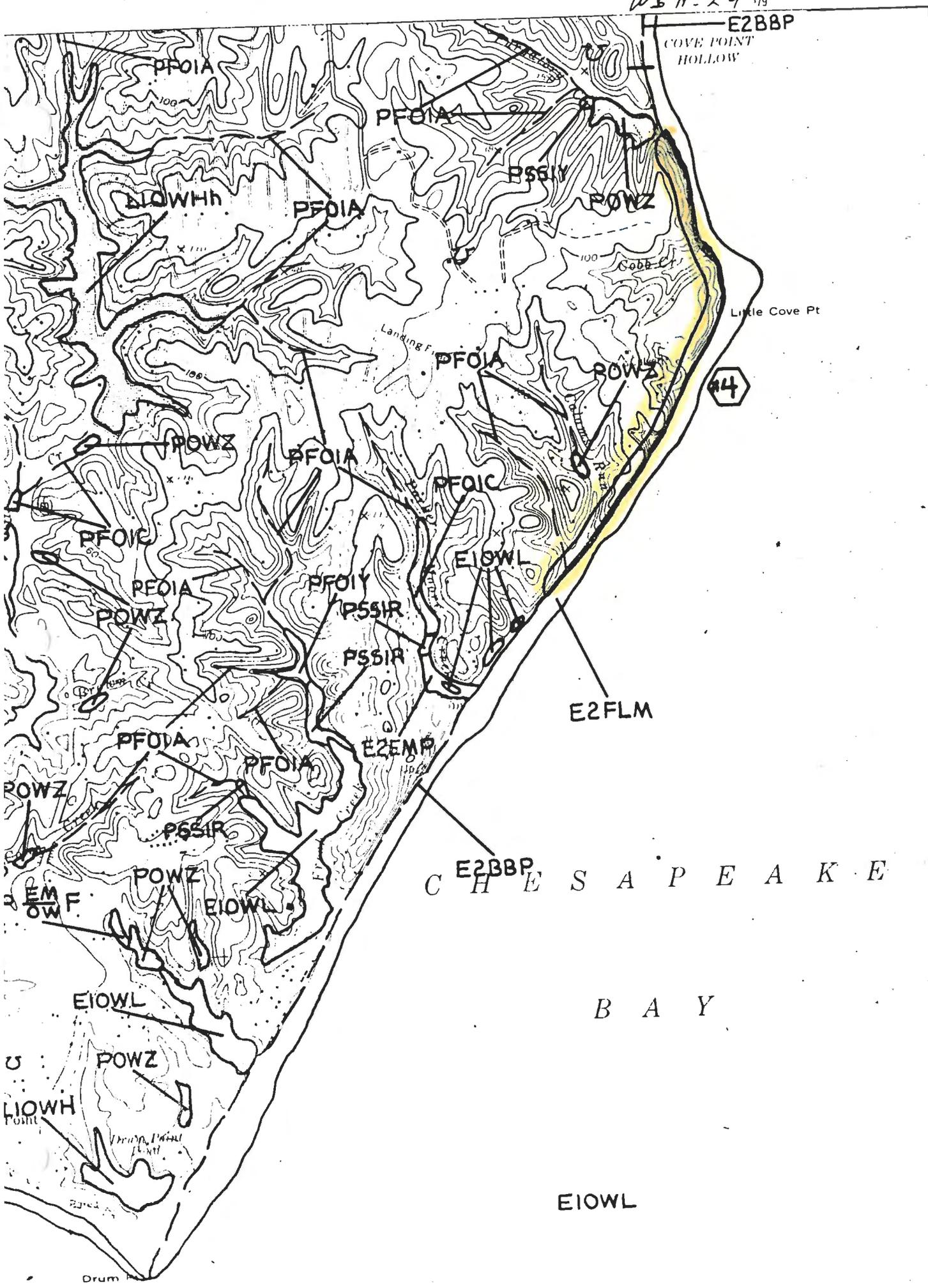
- a. to provide access to private piers
- b. to install or construct a legally permitted shore protection device or measure
- c. to install or construct a legally permitted water-dependent facility [14.15.09.01.C(4)(e) & (5)(c)]

Farming activities, including the grazing of livestock [14.15.09.01.C(4)(F)]

Commercial harvesting of trees [14.15.09.01.C(5)(a)].

In addition to the above provisions, Habitat Protection Areas for State-listed species are to be protected from development activities and disturbances "...unless it can be shown that these activities or disturbances will not have or cause adverse impacts on these habitats" (14.15.09.03.C.(2)(a)). To assure adequate enforcement of this provision, each proposed activity or disturbance should be reviewed on a site-by-site basis.

(August, 1987)



E2BBP
COVE POINT
HOLLOW

44

E2FLM

E2BBP
CHESAPEAKE

BAY

E1OWL

PFOIA

PFOIAA

PSSLY

POWZ

E1OWHh

PFOIA

PFOIA

POWZ

POWZ

PFOIA

PFOIC

PFOIC

PFOIA

PFOIY

E1OWL

POWZ

PSSIR

PFOIA

PFOIA

E2EMP

EM
OWF

POWZ

PSSIR

E1OWL

E1OWL

POWZ

E1OWH
Point

Drum

Scientists Cliffs
(Critical Area Site CT L-5)

County: Calvert

USGS Quad: Prince Frederick

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

The site supports two globally rare species of Tiger-beetles, the Northeastern Beach Tiger-Beetle (Cicindela dorsalis) and the Puritan Tiger-Beetle (Cicindela puritana). Both species are listed by the State as Endangered, and both are candidates for Federal listing.

ELEMENT SUMMARY TABLE:

| <u>Element Name</u> | <u>Common Name</u> | <u>Status</u> |
|---------------------------|------------------------------------|---------------|
| <u>Cicindela dorsalis</u> | Northeastern Beach Tiger-Beetle | Endangered |
| <u>Cicindela puritana</u> | Puritan Tiger-Beetle | Endangered |

OTHER VALUES AND SIGNIFICANCE:

Cliffs at the site date back to the Miocene. They are, therefore, popular for amateur and professional fossil researchers.

THREATS AND MANAGEMENT NEEDS:

Threats

The Puritan Tiger-Beetle is directly dependent upon bare cliff faces for life-cycle completion. Since natural erosion of cliff faces precludes vegetation establishment, shoreline stabilization structures could be detrimental if cliff stabilization and plant colonization ensue. Planting vegetation on cliff faces would destroy habitat directly, and clearing of vegetation above cliffs could result in excessive erosion of cliff faces, destroying individuals or habitat, or both.

Since the Northeastern Beach Tiger-Beetle completes its life cycle on the beach, subpopulations could be destroyed during construction of shoreline stabilization structures. In addition, the amount of suitable habitat could be reduced if beach loss ensues. This species is also susceptible to heavy beach traffic; excessive foot and vehicular traffic have been linked to population declines and extirpation.

Management Needs

Neither the shoreline nor cliffs should be stabilized. At least a 100-foot strip of natural forest should be designated along the edge of cliffs. Off-road vehicles should not be allowed on the beach, and foot traffic should be restricted to small groups.

BOUNDARY DISCUSSION:

The entire site falls inside the Critical Area Buffer since the cliffs are "sensitive areas" contiguous with the minimum 100-foot limit of the Buffer (14.15.09.01.C(7)), and the Buffer must be expanded four feet for every one percent of slope for contiguous slopes of 15 percent or greater.

The following activities are specifically allowed by the Criteria in portions of Habitat Protection Areas in the Buffer, assuming rare and endangered species are not affected detrimentally:

- Hunting
- Fishing
- Trapping
- Educational Pursuits
- Scientific observation
- Non-commercial, passive recreation; e.g.,
 - Hiking
 - Nature photography [14.15.10.N]

- Cutting of trees for personal use, if replaced on an equal basis and does not impair water quality or habitat value [14.15.09.01.C(5)c]

- Individual private piers installed and maintained by the riparian landowner [14.15.03.01.C]

- Public beaches, launching and docking facilities, fishing piers if 5 requirements are met [14.15.03.08]

- One subdivision-owned slip, pier, or mooring buoy per 300 feet of shoreline [14.15.03.07]

- Water-dependent research facilities [14.15.03.09]

- Commercial water-dependent fisheries facilities [14.15.03.10]

The following activities are specifically disallowed in portions of Habitat Protection Areas inside the Buffer:

Development activities, including structures, roads, parking areas and other impervious surfaces, mining and related facilities, or septic systems

EXCEPT: Activities associated with acceptable water-dependent facilities [14.15.09.01.C]

Industrial and port-related facilities, and non-public marinas [14.15.03.05 and .06]

Bridges and utilities unless no feasible alternative exists [14.15.02.04.C(1)(b)]

Dredged spoil disposal except for:

- a. backfill for permitted shore erosion protection structures
- b. use in approved vegetated shore erosion projects
- c. placement on previously approved channel maintenance spoil disposal areas
- d. beach nourishment [14.15.03.04(7)]

Clearing of existing natural vegetation except

- a. to provide access to private piers
- b. to install or construct a legally permitted shore protection device or measure
- c. to install or construct a legally permitted water-dependent facility [14.15.09.01.C(4)(e) & (5)(c)]

Farming activities, including the grazing of livestock [14.15.09.01.C(4)(F)]

Commercial harvesting of trees [14.15.09.01.C(5)(a)].

In addition to the above provisions, Habitat Protection Areas for State-listed species are to be protected from development activities and disturbances "...unless it can be shown that these activities or disturbances will not have or cause adverse impacts on these habitats" (14.15.09.03.C.(2)(a)). To assure adequate enforcement of this provision, each proposed activity or disturbance should be reviewed on a site-by-site basis.

(August, 1987)

Parker Creek Slope
(Critical Area Site CT L-6)

County: Calvert

USGS Quad: Prince Frederick

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

This is the only site of Single-headed Pussytoes (Antennaria solitaria) known for the Western Shore of Maryland. The habitat is in excellent condition for population maintenance or expansion.

ELEMENT SUMMARY TABLE:

| <u>Element Name</u> | <u>Common Name</u> | <u>Status</u> |
|-----------------------------|-------------------------|---------------|
| <u>Antennaria solitaria</u> | Single-headed Pussytoes | Threatened |

OTHER VALUES AND SIGNIFICANCE:

Maryland populations of Single-headed Pussytoes are at the northeastern limit of the species range. Due to greater geographic isolation and exposure to different environmental conditions, these populations probably have different genetic compositions than more centrally located populations. This genetic variation could be important to the long term viability of the species. Also, these populations could be useful in determining the factors responsible for defining the limits of the species distribution.

This site is part of a larger forested area which provides habitat for Forest Interior Dwelling Birds and serves as a corridor for the movement of birds and other wildlife. In addition, protection of the Single-headed Pussytoes steep slope habitat would also help prevent increased sedimentation of Parker Creek.

THREATS AND MANAGEMENT NEEDS:

Threats

The site does not appear to be threatened under current land use practices. However, since the Single-headed Pussytoes population is very small in population size and area, it is very vulnerable to destruction. Logging of the slope or ridgetop would be detrimental to its survival due to mechanical damage to plants and to increased erosion, light, and aridity which would degrade or destroy the plant's specialized habitat. Logging would also encourage the invasion of the habitat by weedy or exotic species such as Japanese Honeysuckle which may overrun the population. Even passive recreational activities such as hiking, could damage plants and degrade the habitat through increased erosion.

Management Needs

Notify the landowner of the significance of the Single-headed Pussytoes and seek cooperation in protecting the steep, north-facing slope habitat and associated ridgetops. Thoroughly search all nearby north-facing slopes for additional populations of Single-headed Pussytoes.

Other potential threats would be precluded by adherence to the intent and specific provisions of the Critical Area Criteria. Specific provisions which apply to this site are presented in the next section.

BOUNDARY DISCUSSION:

The Habitat Protection Area boundary encompasses the habitat of Single-headed Pussytoes and contiguous slopes. Pursuant to the Critical Area Criteria, Habitat Protection Areas for State-listed species are to be protected from development activities and disturbances "...unless it can be shown that these activities or disturbances will not have or cause adverse impacts on these habitats" (14.15.09.03.C.(2)(a)). To assure adequate enforcement of this provision, each proposed activity or disturbance should be reviewed on a site-by-site basis.

Since the site is comprised of steep slopes contiguous with the minimum 100-foot limit of the Critical Area Buffer, the latter must be expanded to include the entire Habitat Protection Area. The following activities are specifically allowed by the Criteria in portions of Habitat Protection Areas in the Buffer, assuming rare and endangered species are not affected detrimentally:

- Hunting
- Fishing
- Trapping
- Educational Pursuits
- Scientific observation
- Non-commercial, passive recreation; e.g.,
 - Hiking
 - Nature photography [14.15.10.N]
- Cutting of trees for personal use, if
 - replaced on an equal basis and
 - does not impair water quality or
 - habitat value [14.15.09.01.C(5)c]
- Individual private piers installed and
 - maintained by the riparian
 - landowner [14.15.03.01.C]

Public beaches, launching and docking facilities, fishing piers if 5 requirements are met [14.15.03.08]

One subdivision-owned slip, pier, or mooring buoy per 300 feet of shoreline [14.15.03.07]

Water-dependent research facilities [14.15.03.09]

Commercial water-dependent fisheries facilities [14.15.03.10]

The following activities are specifically disallowed in portions of Habitat Protection Areas inside the Buffer:

Development activities, including structures, roads, parking areas and other impervious surfaces, mining and related facilities, or septic systems
EXCEPT: Activities associated with acceptable water-dependent facilities [14.15.09.01.C]

Industrial and port-related facilities, and non-public marinas [14.15.03.05 and .06]

Bridges and utilities unless no feasible alternative exists [14.15.02.04.C(1)(b)]

Dredged spoil disposal except for:

- a. backfill for permitted shore erosion protection structures
- b. use in approved vegetated shore erosion projects
- c. placement on previously approved channel maintenance spoil disposal areas
- d. beach nourishment [14.15.03.04(7)]

Clearing of existing natural vegetation except

- a. to provide access to private piers
- b. to install or construct a legally permitted shore protection device or measure
- c. to install or construct a legally permitted water-dependent facility [14.15.09.01.C(4)(e) & (5)(c)]

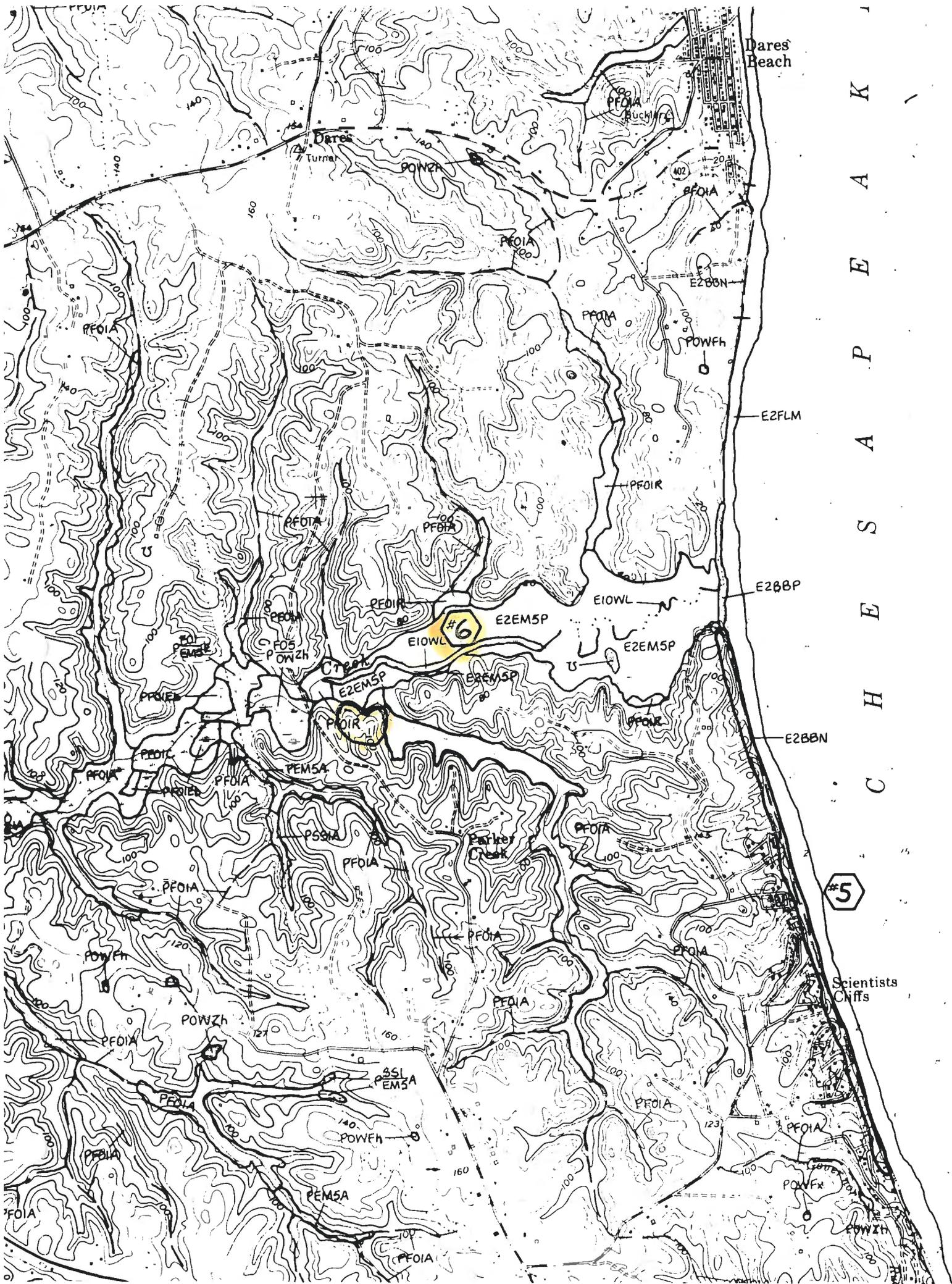
Farming activities, including the grazing of livestock [14.15.09.01.C(4)(F)]

Commercial harvesting of trees [14.15.09.01.C(5)(a)].

SITE DESCRIPTION SUMMARY:

The site is a steep, north-facing hillside which joins Parker Creek marsh. The site is forested with a second-growth Oak/Beech Forest community. The forest canopy layer is characterized by American Beech (Fagus grandifolia) and Chestnut Oak (Quercus prinus), the subcanopy by American Beech and Red Maple (Acer rubrum), and the shrub layer by Mountain Laurel (Kalmia latifolia) and American Holly (Ilex opaca). Around the Single-headed Pussytoes plants, the herb layer is characterized by White Wood Aster (Aster divaricatus), Christmas Fern (Polystichum acrosticoides), and Maple-leaved Viburnum (Viburnum acerifolium).

(August 1987)



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Plum Point
(Critical Area Site CT L-7)

County: Calvert

USGS Quad: Prince Frederick

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

The site supports the globally rare Northeastern Beach Tiger-Beetle (Cicindela dorsalis). This species is listed by the State as Endangered, and it is a candidate for listing by the Federal government as Endangered.

ELEMENT SUMMARY TABLE:

| <u>Element</u> | <u>Common Name</u> | <u>Status</u> |
|---------------------------|------------------------------------|---------------|
| <u>Cicindela dorsalis</u> | Northeastern Beach Tiger-Beetle | Endangered |

OTHER VALUES AND SIGNIFICANCE:

Cliffs at the site date back to the Miocene. They are, therefore, popular to amateur and professional fossil researchers.

THREATS AND MANAGEMENT NEEDS:

Threats

The Puritan Tiger-Beetle is directly dependent upon bare cliff faces for life-cycle completion. Since natural erosion of cliff faces precludes vegetation establishment, shoreline stabilization structures could be detrimental if cliff stabilization and plant colonization ensue. Planting vegetation on cliff faces would destroy habitat directly, and clearing of vegetation above cliffs could result in excessive erosion of cliff faces, destroying individuals or habitat, or both.

Since the Northeastern Beach Tiger-Beetle completes its life cycle on the beach, subpopulations could be destroyed during construction of shoreline stabilization structures. In addition, the amount of suitable habitat could be reduced if beach loss ensues. This species is also susceptible to heavy beach traffic; excessive foot and vehicular traffic have been linked to population declines and extirpation.

Management Needs

Neither the shoreline nor cliffs should be stabilized. At least a 100-foot strip of natural forest should be designated along the edge of cliffs. Off-road vehicles should not be allowed on the beach, and foot traffic should be restricted to small groups.

BOUNDARY DISCUSSION:

The entire site falls inside the Critical Area Buffer since the cliffs are "sensitive areas" contiguous with the minimum 100-foot limit of the Buffer (14.15.09.01.C(7)), and the Buffer must be expanded four feet for every one percent of slope for contiguous slopes of 15 percent or greater.

The following activities are specifically allowed by the Criteria in portions of Habitat Protection Areas in the Buffer, assuming rare and endangered species are not affected detrimentally:

- Hunting
- Fishing
- Trapping
- Educational Pursuits
- Scientific observation
- Non-commercial, passive recreation; e.g.,
 - Hiking
 - Nature photography [14.15.10.N]
- Cutting of trees for personal use, if replaced on an equal basis and does not impair water quality or habitat value [14.15.09.01.C(5)c]
- Individual private piers installed and maintained by the riparian landowner [14.15.03.01.C]
- Public beaches, launching and docking facilities, fishing piers if 5 requirements are met [14.15.03.08]
- One subdivision-owned slip, pier, or mooring buoy per 300 feet of shoreline [14.15.03.07]
- Water-dependent research facilities [14.15.03.09]
- Commercial water-dependent fisheries facilities [14.15.03.10]

The following activities are specifically disallowed in portions of Habitat Protection Areas inside the Buffer:

Development activities, including structures, roads, parking areas and other impervious surfaces, mining and related facilities, or septic systems

EXCEPT: Activities associated with acceptable water-dependent facilities [14.15.09.01.C]

Industrial and port-related facilities, and non-public marinas [14.15.03.05 and .06]

Bridges and utilities unless no feasible alternative exists [14.15.02.04.C(1)(b)]

Dredged spoil disposal except for:

- a. backfill for permitted shore erosion protection structures
- b. use in approved vegetated shore erosion projects
- c. placement on previously approved channel maintenance spoil disposal areas
- d. beach nourishment [14.15.03.04(7)]

Clearing of existing natural vegetation except

- a. to provide access to private piers
- b. to install or construct a legally permitted shore protection device or measure
- c. to install or construct a legally permitted water-dependent facility [14.15.09.01.C(4)(e) & (5)(c)]

Farming activities, including the grazing of livestock [14.15.09.01.C(4)(F)]

Commercial harvesting of trees [14.15.09.01.C(5)(a)].

In addition to the above provisions, Habitat Protection Areas for State-listed species are to be protected from development activities and disturbances "...unless it can be shown that these activities or disturbances will not have or cause adverse impacts on these habitats" (14.15.09.03.C.(2)(a)). To assure adequate enforcement of this provision, each proposed activity or disturbance should be reviewed on a site-by-site basis.

(August, 1987)

North Beach Marshes
(Critical Area Site CT L-8/AA L-10)

Counties: Anne Arundel
Calvert

USGS Quad: North Beach

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

The site is a tidal wetland supporting the Endangered Long-Awned Diplanthe (Leptochloa fascicularis). Before its discovery at this site in 1987, this species was thought to have been extirpated from the State.

ELEMENT SUMMARY TABLE:

| <u>Element</u> | <u>Common Name</u> | <u>Status</u> |
|--------------------------------|----------------------|---------------|
| <u>Leptochloa fascicularis</u> | Long-Awned Diplanthe | Endangered |

OTHER VALUES AND SIGNIFICANCE:

Tidal marshes have long been recognized as very valuable plant and wildlife habitat. They provide fish spawning and nursery areas and regularly provide detritus to the estuarine food web. In addition, tidal marshes inhibit shoreline erosion, help maintain estuarine water quality, and play an essential role in nutrient cycling.

THREATS AND MANAGEMENT NEEDS:

Excessive upland runoff appears to be a potential threat. Maintenance of a naturally vegetated, forested buffer around the tidal marsh should help preclude this concern. In addition, installation of new point-source pollution devices would raise important questions of direct and indirect impacts to the Endangered species and its habitat. However, adherence to the intent and specific provisions of the Critical Area Criteria should preclude these and other concerns. Specific provisions are discussed in the next section.

BOUNDARY DISCUSSION:

Since the Habitat Protection Area boundary is 100 feet from the edge of tidal wetlands, the entire Area falls inside the Critical Area Buffer.

The following activities are specifically allowed by the Criteria in portions of Habitat Protection Areas in the Buffer, assuming rare and endangered species are not affected detrimentally:

Hunting
Fishing
Trapping
Educational Pursuits
Scientific observation
Non-commercial, passive recreation; e.g.,
 Hiking
 Nature photography [14.15.10.N]

Cutting of trees for personal use, if replaced on an equal basis and does not impair water quality or habitat value [14.15.09.01.C(5)c]

Individual private piers installed and maintained by the riparian landowner [14.15.03.01.C]

Public beaches, launching and docking facilities, fishing piers if 5 requirements are met [14.15.03.08]

One subdivision-owned slip, pier, or mooring buoy per 300 feet of shoreline [14.15.03.07]

Water-dependent research facilities [14.15.03.09]

Commercial water-dependent fisheries facilities [14.15.03.10]

The following activities are specifically disallowed in portions of Habitat Protection Areas inside the Buffer:

Development activities, including structures, roads, parking areas and other impervious surfaces, mining and related facilities, or septic systems
 EXCEPT: Activities associated with acceptable water-dependent facilities [14.15.09.01.C]

Industrial and port-related facilities, and non-public marinas [14.15.03.05 and .06]

Bridges and utilities unless no feasible alternative exists [14.15.02.04.C(1)(b)]

Dredged spoil disposal except for:

- a. backfill for permitted shore erosion protection structures
- b. use in approved vegetated shore erosion projects
- c. placement on previously approved channel maintenance spoil disposal areas
- d. beach nourishment [14.15.03.04(7)]

Clearing of existing natural vegetation except

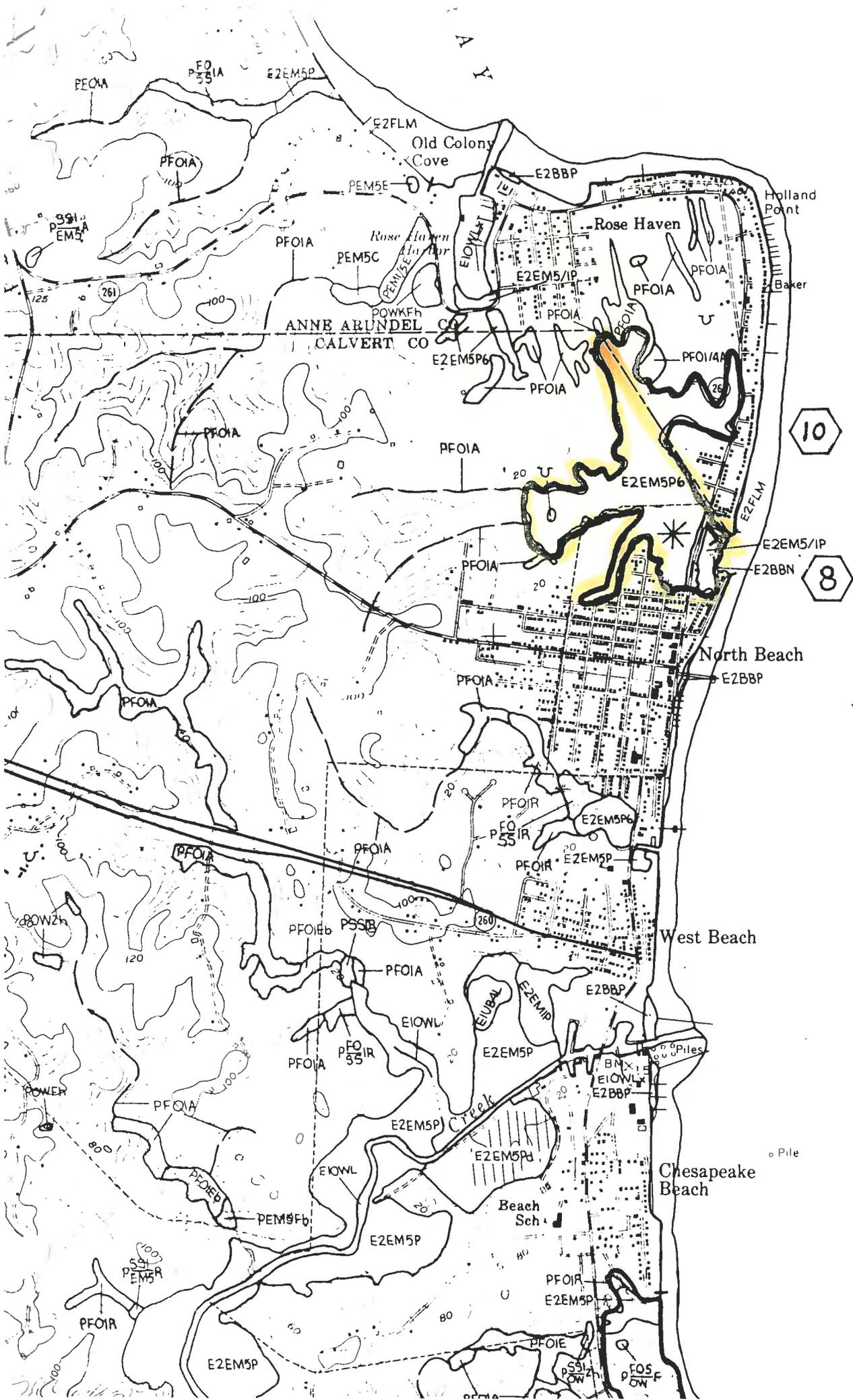
- a. to provide access to private piers
- b. to install or construct a legally permitted shore protection device or measure
- c. to install or construct a legally permitted water-dependent facility [14.15.09.01.C(4)(e) & (5)(c)]

Farming activities, including the grazing of livestock [14.15.09.01.C(4)(F)]

Commercial harvesting of trees [14.15.09.01.C(5)(a)].

In addition to the above provisions, Habitat Protection Areas for State-listed species are to be protected from development activities and disturbances "...unless it can be shown that these activities or disturbances will not have or cause adverse impacts on these habitats" (14.15.09.03.C.(2)(a)). To assure adequate enforcement of this provision, each proposed activity or disturbance should be reviewed on a site-by-site basis.

(November 1988)



Patuxent Highlands
(Critical Area Site CT L-9)

County: Calvert

USGS Quad: Lower Marlboro

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

Wetlands at the base of a ravine system harbor an Endangered plant species, Lake Bank Sedge (Carex lacustris). Historical records indicate that this species has always been rare in the State. In addition, this site is near the northern extreme of its range, and the nonacidic wetland habitat that this species requires is rare in Maryland.

ELEMENT SUMMARY TABLE

| <u>Element Name</u> | <u>Common Name</u> | <u>Status</u> |
|------------------------|--------------------|---------------|
| <u>Carex lacustris</u> | Lake Bank Sedge | Endangered |

OTHER VALUES OF SIGNIFICANCE:

The ravine system is a natural filter for upland runoff and it is important in flood control. In addition, it provides habitat for game and non-game species, and the wetlands are a source of detritus for the estuarine food web.

THREATS AND MANAGEMENT NEEDS:

Commercial harvesting of timber may be the primary immediate threat. Logging, except for personal use, should be avoided since the entire Habitat Protection Area is comprised of hydric soils, steep slopes, and highly erodible soils. These and other concerns should be precluded by adherence to the intent and specific provisions of the Critical Area Criteria. Although most of the site extends beyond the Critical Area, application of the Criteria to the entire area is recommended.

BOUNDARY RECOMMENDATIONS:

The Habitat Protection Area encompasses the ravine system which is comprised of wetlands, steep slopes, and highly erodible soils, plus a 100-foot strip of upland vegetation beginning at the upland limit of hydric and highly erodible soils, and where slopes fall below 15 %. Since the ravine system is comprised of "sensitive areas" which are contiguous with the minimum 100-foot

limit of the Critical Area Buffer, the latter must be expanded to include it.

The following activities are specifically allowed by the Criteria in portions of Habitat Protection Areas in the Buffer, assuming rare and endangered species are not affected detrimentally:

- Hunting
- Fishing
- Trapping
- Educational Pursuits
- Scientific observation
- Non-commercial, passive recreation; e.g.,
 - Hiking
 - Nature photography [14.15.10.N]

- Cutting of trees for personal use, if replaced on an equal basis and does not impair water quality or habitat value [14.15.09.01.C(5)c]

- Individual private piers installed and maintained by the riparian landowner [14.15.03.01.C]

- Public beaches, launching and docking facilities, fishing piers if 5 requirements are met [14.15.03.08]

- One subdivision-owned slip, pier, or mooring buoy per 300 feet of shoreline [14.15.03.07]

- Water-dependent research facilities [14.15.03.09]

- Commercial water-dependent fisheries facilities [14.15.03.10]

The following activities are specifically disallowed in portions of Habitat Protection Areas inside the Buffer:

- Development activities, including structures, roads, parking areas and other impervious surfaces, mining and related facilities, or septic systems
EXCEPT: Activities associated with acceptable water-dependent facilities [14.15.09.01.C]

- Industrial and port-related facilities, and non-public marinas [14.15.03.05 and .06]

Bridges and utilities unless no feasible alternative exists [14.15.02.04.C(1)(b)]

Dredged spoil disposal except for:

- a. backfill for permitted shore erosion protection structures
- b. use in approved vegetated shore erosion projects
- c. placement on previously approved channel maintenance spoil disposal areas
- d. beach nourishment [14.15.03.04(7)]

Clearing of existing natural vegetation except

- a. to provide access to private piers
- b. to install or construct a legally permitted shore protection device or measure
- c. to install or construct a legally permitted water-dependent facility [14.15.09.01.C(4)(e) & (5)(c)]

Farming activities, including the grazing of livestock [14.15.09.01.C(4)(F)]

Commercial harvesting of trees [14.15.09.01.C(5)(a)].

In addition to the above provisions, Habitat Protection Areas for State-listed species are to be protected from development activities and disturbances "...unless it can be shown that these activities or disturbances will not have or cause adverse impacts on these habitats" (14.15.09.03.C.(2)(a)). To assure adequate enforcement of this provision, each proposed activity or disturbance should be reviewed on a site-by-site basis.

SITE DESCRIPTION SUMMARY:

Within this 128-acre Habitat Protection Area, three ravines drain into wetlands that harbor an Endangered plant species. Sycamore, Tulip Tree, and Sweet Gum dominate the wetlands canopy. Spicebush is abundant in the shrub layer. In areas that have been disturbed, greenbrier and non-native, weedy species are encroaching. Water flows from the wetlands directly into the Patuxent River.

Adjacent uplands are dominated by Beech and Tulip Tree. Mountain Laurel is common in some areas. Virginia Pine is present where clearing occurred. Unstable soils are eroding on a slope that was disturbed by a selective timber harvest more than 15 years ago. Abandoned houses are present on the upland along the Patuxent River just north of the wetlands. The Patuxent River forms the western edge of the protection area. Cultivated fields border the protection area to the east and northwest. To the south is forested land.

(December 1988)

Camp Roosevelt Cliffs Natural Heritage Area
(Critical Area Site CT NHA-10)

County: Calvert

USGS Quad: Cove Point

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

The site supports two globally rare species of Tiger-beetles, the Northeastern Beach Tiger-Beetle (Cicindela dorsalis) and the Puritan Tiger-Beetle (Cicindela puritana). Both species are listed by the State as Endangered, and both are candidates for Federal listing.

ELEMENT SUMMARY TABLE:

| <u>Element Name</u> | <u>Common Name</u> | <u>Status</u> |
|---------------------------|---------------------------------|---------------|
| <u>Cicindela dorsalis</u> | Northeastern Beach Tiger-Beetle | Endangered |
| <u>Cicindela puritana</u> | Puritan Tiger-Beetle | Endangered |

OTHER VALUES AND SIGNIFICANCE:

An historical record exists for the Southeastern Shrew (Sorex longirostris), a Species in Need of Conservation. Cliffs at the site date back to the Miocene. They are, therefore, popular for amateur and professional fossil researchers.

THREATS AND MANAGEMENT NEEDS:

Threats

The Puritan Tiger-Beetle is directly dependent upon bare cliff faces for life-cycle completion. Since natural erosion of cliff faces precludes vegetation establishment, shoreline stabilization structures could be detrimental if cliff stabilization and plant colonization ensue. Planting vegetation on cliff faces would destroy habitat directly, and clearing of vegetation above cliffs could result in excessive erosion of cliff faces, destroying individuals or habitat, or both.

Since the Northeastern Beach Tiger-Beetle completes its life cycle on the beach, subpopulations could be destroyed during construction of shoreline stabilization structures. In addition, the amount of suitable habitat could be reduced if beach loss ensues. This species is also susceptible to heavy beach traffic;

excessive foot and vehicular traffic have been linked to population declines and extirpation.

Management Needs

Neither the shoreline nor cliffs should be stabilized. At least a 100-foot strip of natural forest should be designated along the edge of cliffs. Off-road vehicles should not be allowed on the beach, and foot traffic should be restricted to small groups.

BOUNDARY DISCUSSION:

The Habitat Protection Area boundary for the Tiger-Beetles includes the beaches and cliffs, and a 100-foot naturally vegetated strip along the edge of cliffs. The latter is needed to minimize impacts caused by upland disturbances and to allow natural processes to continue to control beach and cliff morphologies.

The entire Habitat Protection Area for State-listed species falls inside the Critical Area Buffer since the cliffs are "sensitive areas" contiguous with the minimum 100-foot limit of the Buffer (14.15.09.01.C(7)), and the Buffer must be expanded four feet for every one percent of slope for contiguous slopes of 15 percent or greater.

The following activities are specifically allowed by the Criteria in portions of Habitat Protection Areas in the Buffer, assuming rare and endangered species are not affected detrimentally:

- Hunting
- Fishing
- Trapping
- Educational Pursuits
- Scientific observation
- Non-commercial, passive recreation; e.g.,
 - Hiking
 - Nature photography [14.15.10.N]

- Cutting of trees for personal use, if replaced on an equal basis and does not impair water quality or habitat value [14.15.09.01.C(5)c]

- Individual private piers installed and maintained by the riparian landowner [14.15.03.01.C]

- Public beaches, launching and docking facilities, fishing piers if 5 requirements are met [14.15.03.08]

One subdivision-owned slip, pier, or mooring buoy per
300 feet of shoreline [14.15.03.07]

Water-dependent research facilities [14.15.03.09]

Commercial water-dependent fisheries facilities
[14.15.03.10]

The following activities are specifically disallowed in
portions of Habitat Protection Areas inside the Buffer:

Development activities, including structures, roads,
parking areas and other impervious surfaces, mining
and related facilities, or septic systems

EXCEPT: Activities associated with
acceptable water-dependent facilities
[14.15.09.01.C]

Industrial and port-related facilities, and non-public
marinas [14.15.03.05 and .06]

Bridges and utilities unless no feasible alternative
exists [14.15.02.04.C(1)(b)]

Dredged spoil disposal except for:

- a. backfill for permitted shore erosion protection
structures
- b. use in approved vegetated shore erosion
projects
- c. placement on previously approved channel
maintenance spoil disposal areas
- d. beach nourishment [14.15.03.04(7)]

Clearing of existing natural vegetation except

- a. to provide access to private piers
- b. to install or construct a legally permitted
shore protection device or measure
- c. to install or construct a legally permitted
water-dependent facility [14.15.09.01.C(4)(e)
& (5)(c)]

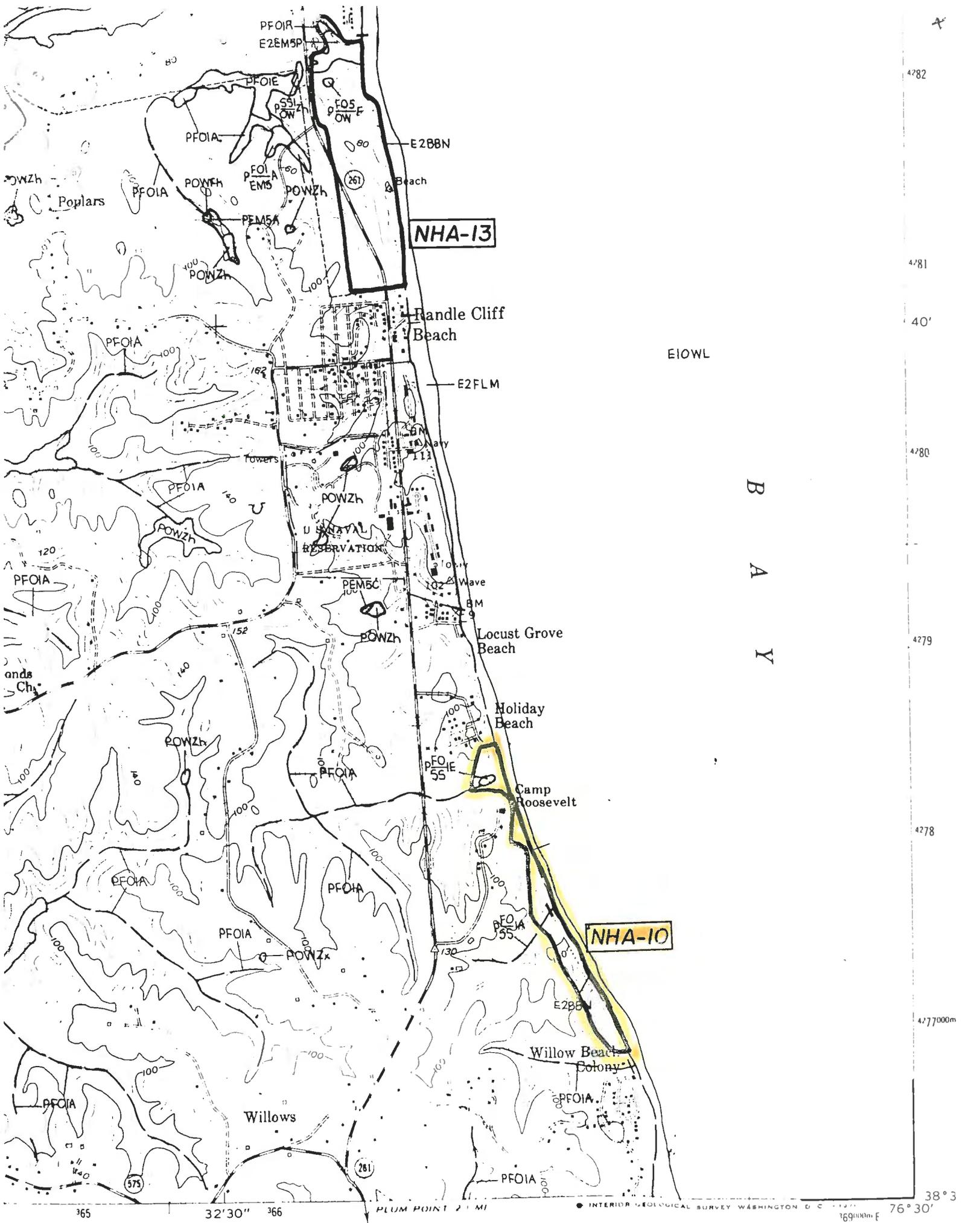
Farming activities, including the grazing of livestock
[14.15.09.01.C(4)(F)]

Commercial harvesting of trees [14.15.09.01.C(5)(a)].

In addition to the above provisions, Habitat Protection Areas for State-listed species are to be protected from development activities and disturbances "...unless it can be shown that these activities or disturbances will not have or cause adverse impacts on these habitats" (14.15.09.03.C.(2)(a)). To assure adequate enforcement of this provision, each proposed activity or disturbance should be reviewed on a site-by-site basis.

The Natural Heritage Area is also a type of Habitat Protection Area. According to 14.15.09.04.C(2)(b)(vii), Natural Heritage Areas are to be protected from alteration due to development activities or cutting or clearing so that the structure and composition of the areas are maintained. As with State-listed species, this provision should be enforced on a case-by-case basis.

(August, 1987)



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Cove Point Marsh Natural Heritage Area
(Critical Area Site CT NHA-11)

County: Calvert

USGS Quad: Cove Point

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

Cove Point Marsh Natural Heritage Area provides habitat for five rare and endangered species. The beach supports the Endangered Northeastern Beach Tiger-Beetle (Cicindela dorsalis), and cliffs support the Endangered Puritan Tiger-Beetle (Cicindela puritana). Both species are globally rare and both have been proposed for listing as Endangered by the Federal government. Tidal wetlands support the Long-Awned Diplanche (Leptochloa fascicularis), an Endangered plant species believed in 1987 to have been extirpated from Maryland. The Bald Eagle (Haliaeetus leucocephalus) utilizes aquatic and terrestrial habitats for feeding and nesting. The Atlantic Sturgeon (Acipenser oxyrhynchus), a regionally rare fish, has been verified directly offshore.

ELEMENT SUMMARY TABLE:

| <u>Element Name</u> | <u>Common Name</u> | <u>Status</u> |
|-------------------------------------|------------------------------------|-----------------|
| <u>Cicindela dorsalis</u> | Northeastern Beach Tiger-Beetle | Endangered |
| <u>Cicindela puritana</u> | Puritan Tiger-Beetle | Endangered |
| <u>Haliaeetus leucocephalus</u> | Bald Eagle | Endangered |
| <u>Leptochloa fascicularis</u> | Long-Awned Diplanche | Endangered |
| <u>Acipenser oxyrhynchus</u> | Atlantic Sturgeon | Regionally Rare |

OTHER VALUES AND SIGNIFICANCE:

An historical record exists for the Shoreline Sedge (Carex hyalinolepis), a plant species Endangered in Maryland. The Area is heavily used by shorebirds, osprey, colonial waterbirds, and waterfowl because of the juxtaposition of Bay, beach, and tidal wetlands. Wetlands are also important as natural filters of upland runoff, erosion buffers, flood assimilators, and producers of detritus.

THREATS AND MANAGEMENT NEEDS:

Threats

The Puritan Tiger-Beetle is directly dependent upon bare cliff faces for life-cycle completion. Since natural erosion of cliff faces precludes vegetation establishment, shoreline stabilization structures could be detrimental if cliff stabilization and plant colonization ensue. Planting vegetation on cliff faces would destroy habitat directly, and clearing of vegetation above cliffs could result in excessive erosion of cliff faces, destroying individuals or habitat, or both.

Since the Northeastern Beach Tiger-Beetle completes its life cycle on the beach, subpopulations could be destroyed during construction of shoreline stabilization structures. In addition, the amount of suitable habitat could be reduced if beach loss ensues. This species is also susceptible to heavy beach traffic; excessive foot and vehicular traffic have been linked to population declines and extirpation.

Long-Awned Diplanthe could be adversely affected by changes in wetland hydrology. In addition, it would not be able to compete with Giant Reed (Phragmites australis), an exotic wetland species currently spreading in the Marsh.

Management Needs

For Tiger-Beetle protection, neither shoreline nor cliffs should be stabilized. At least a 100-foot strip of natural forest should be designated along the edge of cliffs. Off-road vehicles should not be allowed on the beach, and foot traffic should be restricted to small groups.

The Giant Reed population should be monitored for excessive expansion. An Integrated Pest Management strategy should be formulated and implemented whenever necessary.

BOUNDARY DISCUSSION:

The Natural Heritage Area boundary is also the Habitat Protection Area boundary for State-listed species. The great majority of the Natural Heritage Area, also a type of Habitat Protection Area, falls inside the Critical Area Buffer, since it is comprised mostly of "sensitive areas" [14.15.09.01.C(7)] contiguous with the minimum 100-foot limit of the Buffer. Sensitive areas include beach, wetlands, cliffs (steep slopes), and a 100-foot strip of vegetation above the cliffs.

The following activities are specifically allowed by the Criteria in portions of Habitat Protection Areas in the Buffer, assuming rare and endangered species are not affected detrimentally:

- Hunting
- Fishing
- Trapping
- Educational Pursuits
- Scientific observation
- Non-commercial, passive recreation; e.g.,
 - Hiking
 - Nature photography [14.15.10.N]

- Cutting of trees for personal use, if replaced on an equal basis and does not impair water quality or habitat value [14.15.09.01.C(5)c]

- Individual private piers installed and maintained by the riparian landowner [14.15.03.01.C]

- Public beaches, launching and docking facilities, fishing piers if 5 requirements are met [14.15.03.08]

- One subdivision-owned slip, pier, or mooring buoy per 300 feet of shoreline [14.15.03.07]

- Water-dependent research facilities [14.15.03.09]

- Commercial water-dependent fisheries facilities [14.15.03.10]

The following activities are specifically disallowed in portions of Habitat Protection Areas inside the Buffer:

- Development activities, including structures, roads, parking areas and other impervious surfaces, mining and related facilities, or septic systems
 - EXCEPT: Activities associated with acceptable water-dependent facilities [14.15.09.01.C]

- Industrial and port-related facilities, and non-public marinas [14.15.03.05 and .06]

- Bridges and utilities unless no feasible alternative exists [14.15.02.04.C(1)(b)]

Dredged spoil disposal except for:

- a. backfill for permitted shore erosion protection structures
- b. use in approved vegetated shore erosion projects
- c. placement on previously approved channel maintenance spoil disposal areas
- d. beach nourishment [14.15.03.04(7)]

Clearing of existing natural vegetation except

- a. to provide access to private piers
- b. to install or construct a legally permitted shore protection device or measure
- c. to install or construct a legally permitted water-dependent facility [14.15.09.01.C(4)(e) & (5)(c)]

Farming activities, including the grazing of livestock [14.15.09.01.C(4)(F)]

Commercial harvesting of trees [14.15.09.01.C(5)(a)].

In addition to the above provisions, Habitat Protection Areas for State-listed species are to be protected from development activities and disturbances "...unless it can be shown that these activities or disturbances will not have or cause adverse impacts on these habitats" [14.15.09.03.C.(2)(a)]. Natural Heritage Areas are also to be protected from alteration due to development activities or cutting or clearing so that the structure and species composition of the areas are maintained [14,15,09.04.C(2)(b)(vii)]. To assure adequate enforcement of these provisions, each proposed activity or disturbance should be reviewed on a site-by-site basis.

(September 1987)

E2FLN

E2FLM

Rocky Pt

PEOIA

E2EMP

PROIR

PEOIV

NHA-II

PEOIA

E2EMP

E2EMP

Wilbur Pond

EIOWL

E2EMP

E2FLN

Webster Pond

PEOIR

Cove Pt

E2BBP

POWZ

PEOIA

POWZ

PEOIA

E2FLN

COVE POINT HOLLOW

38°22'3

76°22'30"

Flag Ponds Natural Heritage Area
(Critical Area Site CT NHA-12)

County: Calvert

USGS Quad: Cove Point

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

Flag Ponds Natural Heritage Area provides habitat for at least two Endangered species. The beach supports the Northeastern Beach Tiger-Beetle (Cicindela dorsalis), and interdunal freshwater ponds support Star Duckweed (Lemna trisulca). The Tiger-Beetle population is the second-largest in the State, and only one other site exists for Star Duckweed. Steep vegetated as well as bare cliffs, an expansive beach, and an interdunal pond system of forested and non-forested wetlands have resulted in a unique combination of geological, hydrological, and biological features.

ELEMENT SUMMARY TABLE:

| <u>Element Name</u> | <u>Common Name</u> | <u>Status</u> |
|---------------------------|------------------------------------|---------------|
| <u>Cicindela dorsalis</u> | Northeastern Beach Tiger-Beetle | Endangered |
| <u>Lemna trisulca</u> | Star Duckweed | Endangered |

OTHER VALUES AND SIGNIFICANCE:

The Area is heavily used by shorebirds, osprey, colonial waterbirds, and waterfowl because of the juxtaposition of Bay, beach, and non-tidal wetlands. The wetlands are also important as natural filters of upland runoff.

The Area is also very popular for fishing, sunbathing, hiking, birdwatching and other passive recreational activities. Most of it is managed as a park by Calvert County.

THREATS AND MANAGEMENT NEEDS:

Excessive foot-traffic on the beach and shoreline stabilization projects just north of the Area appear to be primary immediate threats. The former could result in a decline of the Tiger-Beetle population since it completes its life cycle on the beach, and population declines in other areas of its range have been linked to excessive foot and vehicular traffic. Stabilization structures just north of the Area, groins and jetties, have caused the beach at the northern tip of the site to erode. Therefore, a major concern is the formation of an inlet along this narrow

section of beach. The latter would salinize the freshwater system of wetlands and result in community changes as well as the loss of Star Duckweed. Construction of additional shoreline structures would probably contribute to this problem unless adequate safeguards and mitigation measures are stringently adhered to. This and other potential threats should be precluded by adherence to the intent and specific provisions of the Critical Area Criteria. Specific provisions are discussed in the next section.

BOUNDARY DISCUSSION:

The Natural Heritage Area boundary is also the Habitat Protection Area boundary for State-listed species. The great majority of the Natural Heritage Area, also a type of Habitat Protection Area, falls inside the Critical Area Buffer since it is comprised mostly of "sensitive areas" [14.15.09.01.C(7)] contiguous with the minimum 100-foot limit of the Buffer. Sensitive areas include beach, wetlands, cliffs (steep slopes), and a 100-foot strip of vegetation above the cliffs.

The following activities are specifically allowed by the Criteria in portions of Habitat Protection Areas in the Buffer, assuming rare and endangered species are not affected detrimentally:

- Hunting
- Fishing
- Trapping
- Educational Pursuits
- Scientific observation
- Non-commercial, passive recreation; e.g.,
 - Hiking
 - Nature photography [14.15.10.N]

- Cutting of trees for personal use, if replaced on an equal basis and does not impair water quality or habitat value [14.15.09.01.C(5)c]

- Individual private piers installed and maintained by the riparian landowner [14.15.03.01.C]

- Public beaches, launching and docking facilities, fishing piers if 5 requirements are met [14.15.03.08]

- One subdivision-owned slip, pier, or mooring buoy per 300 feet of shoreline [14.15.03.07]

- Water-dependent research facilities [14.15.03.09]

Commercial water-dependent fisheries facilities
[14.15.03.10]

The following activities are specifically disallowed in portions of Habitat Protection Areas inside the Buffer:

Development activities, including structures, roads, parking areas and other impervious surfaces, mining and related facilities, or septic systems
EXCEPT: Activities associated with acceptable water-dependent facilities
[14.15.09.01.C]

Industrial and port-related facilities, and non-public marinas [14.15.03.05 and .06]

Bridges and utilities unless no feasible alternative exists [14.15.02.04.C(1)(b)]

Dredged spoil disposal except for:

- a. backfill for permitted shore erosion protection structures
- b. use in approved vegetated shore erosion projects
- c. placement on previously approved channel maintenance spoil disposal areas
- d. beach nourishment [14.15.03.04(7)]

Clearing of existing natural vegetation except

- a. to provide access to private piers
- b. to install or construct a legally permitted shore protection device or measure
- c. to install or construct a legally permitted water-dependent facility [14.15.09.01.C(4)(e) & (5)(c)]

Farming activities, including the grazing of livestock [14.15.09.01.C(4)(F)]

Commercial harvesting of trees [14.15.09.01.C(5)(a)].

In addition to the above provisions, Habitat Protection Areas for State-listed species are to be protected from development activities and disturbances "...unless it can be shown that these activities or disturbances will not have or cause adverse impacts on these habitats" [14.15.09.03.C.(2)(a)]. Natural Heritage Areas are also to be protected from alteration due to development activities or cutting or clearing so that the structure and species composition of the areas are maintained [14.15.09.04.C(2)(b)(vii)]. To assure adequate enforcement of these provisions, each proposed activity or disturbance should be reviewed on a site-by-site basis.

(September 1987)

Randle Cliff Beach Natural Heritage Area
(Critical Area Site CT NHA-13)

County: Calvert

USGS Quad: North Beach

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

Randle Cliff Natural Heritage Area (a) is a unique blend of geological, hydrological, and biological features, (b) is considered to be among the best Statewide examples of its kind, and (c) contains one or more threatened or endangered species. The most outstanding features are the cliffs, uplands, and expansive system of wetlands and associated ravines.

The cliffs along the southern half of the site support the Puritan Tiger-beetle (Cicindela puritana), an Endangered species in Maryland. The expansive system of wetlands and adjoining ravines supports two threatened species, Red Turtlehead (Chelone obliqua) and Glade Fern (Athyrium pycnocarpon), plus an uncommon plant, Whorled Water-pennywort (Hydrocotyle verticillata).

ELEMENT SUMMARY TABLE:

| <u>Element Name</u> | <u>Common Name</u> | <u>Status</u> |
|---------------------------------|-------------------------|---------------|
| <u>Fauna</u> | | |
| <u>Cicindela puritana</u> | Puritan Tiger-beetle | Endangered |
| <u>Flora</u> | | |
| <u>Athyrium pycnocarpon</u> | Glade Fern | Threatened |
| <u>Chelone obliqua</u> | Red Turtlehead | Threatened |
| <u>Hydrocotyle verticillata</u> | Whorled Water-Pennywort | Watch List |

OTHER VALUES AND SIGNIFICANCE:

The vast system of ravines and wetlands serves as a very important natural filter for the Chesapeake Bay. At least 75% of surface runoff in the Natural Heritage Area is filtered by this system.

THREATS AND MANAGEMENT NEEDS:

The uplands area indicated by slash marks on the map has been disturbed by vehicles, foot-traffic, campers, and at least one

quasi-residence. These disturbances have resulted in a large component of the vegetation being dominated by exotic species such as English Ivy and Japanese Honeysuckle. The soil structure also has been damaged in many areas by vehicular use and excessive foot traffic. In addition, the portion of the cliff adjacent to the sandy beach has been damaged by the excavation of small caves and use of the cliff face as a sliding board.

To allow the uplands area to return to its natural state, vehicular use should be prevented. To avoid excessive foot traffic, interpretive trails should be established which direct visitors to less vulnerable portions of uplands. Other management needs should be satisfied by adherence to the Chesapeake Bay Critical Area Criteria, as discussed in the next section.

BOUNDARY DISCUSSION:

The Natural Heritage Area, a type of Habitat Protection Area, was designated by the Secretary of the Department of Natural Resources in June 1987. The most outstanding features are the cliffs, uplands, and expansive system of ravines and associated wetlands.

The Habitat Protection Area for the Endangered Puritan Tiger-beetle (Cicindela puritana) includes intertidal zone, cliff face, and a 100-foot strip of natural forest along the top of the cliff. The latter is essential for protecting the cliff face from upland runoff as well as the spread of exotic species such as Japanese Honeysuckle and English Ivy. In addition, this strip would allow natural erosion of the cliff face during rising sea level and consequent migration landward.

The Habitat Protection Area for the Threatened Red Turtlehead (Chelone obliqua) is comprised of a non-tidal wetland (floodplain), and contiguous ravines and uplands. Habitat for Red Turtlehead is provided by the floodplain and the latter is dependent upon adjacent ravines and uplands for water and nutrients. (Note that part of this and the following Habitat Protection Area extend beyond the Natural Heritage Area).

The Habitat Protection Area for the Threatened Glade Fern (Athyrium pycnocarpon) is comprised of northeast-facing ravines and contiguous uplands between and above the ravines. Habitat for the Glade Fern is provided by the ravines and the latter is dependent upon adjacent uplands for water, nutrients, and for maintenance of a cool, mesic microclimate.

Pursuant to the Critical Area Criteria, protection of Habitat Protection Areas is partially dependent upon the location of the minimum 100-foot Buffer. The Buffer in Randle Cliff is considerably wider than 100 feet because of the presence of

"contiguous sensitive areas" (14.15.09.01C(7)). One contiguous sensitive area is the expansive system of wetlands and associated ravines, which is comprised of hydric soils, steep slopes, and highly erodible soils. Development or disturbance of this system would impact the wetlands and intermittent streams, including populations and habitat of Red Turtlehead and Glade Fern. The other "contiguous sensitive area" is the intertidal zone and cliff face associated with Tiger-beetle habitat. The Buffer must be expanded to include both "contiguous sensitive areas."

The following activities are specifically allowed in portions of Habitat Protection Areas inside the Buffer, assuming rare and endangered species are not adversely affected:

- Hunting
- Fishing
- Trapping
- Educational Pursuits
- Scientific observation
- Non-commercial, passive recreation; e.g.,
 - Hiking
 - Nature photography [14.15.10.N]

- Cutting of trees for personal use, if replaced on an equal basis and does not impair water quality or habitat value [14.15.09.01.C(5)c]

- Individual private piers installed and maintained by the riparian landowner [14.15.03.01.C]

- Public beaches, launching and docking facilities, fishing piers if 5 requirements are met [14.15.03.08]

- One subdivision-owned slip, pier, or mooring buoy per 300 feet of shoreline [14.15.03.07]

- Water-dependent research facilities [14.15.03.09]

- Commercial water-dependent fisheries facilities [14.15.03.10]

The following activities are specifically disallowed in portions of Habitat Protection Areas inside the Buffer, assuming rare and endangered species are not adversely affected:

- Development activities, including structures, roads, parking areas and other impervious surfaces, mining and

related facilities, or septic systems
EXCEPT: Activities associated with
acceptable water-dependent facilities [14.15.09.01.C]

Industrial and port-related facilities, and non-public
marinas [14.15.03.05 and .06]

Bridges and utilities unless no feasible alternative
exists [14.15.02.04.C(1)(b)]

Dredged spoil disposal except for:

- a. backfill for permitted shore erosion protection structures
- b. use in approved vegetated shore erosion projects
- c. placement on previously approved channel maintenance spoil disposal areas
- d. beach nourishment [14.15.03.04(7)]

Clearing of existing natural vegetation except:

- a. to provide access to private piers
- b. to install or construct a legally permitted shore protection device or measure
- c. to install or construct a legally permitted water-dependent facility [14.15.09.01.C(4)(e) & (5)(c)]

Farming activities, including the grazing of livestock
[14.15.09.01.C(4)(F)]

Commercial harvesting of trees [14.15.09.01.C(5)(a)].

Each Habitat Protection Area for a State-listed species also includes a 100-foot strip of undisturbed, natural forest. This strip is essential for protecting the cliff face from excessive runoff and erosion, and for maintaining the cool, mesic microclimate of the ravine system. Even foot trails within these strips could be detrimental to the cliff face and ravine slopes.

Portions of the Natural Heritage Area which lie outside of the Buffer must be protected from alteration due to development activities or cutting or clearing so that the structure and species composition of the areas are maintained (14.15.09.04.C(2)(b)(vii)). To assure this provision is met, proposed activities must be reviewed on a case-by-case basis.

SITE DESCRIPTION SUMMARY:

Two types of cliffs occur along the Chesapeake Bay. The cliff in the northern part of the site is about 50 feet high and is separated from the Bay by a sandy beach. The contiguous cliff to the south rises to about 100 feet and its base is exposed only at low tide.

Between the northern cliff and the northern site boundary, a bayside pond is separated from the Bay by sandy beach. Judging by the presence of Spartina alterniflora, this pond was once a diurnally flooded salt marsh, and continues to be flooded by spring and storm tides. It is now covered by Lemna and Spirodella.

The remainder of the site is comprised of uplands, and a vast system of ravines and non-tidal wetlands. The great majority of the uplands surface area drains into the ravine system. Most of the upland area has a closed tree canopy and well-developed subcanopy and shrub layers.

The system of ravines and non-tidal wetlands is heterogeneous in structure. The system is comprised of both very small and very large ravines. Ravines are oriented in every direction, and bottoms and sides vary from gently sloping to very steep.

(June 1988)

Battle Creek Cypress Swamp
(Critical Area Site CT 0-3)

County: Calvert

USGS Quad: Broomes Island

SUMMARY OF ECOLOGICAL SIGNIFICANCE

Battle Creek Cypress Swamp is one of the best examples of its kind in the State, is the largest and best example on the Western Shore, is one of the northernmost swamps in the United States, and is a designated National Natural Landmark. Natural stands of Bald Cypress are now restricted to this Swamp, Pocomoke River Swamp on the Eastern Shore, and a few scattered small stands.

In 1949, the Pinewoods Tree Frog (Hyla femoralis) was reported in Battle Creek Cypress Swamp. Previously, this species was not known north of the Great Dismal Swamp in Virginia and North Carolina. Historical records also exist for the Threatened Red Turtlehead (Chelone obliqua) and for the Cypress Sphinx (Isoparce cupressii), a moth species not previously known north of South Carolina. A thorough search of the Swamp would undoubtedly result in rediscovery of these species and discovery of new records for other rare and endangered species.

OTHER VALUES AND SIGNIFICANCE

Calvert County has entered into a lease agreement with The Nature Conservancy to utilize a portion of the Swamp for educational and passive recreational purposes. A full-time naturalist, elevated nature trail, and nature center have accommodated these public needs.

The site is also a large complex of tidal and non-tidal wetlands. Besides providing plant and wildlife habitat, these wetlands are important in trapping excessive sediment, chemicals, and nutrient in upland runoff. They are also important in flood control and in providing feeding and spawning areas for fish and other aquatic animals.

THREATS AND MANAGEMENT NEEDS

Timbering of non-tidal wetlands, excessive runoff of pollutants, and residential encroachment represent primary threats for the portion of the site not owned by The Nature Conservancy. However, adherence to the intent and specific provisions of the Chesapeake Bay Critical Area Criteria should preclude these and other concerns. Specific provisions are discussed in the next section.

BOUNDARY DISCUSSION

Almost all of the site falls inside the Critical Area Buffer since the latter must be expanded to include wetlands and steep slopes which are contiguous with the minimum 100-foot limit of the Buffer [14.15.09.01.C(7)]. Only those contiguous upland areas with less than 15% slope do not fall in the Buffer.

The following activities are specifically allowed by the Criteria in portions of Habitat Protection Areas in the Buffer, assuming rare and endangered species are not affected detrimentally:

- Hunting
- Fishing
- Trapping
- Educational Pursuits
- Scientific observation
- Non-commercial, passive recreation; e.g.,
 - Hiking
 - Nature photography [14.15.10.N]

- Cutting of trees for personal use, if replaced on an equal basis and does not impair water quality or habitat value [14.15.09.01.C(5)c]

- Individual private piers installed and maintained by the riparian landowner [14.15.03.01.C]

- Public beaches, launching and docking facilities, fishing piers if 5 requirements are met [14.15.03.08]

- One subdivision-owned slip, pier, or mooring buoy per 300 feet of shoreline [14.15.03.07]

- Water-dependent research facilities [14.15.03.09]

- Commercial water-dependent fisheries facilities [14.15.03.10]

The following activities are specifically disallowed in portions of Habitat Protection Areas inside the Buffer:

- Development activities, including structures, roads, parking areas and other impervious surfaces, mining and related facilities, or septic systems
EXCEPT: Activities associated with

acceptable water-dependent facilities
[14.15.09.01.C]

Industrial and port-related facilities, and non-public
marinas [14.15.03.05 and .06]

Bridges and utilities unless no feasible alternative
exists [14.15.02.04.C(1)(b)]

Dredged spoil disposal except for:

- a. backfill for permitted shore erosion protection structures
- b. use in approved vegetated shore erosion projects
- c. placement on previously approved channel maintenance spoil disposal areas
- d. beach nourishment [14.15.03.04(7)]

Clearing of existing natural vegetation except

- a. to provide access to private piers
- b. to install or construct a legally permitted shore protection device or measure
- c. to install or construct a legally permitted water-dependent facility [14.15.09.01.C(4)(e) & (5)(c)]

Farming activities, including the grazing of livestock
[14.15.09.01.C(4)(F)]

Commercial harvesting of trees [14.15.09.01.C(5)(a)].

(December 1987)

APPENDIX A

Threatened and Endangered Species Regulations

Title 08 DEPARTMENT OF NATURAL RESOURCES

Subtitle 03 WILDLIFE

08.03.08 Threatened and Endangered Species

Authority: Natural Resources Article, §§4-2A-01 — 4-2A-09 and
§§10-2A-01 — 10-2A-09,
Annotated Code of Maryland

Notice of Proposed Action [87-061-P]

The Secretary of Natural Resources proposes to repeal existing Regulations .01 and .02 under COMAR 08.03.08 Nongame and Endangered Species and to adopt new Regulations .01 — .11 under COMAR 08.03.08 Threatened and Endangered Species.

The proposed action does not affect any threatened and endangered species regulation or designations under COMAR 08.02.12 Tidewater Administration. The proposed action includes an increase in the number of wildlife species on the lists and for the first time includes plants. In addition, some species which meet the statutory definition of fish because they spend part of their life cycle in water, namely, amphibians, reptiles, crustaceans, mollusks and only those finfish of the species Blackbanded Sunfish (*Eneacanthus chaetodon*), Maryland Darter (*Etheostoma sellare*), Glassy Darter (*Etheostoma vitreum*), Stripeback Darter (*Percina notogramma*) and Trout-Perch (*Percopsis omiscomaycus*) are added. The latter species are not game or sport fish, therefore, are of no commercial significance. The lists also contain, for the first time, the names of all those species which are federally listed and, therefore, are required by Maryland law to be listed in Maryland.

The criteria for listing and delisting species are set out and the process for petitioning the Department to list and delist a species as allowed by law is specified. The proposal also clarifies how to apply for the various permits which are allowed by law and what factors are considered before they are issued.

Maryland law authorizes the Secretary to prohibit certain acts with respect to threatened and endangered plants in addition to those set out in the statute. The added prohibitions are: taking threatened and endangered plants from private property without the permission of the owner and from State property without the permission of the Director; and exporting, possessing, processing, selling, offering for sale, delivering, carrying, transporting or shipping threatened plant species. The latter acts are already prohibited by statute with respect to endangered plants.

Maryland law also authorizes the Secretary to prohibit by regulation certain acts with respect to all other threatened species besides plants. Since there were no threatened species listed in the previous regulation, there were no additional prohibitions specified; thus, these regulations implement that section of the law for the first time. Included in the added prohibitions is an "incidental taking." This is a taking of a species which is caused by another otherwise lawful act, for example, the killing of a pond dwelling species by filling in a pond for other reasons. The landowner is

required to give the Department 30 days notice before starting any action which would result in an "incidental taking." Within that 30 day time period the Department must either salvage the species or issue a permit for the "incidental take." The other added prohibitions are simply the same acts prohibited by statute with respect to endangered species.

This proposal defines for the first time what criteria are considered for designating Natural Heritage Areas. These Areas are an integral feature of the Critical Areas Criteria (set forth under COMAR 14.15.01 — .11) and by adding this regulation the Department hopes to aid the counties and the Critical Areas Commission in the protection of these Areas. Before Areas are designated the Department will notify all landowners of the proposed designation. There will be maps made available along with other pertinent and useful information. The Department hopes to work out management agreements with the landowners or buy conservation easements for property included in an Area if necessary.

The Critical Areas Criteria rely heavily on the Department's Threatened and Endangered Species Program to aid the counties in determining which species within the Critical Area need protection. The Department has available maps which locate listed species by planning zones and will make all this information as readily available as possible. The Department has always considered cooperative management agreements with private property owners to be the best way to preserve and protect habitat critical to threatened and endangered species, and intends to continue to use these agreements and other mutually agreeable management arrangements as much as possible.

Estimate of Economic Impact

I. Summary of Economic Impact. Administrative costs for units of the Department of Natural Resources will increase in terms of more staff time to address protection of these species, and some land acquisition costs will be incurred. Local governments will bear some costs in addressing protection of the listed species as part of their Critical Areas programs.

| II. Types of Economic Impacts: | Revenue (+) Expense (-) | Amount |
|--|----------------------------|-------------------------|
| A. On issuing agency: | | |
| 1. Increased staff and support for threatened and endangered species Program | (-) | \$193,497 |
| 2. Increased land acquisition staff and support | (-) | \$74,106 |
| 3. Additional acquisition of interests in land | (-) | Indeterminable |
| B. On other State or local agencies affected: | | |
| Local jurisdictions protect threatened and endangered species as part of Critical Areas programs | (-) | \$40,000 — \$100,000 |
| C. On regulated industries or trade groups: | | |
| | NONE | |
| | Benefit (+) Cost (-) | Amount |
| D. On other industries or trade groups affected: | | |
| | NONE | |

hydrologic, or other features which blend together to make this area unique.

(4) A description of all major threats to the continued existence of the area, or if petitioning to delist an area, a description of how the natural features and species composition of the area have changed so it is no longer suitable to be designated as a natural heritage area.

(5) A statement indicating why the area should or should not be considered as among the best statewide examples of its kind.

(6) Other relevant information which might assist the Director in making a determination.

C. All sites used for evidence of current abundance shall be extant and all sitings shall be documented with appropriate vouchers. In a petition to list or delist a species, the following information shall be provided:

(1) A description of the biological distribution of the species in Maryland.

(2) Its life needs and habitat requirements.

(3) Evidence of its decline or evidence that it is more common than previously believed and documented.

(4) All known threats which jeopardize its continued existence.

(5) Other relevant biological and ecological data or other life history information pertinent to its status.

(6) The species shall be presently recognized as a valid species, or infraspecific taxa of regional or national significance. There shall be adequate documentation that it occurs naturally and is permanently established in Maryland.

.03 Permits.

A. Permits to take, transport, possess, sell, offer for sale, export or import any listed species may be obtained from the Director only after written application on a form provided by the Service, and upon payment of a fee of \$25.

B. Each permit shall be subject to an expiration date and other limitations as may be prescribed by the Director.

C. Each permit application requesting permission to take a listed species from private property shall be accompanied by a signed statement from the landowner granting the applicant permission to enter the property to take the species.

D. A permit application shall describe the purpose of the request in such detail that the Director can determine whether it is in the best interest of the species and the State to issue it.

E. The Director shall consider, but not be limited to, the following information:

(1) The number of other known occurrences of the species in the State;

(2) Which of the occurrences of the species in §E(1) exist on:

(a) Private lands;

(b) Public lands; and

(c) What protection there is for the species' continued existence.

(3) The number of individuals in the occurrences of the species in §E(1) and the relative state of ecological stability.

F. Violation of any provision or restriction of the permit shall constitute a violation of this regulation and may result, at the discretion of the Director, in the revocation of the permit and confiscation of the species taken or possessed.

.04 Endangered Species of Wildlife, Reptiles, Amphibians, Mollusks, Crustaceans and Finfish.

A. Listing Criteria. The following factors shall be considered for listing any species other than plants as endangered:

(1) Whether the species is restricted to a minimal geographic area within Maryland;

(2) Whether the species has experienced a rapid, substantial decline in Maryland, and if the decline continues, the species' extirpation from Maryland is imminent;

(3) Whether the species' essential habitat has been rapidly lost and that loss is likely to continue;

(4) Whether the species' biology makes it highly susceptible to changes in its environment; or

(5) Whether the species' essential habitat is easily altered by even relatively minor activities.

B. Permits. The permit procedures to be followed are set forth in Regulation .03. The following apply:

(1) Permits shall be issued only for scientific research designed to enhance the recovery of the species or population.

(2) A person may not take, export, possess, process, sell or offer for sale, deliver, carry, transport, or ship by any means any endangered wildlife, reptile, amphibian, mollusk, crustacean or finfish species except by special permit from the Director.

C. The following wildlife, reptile, amphibian, mollusk, crustacean and finfish species are considered endangered throughout Maryland unless a smaller range is indicated:

(1) Platyhelminthes. A Planarian (*Procotyla typhlops*).

(2) Mollusks. Ancient Floater (*Alasmidonta heterodon*).

(3) Crustaceans.

(a) Dearolf's Cave Amphipod (*Crangonyx dearolfi*);

(b) Greenbriar Cave Amphipod (*Stygobromus emarginatus*);

(c) Shenandoah Cave Amphipod (*Stygobromus gracilipes*).

(4) Insects.

(a) Northeastern Beach Tiger-Beetle (*Cicindela dorsalis*);

(b) Puritan Tiger-Beetle (*Cicindela puritana*);

(c) Six-Banded Longhorn-Beetle (*Dryobius sexnotatus*);

(d) Regal Fritillary (*Speyeria idalia*).

(5) Fish. Maryland Darter (*Etheostoma sellare*).

(6) Amphibians.

(a) Eastern Tiger Salamander (*Ambystoma tigrinum*);

(b) Green Salamander (*Aneides aeneus*);

(c) Hellbender (*Cryptobranchus alleganiensis*);

(d) Eastern Narrow-Mouthed Toad (*Gastrophryne carolinensis*).

(7) Reptiles.

(a) Atlantic Leatherback Turtle (*Dermochelys coriacea*);

(b) Atlantic Hawksbill Turtle (*Eretmochelys imbricata*);

(c) Northern Coal Skink (*Eumeces anthracinus*);

(d) Atlantic Ridley Turtle (*Lepidochelys kempi*);

(e) Mountain Earth Snake (*Virginia valeriae pulchra*).

(8) Birds.

(a) Piping Plover (*Charadrius melodus*);

(b) Peregrine Falcon (*Falco peregrinus*);

(c) Bald Eagle (*Haliaeetus leucocephalus*);

(d) Loggerhead Shrike (*Lanius ludovicianus*);

(e) Bewick's Wren (*Thryomanes bewickii*).

(9) Mammals.

(a) Black Right Whale (*Balaena glacialis*);

(b) Sei Whale (*Balaenoptera borealis*);

(c) Blue Whale (*Balaenoptera musculus*);

(d) Finback Whale (*Balaenoptera physalus*);

- (86) *Clustered Beakrush (Rhynchospora glomerata)*;
- (87) *Drowned Hornedrush (Rhynchospora inundata)*;
- (88) *Torrey's Beakrush (Rhynchospora torreyana)*;
- (89) *Sacciolepis (Sacciolepis striata)*;
- (90) *Sessile-Fruited Arrowhead (Sagittaria rigida)*;
- (91) *Sandbar Willow (Salix exigua)*;
- (92) *Canby's Bulrush (Scirpus etuberculatus)*;
- (93) *Water Clubrush (Scirpus subterminalis)*;
- (94) *Slender Nutrush (Scleria minor)*;
- (95) *Pink Bog-Button (Sclerolepis uniflora)*;
- (96) *Halberd-Leaved Greenbrier (Smilax pseudo-china)*;
- (97) *Red-Berried Greenbrier (Smilax walteri)*;
- (98) *Showy Goldenrod (Solidago speciosa)*;
- (99) *Two-Flowered Bladderwort (Utricularia biflora)*;
- (100) *Fringed Yelloweyed-Grass (Xyris fimbriata)*;
- (101) *Small's Yelloweyed-Grass (Xyris smalliana)*.

.06 Endangered Extirpated Species.

A. Listing Criteria. The following factors shall be considered for listing a species as endangered extirpated:

(1) The species was once a viable component of the State's flora and fauna and there are no records of it naturally occurring in Maryland after 1950; or

(2) The species was once a viable component of the State's flora and fauna and recent scientific investigations have documented the loss of its habitat or disappearance of its population in Maryland.

B. Permits. Upon the discovery of a viable, naturally occurring population of any species in §§C — H, that species will be considered an endangered species and shall require the permits and conditions afforded to that status.

C. The following plant species are considered endangered extirpated throughout Maryland:

- (1) *Pine-Barren Gerardia (Agalinis virgata)*;
- (2) *Rough-Stemmed Wheatgrass (Agropyron trachycalum)*;
- (3) *Golden Colicroot (Alettris aurea)*;
- (4) *Beach Pigweed (Amaranthus pumilus)*;
- (5) *Canada Anemone (Anemone canadensis)*;
- (6) *Great Angelica (Angelica atropurpurea)*;
- (7) *Filmy Angelica (Angelica triquinata)*;
- (8) *Arethusa (Arethusa bulbosa)*;
- (9) *Lake Cress (Armoracia aquatica)*;
- (10) *Bradley's Spleenwort (Asplenium bradleyi)*;
- (11) *Steele's Aster (Aster concinnus)*;
- (12) *Silvery Aster (Aster concolor)*;
- (13) *Showy Aster (Aster spectabilis)*;
- (14) *(Axonopus furcatus)*;
- (15) *Mat-Forming Water-Hyssop (Bacopa stragula)*;
- (16) *Sea Ox-Eye (Borrchia frutescens)*;
- (17) *Triangle Grape-Fern (Botrychium lanceolatum)*;
- (18) *Leathery Grape-Fern (Botrychium multifidum)*;
- (19) *Small Grape-Fern (Botrychium simplex)*;
- (20) *Blue-Hearts (Buchnera americana)*;
- (21) *Great Indian-Plantain (Cacalia muhlenbergii)*;
- (22) *(Carex careyana)*;
- (23) *Cypress-Knee Sedge (Carex decomposita)*;
- (24) *(Carex foenea)*;
- (25) *(Carex glaucescens)*;
- (26) *Lake-Bank Sedge (Carex lacustris)*;
- (27) *New England Sedge (Carex novae-angliae)*;
- (28) *Variable Sedge (Carex polymorpha)*;
- (29) *(Carex striatula)*;
- (30) *(Carex tenera)*;
- (31) *(Carex tetanica)*;
- (32) *Wood's Sedge (Carex woodii)*;

- (33) *Chaffweed (Centunculus minimus)*;
- (34) *Purple Clematis (Clematis occidentalis)*;
- (35) *Curly-Heads (Clematis oroleuca)*;
- (36) *Rose Coreopsis (Coreopsis rosea)*;
- (37) *Pygmyweed (Crassula aquatica)*;
- (38) *Hazel Dodder (Cuscuta coryli)*;
- (39) *(Cyperus plukenetii)*;
- (40) *Showy Ladies'-Slipper (Cypripedium reginae)*;
- (41) *Few-Flowered Tick-Trefoil (Desmodium pauciflorum)*;
- (42) *(Digitaria villosa)*;
- (43) *(Eleocharis halophila)*;
- (44) *Three-Ribbed Spikerush (Eleocharis tricostata)*;
- (45) *Downy Willowherb (Epilobium strictum)*;
- (46) *Seven-Angled Pipewort (Eriocaulon septangulare)*;
- (47) *Tall Rattlesnake Master (Eryngium yuccifolium)*;
- (48) *(Festuca paradoxa)*;
- (49) *Pumpkin Ash (Fraxinus profunda)*;
- (50) *Small Bedstraw (Galium trifidum)*;
- (51) *(Gentiana puberula)*;
- (52) *Sea Milkwort (Glaux maritima)*;
- (53) *Sharp-Scaled Mannagrass (Glyceria acutiflora)*;
- (54) *Dwarf Rattlesnake-Plantain (Goodyera repens)*;
- (55) *Tesselated Rattlesnake-Plantain (Goodyera tessellata)*;
- (56) *(Gratiola ramosa)*;
- (57) *Rough Heuchera (Heuchera villosa)*;
- (58) *Sea-Beach Sandwort (Honkenya peploides)*;
- (59) *Nits-and-Lice (Hypericum drummondii)*;
- (60) *Clasping-Leaved St. John's-Wort (Hypericum gymnanthum)*;
- (61) *Great St. John's-Wort (Hypericum pyramidatum)*;
- (62) *Bloodleaf (Iresine rhizomatosa)*;
- (63) *Small Whorled Pogonia (Isotria medeoloides)*;
- (64) *Small-Headed Rush (Juncus brachycephalus)*;
- (65) *New Jersey Rush (Juncus caesariensis)*;
- (66) *(Juncus megacephalus)*;
- (67) *Bayonet Rush (Juncus militaris)*;
- (68) *Torrey's Rush (Juncus torreyi)*;
- (69) *Common Juniper (Juniperus communis)*;
- (70) *Narrow-Leaved Pinweed (Lechea tenuifolia)*;
- (71) *Catchfly-Grass (Leersia lenticularis)*;
- (72) *Long-Awned Diplanthe (Leptochloa fascicularis)*;
- (73) *Fall Witchgrass (Leptoloma cognatum)*;
- (74) *Scaly Blazing-Star (Liatris squarrosa)*;
- (75) *American Lovage (Ligusticum canadense)*;
- (76) *American Frog's-Bit (Limnolobium spongia)*;
- (77) *Twinflower (Linnaea borealis)*;
- (78) *Florida Yellow Flax (Linum floridanum)*;
- (79) *Heartleaf Twayblade (Listera cordata)*;
- (80) *(Lobelia glandulosa)*;
- (81) *Carolina Clubmoss (Lycopodium carolinianum)*;
- (82) *Large-Flowered Barbara's Buttons (Marshallia grandiflora)*;
- (83) *(Matelea decipiens)*;
- (84) *(Matelea obliqua)*;
- (85) *Broad-Leaved Bunchflower (Melanthium latifolium)*;
- (86) *Nuttall's Micranthemum (Micranthemum micranthemoides)*;
- (87) *Evergreen Bayberry (Myrica heterophylla)*;
- (88) *Thread-Like Naiad (Najas gracillima)*;
- (89) *Northern Panicgrass (Panicum boreale)*;
- (90) *May Grass (Phalaris caroliniana)*;
- (91) *(Phlox carolina)*;

(2) Whether there has been a steady widespread loss of the species' essential habitat; or

(3) Whether the species has been listed as endangered but it has been shown that protection measures taken have significantly reduced the chances of the species becoming extirpated from Maryland.

B. Permits. The permit procedures to be followed are set forth in Regulation .03. The following apply:

(1) Permits shall be issued only for scientific research designed to enhance the recovery of the species or population.

(2) A person may not:

(a) Export, possess, process, sell, offer for sale, deliver, carry, transport, or ship by any means any threatened plant species except by a special permit from the Director;

(b) Take any threatened plant species from State property except by special permit from the Director; and

(c) Take any threatened plant species from private property without the written permission of the landowner.

C. The following plant species are considered threatened throughout Maryland unless a smaller range is indicated:

- (1) Single-Headed Pussetoes (*Antennaria solitaria*);
- (2) Giant Cane (*Arundinaria gigantea*);
- (3) Glade Fern (*Athyrium pycnocarpon*);
- (4) Maryland Bur-Marigold (*Bidens bidentoides*);
- (5) Button Sedge (*Carex bullata*);
- (6) Shoreline Sedge (*Carex hyalinolepis*);
- (7) Inflated Sedge (*Carex vesicaria*);
- (8) Leatherleaf (*Chamaedaphne calyculata*);
- (9) Red Turtlehead (*Chelone obliqua*);
- (10) Goldenseal (*Hydrastis canadensis*);
- (11) Deciduous Holly (*Ilex decidua*);
- (12) Narrow-Leaved Bushclover (*Lespedeza angustifolia*);
- (13) Wild Lupine (*Lupinus perennis*);
- (14) Climbing Fern (*Lygodium palmatum*);
- (15) American Lotus (*Nelumbo lutea*);
- (16) Red Bay (*Persea borbonia*);
- (17) Pale Green Orchis (*Platanthera flava*);
- (18) Purple Fringeless Orchis (*Platanthera peramoena*);
- (19) Spongy Lophotocarpus (*Sagittaria calycina*);
- (20) Engelmann's Arrowhead (*Sagittaria engelmanniana*);
- (21) Northern Pitcher-Plant (*Sarracenia purpurea*);
- (22) Virginia Mallow (*Sida hermaphrodita*);
- (23) Featherbells (*Stenanthium gramineum*);
- (24) Mountain Pimpernel (*Taenidia montana*);
- (25) Steele's Meadowrue (*Thalictrum steeleanum*);
- (26) Kate's-Mountain Clover (*Trifolium virginicum*);
- (27) Dwarf Trillium (*Trillium pusillum*);
- (28) Purple Bladderwort (*Utricularia purpurea*).

.09 Species in Need of Conservation.

A. Listing Criteria. The following factors shall be considered for listing a species as in need of conservation:

(1) Whether the population is limited or declining within Maryland; and

(2) Whether the species may become threatened in the foreseeable future, if current trends or conditions persist.

B. Permits. The permit procedures to be followed are set forth in Regulation .03. The following apply:

(1) Except by special permit, a person may not take, export, possess, process, sell, offer for sale, deliver, carry, transport, or ship by any means any species in need of conservation.

(2) Permits to take species in need of conservation shall be issued only for:

(a) Scientific research designed to enhance the recovery of the species or population;

(b) Other valid scientific research; or

(c) Educational purposes designed to further public awareness regarding the species.

(3) Incidental taking permits are not required for species in need of conservation.

C. The following species are considered to be in need of conservation throughout Maryland unless a smaller range is indicated:

- (1) Insects. King's Hairstreak (*Satyrium kingi*).
- (2) Fish. Blackbanded Sunfish (*Enneacanthus chaetodon*).
- (3) Amphibians. Carpenter Frog (*Rana virgatipes*).
- (4) Reptiles. Map Turtle (*Graptemys geographicala*).
- (5) Birds.
 - (a) Henslow's Sparrow (*Ammodramus henslowii*);
 - (b) Short-Eared Owl (*Asio flammeus*);
 - (c) American Bittern (*Botaurus lentiginosus*);
 - (d) Sedge Wren (*Cistothorus platensis*);
 - (e) Little Blue Heron (*Egretta caerulea*);
 - (f) Common Moorhen (*Gallinula chloropus*);
 - (g) American Oystercatcher (*Haematopus palliatus*);
 - (h) Least Bittern (*Ixobrychus exilis*);
 - (i) Black Rail (*Laterallus jamaicensis*);
 - (j) Swainson's Warbler (*Limnithlypis swainsonii*);
 - (k) Least Tern (*Sterna antillarum*).
- (6) Mammals.
 - (a) Porcupine (*Erethizon dorsatum*);
 - (b) Bobcat (*Lynx rufus*);
 - (c) Least Weasel (*Mustela nivalis*);
 - (d) Small-Footed Bat (*Myotis leibii*);
 - (e) Southeastern Shrew (*Sorex longirostris*).

.10 Natural Heritage Areas.

A. Listing Criteria. In order to qualify as a natural heritage area a natural community shall:

(1) Contain one or more threatened or endangered species or wildlife species in need of conservation;

(2) Be a unique blend of geological, hydrological, climatological or biological features; and

(3) Be considered to be among the best Statewide examples of its kind.

B. The Forest, Park and Wildlife Service shall prepare maps describing the location of all natural heritage areas. The maps shall be filed in the office of the Director of the Forest, Park and Wildlife Service, Department of Natural Resources, Tawes State Office Building, Annapolis, MD 21401.

C. The following areas are designated natural heritage areas:

- (1) Kasecamp Shale Barrens Allegany County;
- (2) Maple Run Allegany County;
- (3) Outdoor Club Shale Barrens Allegany County;
- (4) Sideling Hill Creek . . Allegany, Washington County;
- (5) Cypress Creek Swamp Anne Arundel County;
- (6) Eagle Hill Bog Anne Arundel County;
- (7) Upper Patuxent Marshes . . Anne Arundel, Prince George's County;
- (8) Black Marsh Baltimore County;
- (9) Robert E. Lee Park Baltimore County;
- (10) Camp Roosevelt Cliffs Calvert County;
- (11) Cove Point Marsh Calvert County;
- (12) Flag Ponds Calvert County;
- (13) Randle Cliff Beach Calvert County;

For information concerning Final Action on Regulations, see inside front cover.

Symbol Key

Roman type indicates text already existing at the time of the proposed action. *Italic type* indicates new text added at the time of proposed action. A single underline indicates text added at the time of final action. [Single brackets] indicate deleted text. [[Double brackets]] indicate text deleted at the time of final action.

Title 07 DEPARTMENT OF HUMAN RESOURCES

Subtitle 03 INCOME MAINTENANCE ADMINISTRATION

07.03.05 General Public Assistance to Em- ployables

Authority: Article 88A, §§17, 17A-1 — 17A-3, 65B,
Annotated Code of Maryland

Notice of Final Action [87-110-F]

On May 26, 1987, the Secretary of Human Resources adopted amendments to Regulations .09 and .11 under COMAR 07.03.05 General Public Assistance to Employables. These amendments, which were proposed for adoption in 14:8 Md. R. 941 (April 10, 1987), have been adopted as proposed. (DHR Transmittal Number 87-12)

Effective Date: June 29, 1987.

RUTH MASSINGA
Secretary of Human Resources

Title 08 DEPARTMENT OF NATURAL RESOURCES

Subtitle 03 WILDLIFE

08.03.08 Threatened and Endangered Species

Authority: Natural Resources Article, §§ 4-2A-01 — 4-2A-09,
10-2A-01 — 10-2A-09,
Annotated Code of Maryland

Notice of Final Action [87-061-F]

On June 9, 1987, new Regulations .01 — .11 under a new chapter, COMAR 08.03.08 Threatened and Endangered Species, were adopted by the Secretary of Natural Resources. Existing Regulations .01 and .02 under COMAR 08.03.08 Nongame and Endangered Species were repealed. These actions, which were proposed for adoption in

14:6 Md. R. 719 — 726 (March 13, 1987), have been adopted as proposed.

Effective Date: June 29, 1987.

TORREY C. BROWN, M.D.
Secretary of Natural Resources

Subtitle 05 WATER RESOURCES ADMINISTRATION

08.05.03 Construction on Non-Tidal Waters and Floodplains

Authority: Natural Resources Article, §§8-801 — 8-814,
Annotated Code of Maryland

Notice of Final Action [87-060-F]

On June 9, 1987, amendments to Regulation .03 under COMAR 08.05.03 Construction on Non-Tidal Waters and Floodplains, were adopted by the Secretary of Natural Resources. These amendments, which were proposed for adoption in 14:6 Md. R. 726 — 728 (March 13, 1987), have been adopted with the non-substantial changes shown below.

Effective Date: June 29, 1987.

Attorney General's Certification

In accordance with State Government Article, §10-113, Annotated Code of Maryland, the Attorney General certifies that the following changes do not differ substantively from the proposed text. The nature of each change and the basis for this conclusion are as follow:

Regulation .03D(3)(b): The new language is added to restate the fact that tidal floodplains are not covered by this regulation and precludes any misunderstanding by prospective applicants on this issue. The State's regulatory authority pursuant to Natural Resources Article, Title 8, is specifically limited to the 100-year floodplain of free flowing streams and does not encompass federally designated tidal special flood hazard areas. Regulation .03 restates this limitation on the State's jurisdiction.

.03 Requirements for a Permit.

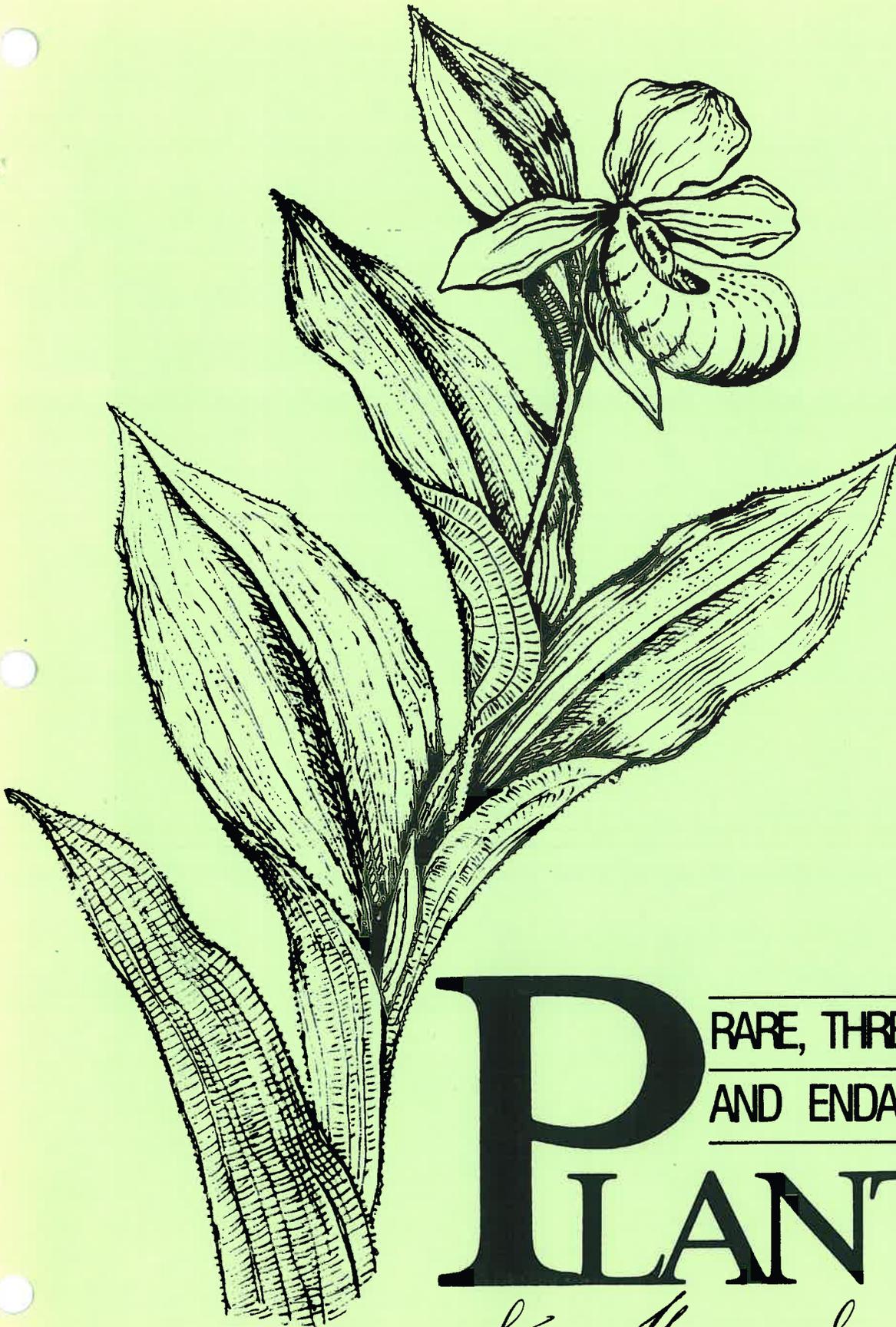
A. — C. (proposed text unchanged)

D. Exemptions. The following activities are exempted from the requirements for a permit from the Administration under this chapter:

(1) — (2) (proposed text unchanged)

(3) A person who proposes to change in any manner the course, current, or cross-section of any waters of the State other than those referenced in §D(1) and (2) of this regulation does not need a permit from the Administration if the:

APPENDIX B
RARE, THREATENED AND ENDANGERED PLANTS
AND ANIMALS OF MARYLAND



P RARE, THREATENED
AND ENDANGERED
PLANTS

of Maryland

RARE, THREATENED AND ENDANGERED PLANTS

INTRODUCTION

The following list identifies those native plants of Maryland which are among the rarest and most in need of conservation. It has been compiled by the biologists of the Maryland Natural Heritage Program as part of an ongoing effort since 1979 to identify and protect the best remaining examples of rare species habitats and significant natural areas throughout the State. In 1984, this list was incorporated into the Maryland Department of Natural Resources publication *Threatened and Endangered Plants and Animals of Maryland*, which also contains detailed information on the distribution and status of Maryland's rare species.

Since 1984, our knowledge of Maryland's flora has steadily grown. Through extensive field work, staff ecologists have located populations of species previously unrecorded for the State. Also, some species have been determined to be either more widespread or less vulnerable to ecological disturbances than previously believed. Thus, some species have been added and some downgraded in rarity status or even removed from the list. The rare species list maintained by the Maryland Natural Heritage Program (NHP) is dynamic, being continually revised as new information is collected by NHP biologists, as well as scientific experts and knowledgeable amateur naturalists.

Not all plants currently considered by NHP biologists as rare, threatened, or endangered are officially designated as such in the State regulations. In 1987, the official State list was revised to include a total of 267 plants, as well as 76 animals (see COMAR 08.03.08). However, there are many other species of concern to NHP biologists which may warrant official listing due to their vulnerability of extirpation from Maryland.

Finally, the U.S. Fish and Wildlife Service's Office of Endangered Species publishes a list of federally-designated threatened and endangered species, as well as those species considered to be candidates for official listing. Copies of the U.S. Department of Interior's booklet, "Endangered & Threatened Wildlife and Plants," published April 10, 1987, can be obtained from the Publication Unit, U.S. Fish and Wildlife Service, Washington, DC 20240.

ABOUT THE LIST

This list is arranged alphabetically by scientific name. The nomenclature generally follows the 1982 U.S. Soil Conservation Service publication, "National List of Scientific Plant Names." An appendix provides a cross-reference to synonyms found in Fernald's *Gray's Manual of Botany*, 8th Edition (1950).

Three columns under the heading STATUS are printed to the right of each name. The first column (NHP) denotes the rarity status of the species as assigned by the Maryland Natural Heritage Program. The second column (MD) includes those species officially designated by the Maryland Department of Natural Resources under COMAR 08.03.08. The codes in the last column (US) refer to the status of each species of concern to the U.S. Fish and Wildlife Service. Definitions of the codes used by each of these agencies to denote species rarity can be found below.

To obtain further copies of this list, to receive a copy of "Rare, Threatened, and Endangered Animals of Maryland," or to receive an order form for *Threatened and Endangered Plants and Animals of Maryland*, please contact the Maryland Natural Heritage Program at the above address.

Explanation of Status Codes

NHP = Status as designated by the Maryland Natural Heritage Program, Forest, Park & Wildlife Service, Department of Natural Resources.

A1—species considered to be *Nationally Endangered*.

A2—species considered to be *Nationally Threatened*.

A3—species considered to be *Nationally Rare*.

B1—species considered to be *Regionally Rare*.

B2—species considered to be *Highly Rare in Maryland*.

B3—species considered to be *Rare in Maryland*.

IX—species apparently extirpated from Maryland; not observed in the State since 1950. (This code is used in conjunction with an A or B rank.)

IU—species considered to be of concern in Maryland, but with an uncertain status due to questionable taxonomy, uncertain Maryland record, or incomplete distribution information. (This code is used in conjunction with an A or B rank.)

C—species considered to be secure in Maryland, but worthy of monitoring due to declining or restricted populations.

A dash (-) indicates the species is not being tracked by the Natural Heritage Program due to extirpation or non-resident status.

MD = Status as designated by the Maryland Department of Natural Resources (COMAR 08.03.08).

E—species listed as *Endangered in Maryland*.

X—species listed as *Endangered Extirpated in Maryland, and would be considered Endangered if a viable, naturally occurring population were located*.

T—species listed as *Threatened in Maryland*.

US = Status as designated by the U.S. Fish and Wildlife Service.

LE—species currently listed as *Endangered*.

LT—species currently listed as *Threatened*.

C1—candidate taxa presently under review for federal listing for which substantial information exists on biological vulnerability and threat(s) to indicate the appropriateness of listing the taxa as *Endangered or Threatened*. Such possibly extinct taxa are indicated by an asterisk (*).

C2—candidate taxa presently under review for federal listing for which information indicates that listing as *Endangered or Threatened* is possibly appropriate, but for which substantial data on biological vulnerability and threat(s) are not currently known or on file to support proposed rules.

3B—taxa which are no longer considered distinct species.

3C—taxa which have proved to be more abundant or widespread than was previously believed and/or those which are not subject to any identifiable threat.

| Scientific name | Common Name | NHP | Status MD | US |
|------------------------------------|-------------------------------|------------|------------------|-----------|
| <i>Asclepias lanceolata</i> | Smooth Orange Milkweed | C | | |
| <i>Asclepias purpurascens</i> | Purple Milkweed | C | | |
| <i>Asclepias rubra</i> | Red Milkweed | B2 | E | |
| <i>Asclepias verticillata</i> | Whorled Milkweed | C | | |
| <i>Asplenium bradleyi</i> | Bradley's Spleenwort | B2 | X | |
| <i>Asplenium pinnatifidum</i> | Lobed Spleenwort | B3 | | |
| <i>Asplenium resiliens</i> | Black-stem Spleenwort | B2 | | |
| <i>Asplenium ruta-muraria</i> | Wall-rue | C | | |
| <i>Aster concinnus</i> | Steele's Aster | B2/X | X | |
| <i>Aster concolor</i> | Silvery Aster | B2/X | X | |
| <i>Aster depauperatus</i> | Serpentine Aster | A2 | E | C2 |
| <i>Aster infirmus</i> | Cornel-leaf Aster | C | | |
| <i>Aster lowrieanus</i> | Lowrie's Aster | C | | |
| <i>Aster nemoralis</i> | Bog Aster | B1/U | | |
| <i>Aster ontariensis</i> | Ontario Aster | B1/U | | |
| <i>Aster praealtus</i> | Willow Aster | B1 | | |
| <i>Aster radula</i> | Rough-leaved Aster | B2 | | |
| <i>Aster sagittifolius</i> | Arrow-leaved Aster | B2 | | |
| <i>Aster shortii</i> | Short's Aster | C | | |
| <i>Aster spectabilis</i> | Showy Aster | B2 | X | |
| <i>Astragalus canadensis</i> | Canada Milkvetch | B2 | | |
| <i>Astragalus distortus</i> | Bent Milkvetch | B1 | | |
| <i>Athyrium pycnocarpon</i> | Glade Fern | B3 | T | |
| <i>Atriplex arenaria</i> | Sea-beach Orach | C | | |
| <i>Aureolaria flava</i> | Smooth Yellow Foxglove | C | | |
| <i>Aureolaria laevigata</i> | Downy Yellow Foxglove | C | | |
| <i>Axonopus furcatus</i> | | B1/X | X | |
| <i>Azolla caroliniana</i> | Mosquito Fern | B2 | | |
| <i>Bacopa monnieri</i> | | B2/U | | |
| <i>Bacopa stragula</i> | Mat-forming Water-hyssop | A1/X | X | C2 |
| <i>Baptisia australis</i> | Wild False Indigo | B3 | | |
| <i>Bartonia paniculata</i> | Twining Bartonia | C | | |
| <i>Berberis canadensis</i> | American Barberry | B1/U | | |
| <i>Betula populifolia</i> | Gray Birch | B2/U | | |
| <i>Bidens bidentoides</i> | Maryland Bur-marigold | A3 | T | C2 |
| <i>Bidens coronata</i> | Tickseed Sunflower | B3 | E | |
| <i>Bidens discoidea</i> | Small Beggar-ticks | B3 | E | |
| <i>Bidens mitis</i> | | B1 | E | |
| <i>Blephilia ciliata</i> | Downy Woodmint | B2 | | |
| <i>Blephilia hirsuta</i> | Hairy Woodmint | C | | |
| <i>Boltonia asteroides</i> | Aster-like Boltonia | B1 | E | |
| <i>Borrichia frutescens</i> | Sea Ox-eye | B2/U | X | |
| <i>Botrychium lanceolatum</i> | Triangle Grape-fern | B2/X | X | |
| <i>Botrychium matricariifolium</i> | Matricary Grape-fern | C | | |
| <i>Botrychium multifidum</i> | Leathery Grape-fern | B1/X | X | |
| <i>Botrychium oneidense</i> | Blunt-lobe Grape-fern | B2/U | | |
| <i>Botrychium simplex</i> | Small Grape-fern | B1/X | X | |
| <i>Bouteloua curtipendula</i> | Side-oats Grama | B3 | | |
| <i>Bromus ciliatus</i> | Fringed Brome | B2 | | |
| <i>Bromus kalmii</i> | Wild Chess | B2 | | |
| <i>Bromus latiglumis</i> | Broad-glumed Brome | B1 | | |
| <i>Bromus nottowanus</i> | Nottoway's Brome | B1 | | |
| <i>Buchnera americana</i> | Blue-hearts | B1/X | X | |
| <i>Cacalia muhlenbergii</i> | Great Indian-plantain | B2 | X | |
| <i>Cacalia suaveolens</i> | Sweet-scented Indian-plantain | B2 | | |
| <i>Calamagrostis canadensis</i> | Blue-joint Grass | C | | |
| <i>Calla palustris</i> | Wild Calla | B1 | | |
| <i>Callicarpa americana</i> | French Mulberry | B2 | | |
| <i>Callitriche verna</i> | Vernal Water Starwort | C | | |

| Scientific name | Common Name | NHP | Status MD | US |
|--|----------------------------|------------|------------------|-----------|
| <i>Carex novae-angliae</i> | New England Sedge | B1/X | X | |
| <i>Carex pedunculata</i> | Long-stalked Sedge | B2 | | |
| <i>Carex plantaginea</i> | Plantain-leaved Sedge | C | | |
| <i>Carex polymorpha</i> | Variable Sedge | A3/X | X | C2 |
| <i>Carex projecta</i> | Necklace Sedge | B3 | | |
| <i>Carex radiata</i> | Stellate Sedge | B3 | | |
| <i>Carex retrorsa</i> | | B2/U | | |
| <i>Carex richardsonii</i> | Richardson's Sedge | B1 | | |
| <i>Carex rostrata</i> | Beaked Sedge | B3 | | |
| <i>Carex rugosperma</i> | | B2/U | | |
| <i>Carex seorsa</i> | Weak Stellate Sedge | C | | |
| <i>Carex shortiana</i> | Short's Sedge | B2 | | |
| <i>Carex silicea</i> | Sea-beach Sedge | B1 | | |
| <i>Carex straminea</i> | Straw Sedge | C | | |
| <i>Carex striatula</i> | Lined Sedge | B2 | X | |
| <i>Carex styloflexa</i> | Bent Sedge | C | | |
| <i>Carex tenera</i> | Slender Sedge | B2 | X | |
| <i>Carex tetanica</i> | Rigid Sedge | B2/X | X | |
| <i>Carex texensis</i> | | B1/U | | |
| <i>Carex tonsa</i> | Shaved Sedge | B2 | | |
| <i>Carex trichocarpa</i> | Hairy-fruited Sedge | B3 | | |
| <i>Carex typhina</i> | Cat-tail Sedge | B2 | | |
| <i>Carex venusta</i> | Dark Green Sedge | B2 | E | |
| <i>Carex vesicaria</i> | Inflated Sedge | B2 | T | |
| <i>Carex vestita</i> | Velvety Sedge | B3 | | |
| <i>Carex woodii</i> | Wood's Sedge | B2 | X | |
| <i>Carya laciniosa</i> | Big Shellbark Hickory | B2 | | |
| <i>Carya pallida</i> | Pale Hickory | C | | |
| <i>Cassia fasciculata</i> <i>var. macrosperma</i> | Marsh Wild Senna | B1 | E | C2 |
| <i>Cassia marilandica</i> | Maryland Senna | C | | |
| <i>Castanea dentata</i> [fruiting] | American Chestnut | C | | |
| <i>Castanea pumila</i> | Chinquapin | C | | |
| <i>Castilleja coccinea</i> | Indian Paintbrush | B2 | | |
| <i>Celtis laevigata</i> | Sugarberry | B2/U | | |
| <i>Centella erecta</i> | Coinleaf | B2 | | |
| <i>Centrosema virginianum</i> | Spurred Butterfly-pea | B3 | | |
| <i>Centunculus minimus</i> | Chaffweed | B1/X | X | |
| <i>Ceratophyllum muricatum</i> | Prickly Hornwort | B2 | | |
| <i>Chaerophyllum tainturieri</i> | | B2 | | |
| <i>Chamaecyparis thyoides</i> | Atlantic White Cedar | C | | |
| <i>Chamaedaphne calyculata</i> | Leatherleaf | B3 | T | |
| <i>Chamaelirium luteum</i> | Devil's-bit | C | | |
| <i>Chelone obliqua</i> | Red Turtlehead | B2 | T | |
| <i>Chenopodium gigantospermum</i> | Maple-leaved Goosefoot | B2/U | | |
| <i>Chenopodium leptophyllum</i> | Narrow-leaved Goosefoot | B1/U | | |
| <i>Chenopodium standleyanum</i> | Standley's Goosefoot | B2 | | |
| <i>Chrysogonum virginianum</i> | Golden-knees | C | | |
| <i>Cicuta bulbifera</i> | Bulb-bearing Water Hemlock | B2 | | |
| <i>Cimicifuga americana</i> | American Bugbane | B3 | | |
| <i>Cinna latifolia</i> | Slender Wood Reedgrass | B2 | | |
| <i>Cirsium horridulum</i> | Yellow Thistle | C | | |
| <i>Cirsium muticum</i> | Swamp Thistle | C | | |
| <i>Cladium mariscoides</i> | Twigrush | C | | |
| <i>Claytonia caroliniana</i> | Carolina Spring-beauty | C | | |
| <i>Cleistes divaricata</i> | Spreading Pogonia | B1 | E | |
| <i>Clematis occidentalis</i> | Purple Clematis | B2/X | X | |
| <i>Clematis ochroleuca</i> | Curly-heads | B2/X | X | |
| <i>Clematis viorna</i> | Leatherflower | C | | |

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|--------------------------------|--------------------------|------------|------------------|-----------|
| <i>Dicentra eximia</i> | Wild Bleeding-Heart | B2 | | |
| <i>Digitaria villosa</i> | | B2 | X | |
| <i>Dioscorea hirticaulis</i> | Wild Yam | B1/U | | |
| <i>Dirca palustris</i> | Leatherwood | B2 | | |
| <i>Dodecatheon meadia</i> | Shooting-Star | C | | |
| <i>Drosera capillaris</i> | Pink Sundew | B2 | E | |
| <i>Drosera rotundifolia</i> | Round-leaved Sundew | C | | |
| <i>Dryopteris campyloptera</i> | Mountain Wood-fern | B2 | | |
| <i>Dryopteris celsa</i> | Log Fern | B2 | E | |
| <i>Dryopteris clintoniana</i> | Clinton's Fern | C | | |
| <i>Dryopteris goldiana</i> | Goldie's Fern | C | | |
| <i>Echinodorus cordifolius</i> | | B2 | | |
| <i>Elatine americana</i> | American Waterwort | C | | |
| <i>Elatine minima</i> | Small Waterwort | B2 | | |
| <i>Eleocharis albida</i> | | B2 | | |
| <i>Eleocharis compressa</i> | Flattened Spikerush | B3 | | |
| <i>Eleocharis engelmannii</i> | Engelmann's Spikerush | C | | |
| <i>Eleocharis equisetoides</i> | Knotted Spikerush | B1 | E | |
| <i>Eleocharis erythropoda</i> | Bald Spikerush | C | | |
| <i>Eleocharis fallax</i> | C | | | |
| <i>Eleocharis flavescens</i> | Pale Spikerush | B2 | | |
| <i>Eleocharis geniculata</i> | Capitate Spikerush | B1/U | | |
| <i>Eleocharis halophila</i> | | B1 | X | |
| <i>Eleocharis intermedia</i> | Matted Spikerush | B2 | | |
| <i>Eleocharis melanocarpa</i> | Black-fruited Spikerush | B1 | E | |
| <i>Eleocharis microcarpa</i> | Torrey's Spikerush | C | | |
| <i>Eleocharis olivacea</i> | Green Spikerush | C | | |
| <i>Eleocharis robbinsii</i> | Robbins' Spikerush | B1 | E | |
| <i>Eleocharis rostellata</i> | Beaked Spikerush | B3 | | |
| <i>Eleocharis tortilis</i> | Twisted Spikerush | B3 | | |
| <i>Eleocharis tricostata</i> | Three-ribbed Spikerush | B1/X | X | |
| <i>Elephantopus tomentosus</i> | Tobaccoweed | B2 | | |
| <i>Ellisia nyctelea</i> | Nyctelea | C | | |
| <i>Epilobium ciliatum</i> | Northern Willowherb | B3 | | |
| <i>Epilobium leptophyllum</i> | Linear-leaved Willowherb | B2 | | |
| <i>Epilobium strictum</i> | Downy Willowherb | B2 | X | |
| <i>Equisetum fluviatile</i> | Water Horsetail | B2 | E | |
| <i>Equisetum sylvaticum</i> | Wood Horsetail | B2 | | |
| <i>Eragrostis hirsuta</i> | | B2/U | | |
| <i>Eragrostis refracta</i> | | B2 | | |
| <i>Erianthus alopecuroides</i> | Woolly Beardgrass | B2 | | |
| <i>Erianthus brevibarbis</i> | | B3 | | |
| <i>Erianthus contortus</i> | Bent-awn Plumegrass | B2 | E | |
| <i>Erigenia bulbosa</i> | Harbinger-of-Spring | C | | |
| <i>Eriocaulon compressum</i> | Flattened Pipewort | B3 | | |
| <i>Eriocaulon decangulare</i> | Ten-angled Pipewort | B3 | | |
| <i>Eriocaulon parkeri</i> | Parker's Pipewort | A3 | E | C2 |
| <i>Eriocaulon septangulare</i> | Seven-angled Pipewort | B2 | X | |
| <i>Eriophorum virginicum</i> | Tawny Cottongrass | C | | |
| <i>Eryngium yuccifolium</i> | Tall Rattlesnake Master | B1/X | | |
| <i>Erythronium albidum</i> | White Trout Lily | B2 | | |
| <i>Eupatorium altissimum</i> | Tall Boneset | C | | |
| <i>Eupatorium leucolepis</i> | White-bracted Boneset | B2 | E | |
| <i>Eupatorium maculatum</i> | Spotted Joe-pye-weed | B3 | | |
| <i>Euphorbia obtusata</i> | Blunt-leaved Spurge | B2 | | |
| <i>Euphorbia purpurea</i> | Darlington's Spurge | A2 | E | C2 |
| <i>Euphorbia vermiculata</i> | Hairy Spurge | B2/U | | |
| <i>Euphorbia zinniiflora</i> | Flowering Spurge | B1/U | | |
| <i>Festuca paradoxa</i> | | B2 | X | |

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|----------------------------------|---------------------------------|------|-----------|----|
| <i>Hybanthus concolor</i> | Green Violet | C | | |
| <i>Hydrastis canadensis</i> | Goldenseal | B2 | T | 3C |
| <i>Hydrocotyle ranunculoides</i> | Floating Water-Pennywort | C | | |
| <i>Hydrocotyle verticillata</i> | Whorled Water-Pennywort | C | | |
| <i>Hydrophyllum macrophyllum</i> | Large-leaved Waterleaf | B1 | | |
| <i>Hypericum adpressum</i> | Creeping St. John's-wort | B1 | E | |
| <i>Hypericum denticulatum</i> | Coppery St. John's-wort | B2 | E | |
| <i>Hypericum drummondii</i> | Drummond's St. John's-wort | B1/X | X | |
| <i>Hypericum ellipticum</i> | Pale St. John's-wort | C | | |
| <i>Hypericum gymnanthum</i> | Clasping-leaved St. John's-wort | B2 | X | |
| <i>Hypericum pyramidatum</i> | Great St. John's-wort | B2/X | X | |
| <i>Ilex decidua</i> | Deciduous Holly | B3 | T | |
| <i>Ilex montana</i> | Large-leaved Holly | C | | |
| <i>Iresine rhizomatosa</i> | Bloodleaf | B1/X | X | |
| <i>Iris cristata</i> | Crested Iris | B2 | | |
| <i>Iris prismatica</i> | Slender Blue Flag | B3 | | |
| <i>Iris verna</i> | Dwarf Iris | B2 | E | |
| <i>Iris virginica</i> | Virginia Blue Flag | C | | |
| <i>Isoetes engelmannii</i> | Appalachian Quillwort | C | | |
| <i>Isoetes riparia</i> | Riverbank Quillwort | C | | |
| <i>Isotria medeoloides</i> | Small Whorled Pogonia | A2/X | X | LE |
| <i>Juncus articulatus</i> | Jointed Rush | B1 | | |
| <i>Juncus balticus</i> | Baltic Rush | B1 | | |
| <i>Juncus brachycarpus</i> | Short-fruited Rush | B2 | | |
| <i>Juncus brachycephalus</i> | Small-headed Rush | B1/X | X | |
| <i>Juncus brevicaudatus</i> | Narrow-panicled Rush | B3 | | |
| <i>Juncus caesariensis</i> | New Jersey Rush | A3/X | X | C2 |
| <i>Juncus coriaceus</i> | Awl-leaved Rush | C | | |
| <i>Juncus longii</i> | | B3 | | |
| <i>Juncus megacephalus</i> | | B2/X | X | |
| <i>Juncus militaris</i> | Bayonet Rush | B1/X | X | |
| <i>Juncus pelocarpus</i> | Brown-fruited Rush | B3 | | |
| <i>Juncus polycephalus</i> | | B1/U | | |
| <i>Juncus torreyi</i> | Torrey's Rush | B2 | X | |
| <i>Juncus trifidus</i> | Highland Rush | B1 | | |
| <i>Juniperus communis</i> | Common Juniper | B2/X | X | |
| <i>Krigia biflora</i> | Two-flowered Cynthia | C | | |
| <i>Krigia dandelion</i> | Potato Dandelion | B3 | | |
| <i>Lachnanthes caroliniana</i> | Red-root | B2 | E | |
| <i>Lactuca hirsuta</i> | Hairy Lettuce | B3 | | |
| <i>Larix laricina</i> | Larch | B1 | | |
| <i>Lathyrus palustris</i> | Vetchling | B2 | | |
| <i>Lathyrus venosus</i> | Veiny Pea | C | | |
| <i>Lechea maritima</i> | Beach Pinweed | C | | |
| <i>Lechea tenuifolia</i> | Narrow-leaved Pinweed | B2 | X | |
| <i>Lechea villosa</i> | Hairy Pinweed | C | | |
| <i>Leersia hexandra</i> | | B1 | E | |
| <i>Leersia lenticularis</i> | Catchfly-grass | B2/X | X | |
| <i>Lemna perpusilla</i> | Small Duckweed | C | | |
| <i>Lemna trisulca</i> | Star Duckweed | B2 | E | |
| <i>Leptochloa fascicularis</i> | Long-awned Diplachne | B2 | X | |
| <i>Leptoloma cognatum</i> | Fall Witchgrass | B2/X | X | |
| <i>Lespedeza angustifolia</i> | Narrow-leaf Bushclover | B3 | T | |
| <i>Lespedeza stuevei</i> | Downy Bushclover | B3 | E | |
| <i>Lespedeza violacea</i> | Violet Bushclover | C | | |
| <i>Liatris spicata</i> | Spiked Blazing-star | B2 | | |
| <i>Liatris squarrosa</i> | Scaly Blazing-star | B2/X | X | |
| <i>Liatris turgida</i> | Robust Blazing-star | B2 | | |
| <i>Ligusticum canadense</i> | American Lovage | B2 | X | |

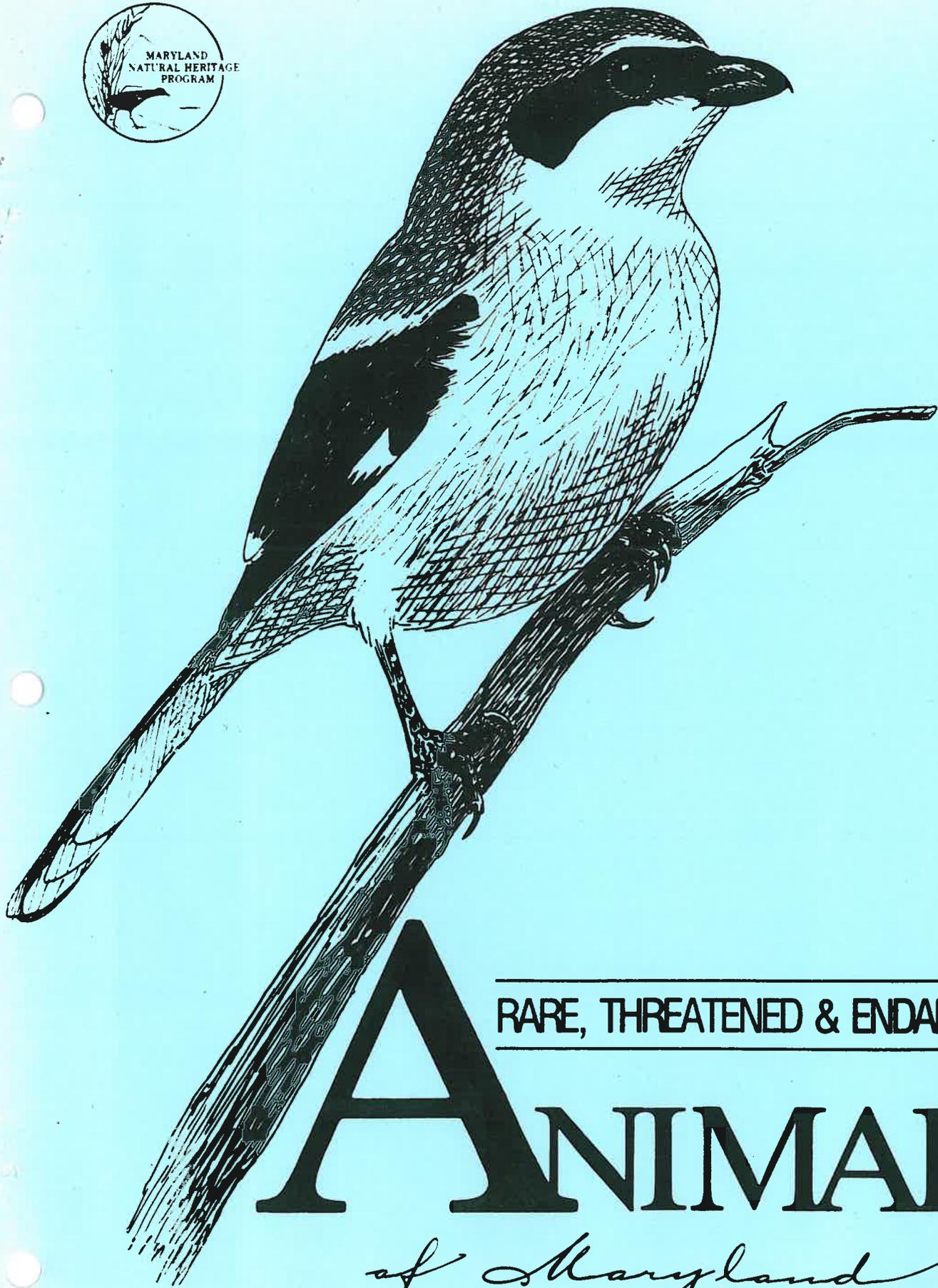
| Scientific name | Common Name | NHP | Status MD | US |
|-----------------------------------|-------------------------------|------|-----------|----|
| <i>Muhlenbergia glomerata</i> | | B2/U | | |
| <i>Muhlenbergia sylvatica</i> | Woodland Dropseed | C | | |
| <i>Muhlenbergia torreyana</i> | Torrey's Dropseed | A2 | E | C1 |
| <i>Myosotis macrosperma</i> | Lg-seeded Forget-me-not | B2 | | |
| <i>Myosotis verna</i> | Spring Forget-me-not | C | | |
| <i>Myrica heterophylla</i> | Evergreen Bayberry | B2/X | X | |
| <i>Myriophyllum heterophyllum</i> | Broadleaf Water-milfoil | B2 | | |
| <i>Myriophyllum humile</i> | Low Water-milfoil | B2 | E | |
| <i>Myriophyllum tennellum</i> | Slender Water-milfoil | B1 | | |
| <i>Myriophyllum verticillatum</i> | Whorled Water-milfoil | C | | |
| <i>Najas flexilis</i> | Slender Naiad | C | | |
| <i>Najas gracillima</i> | Thread-like Naiad | B2 | X | |
| <i>Najas guadalupensis</i> | Southern Naiad | C | | |
| <i>Nelumbo lutea</i> | American Lotus | B1 | T | |
| <i>Nemopanthus mucronatus</i> | Mountain Holly | C | | |
| <i>Nemophila aphylla</i> | | B2 | | |
| <i>Nymphaea tuberosa</i> | Tuberous White Water Lily | B2/U | | |
| <i>Nymphoides aquatica</i> | Larger Floating-heart | B1 | | |
| <i>Nymphoides cordata</i> | Floating-heart | B2 | E | |
| <i>Oenothera argillicola</i> | Shale-barren Primrose | C | | |
| <i>Oenothera humifusa</i> | Seaside Evening Primrose | C | | |
| <i>Oldenlandia uniflora</i> | Clustered Bluets | B3 | | |
| <i>Onosmodium molle</i> | Shaggy False-gromwell | B2 | | |
| <i>Onosmodium virginianum</i> | Virginia False-gromwell | B2 | E | |
| <i>Oryzopsis asperifolia</i> | White-frtd Mountainrice | B2 | | |
| <i>Oryzopsis racemosa</i> | Black-frtd Mountainrice | B2 | | |
| <i>Oxydendrum arboreum</i> | Sourwood | B2 | | |
| <i>Oxypolis canbyi</i> | Canby's Dropwor | A1 | E | LE |
| <i>Panax quinquefolius</i> | Ginseng | C | | |
| <i>Panicum aciculare</i> | Bristling Panicgrass | B1/U | | |
| <i>Panicum aculeatum</i> | Tall Rough Panicgrass | B1 | | |
| <i>Panicum angustifolium</i> | Narrow-leaved Panicgrass | B2 | | |
| <i>Panicum boreale</i> | Northern Panicgrass | B1/X | X | |
| <i>Panicum commonsianum</i> | Commons' Panicgrass | B2 | | |
| <i>Panicum ensifolium</i> | Small-leaved Panicgrass | C | | |
| <i>Panicum flexile</i> | Wiry Witch-Grass | B2/X | | |
| <i>Panicum hemitomon</i> | Maidencane | C | | |
| <i>Panicum laxiflorum</i> | | B1 | | |
| <i>Panicum oligosanthes</i> | Few-flowered Panicgrass | B3 | | |
| <i>Panicum matamusketense</i> | Mattamuskeet Panicgrass | B2 | | |
| <i>Panicum ravenelii</i> | | C | | |
| <i>Panicum scabriusculum</i> | Tall Swamp Panicgrass | B1 | E | |
| <i>Panicum tuckermanii</i> | Tuckerman's Panicgrass | B1/U | | |
| <i>Panicum wrightianum</i> | Wright's Panicgrass | B1 | E | |
| <i>Panicum yadkinense</i> | | B1 | | |
| <i>Parnassia asarifolia</i> | Kidneyleaf Grass-of-Parnassus | B2 | E | |
| <i>Paronychia virginica</i> | Yellow Nailwort | A3 | E | C2 |
| <i>Parthenium integrifolium</i> | American Feverfew | B2 | | |
| <i>Paspalum dissectum</i> | Walter's Paspalum | B3 | E | |
| <i>Paspalum fluitans</i> | Floating Paspalum | B1 | | |
| <i>Passiflora incarnata</i> | Purple Passionflower | B2 | | |
| <i>Passiflora lutea</i> | Yellow Passionflower | C | | |
| <i>Paxistima canbyi</i> | Canby's Mountain Lover | A3 | E | C2 |
| <i>Pedicularis lanceolata</i> | Swamp Lousewort | B2 | | |
| <i>Pellaea glabella</i> | Smooth Cliffbrake | B2 | | |
| <i>Penstemon laevigatus</i> | Smooth Beardtongue | C | | |
| <i>Persea borbonia</i> | Red Bay | B2 | T | |
| <i>Phacelia purshii</i> | Miami-mist | C | | |
| <i>Phacelia ranunculacea</i> | Coville's Phacelia | B1 | E | |

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|-------------------------------------|--------------------------|------------|------------------|-----------|
| <i>Prunus alleghaniensis</i> | Alleghany Plum | B1 | E | |
| <i>Prunus angustifolia</i> | Chickasaw Plum | C | | |
| <i>Prunus maritima</i> | Beach Plum | B2 | | |
| <i>Prunus pumila</i> | Eastern Dwarf Cherry | B2/U | | |
| <i>Psilocarya nitens</i> | Short-beaked Baldrush | B1 | E | |
| <i>Psilocarya scirpoides</i> | Long-beaked Baldrush | B2 | E | |
| <i>Psoralea psoralioides</i> | | B2/X | | |
| <i>Ptelea trifoliata</i> | Wafer-ash | C | | |
| <i>Ptilimnium nodosum</i> | Harperella | A1 | E | LE |
| <i>Puccinellia fasciculata</i> | | C | | |
| <i>Puccinellia pallida</i> | Pale Mannagrass | B2 | X | |
| <i>Pycnanthemum pycnanthemoides</i> | Southern Mountain-mint | B2 | | |
| <i>Pycnanthemum setosum</i> | Awned Mountain-mint | B3 | X | |
| <i>Pycnanthemum torrei</i> | Torrey's Mountain-mint | B2 | | |
| <i>Pycnanthemum verticillatum</i> | Whorled Mountain-mint | B3 | | |
| <i>Pycnanthemum virginianum</i> | Virginia Mountain-mint | B3 | | |
| <i>Pyrola secunda</i> | One-sided Pyrola | B2 | E | |
| <i>Pyrola virens</i> | Greenish-flowered Pyrola | B2/X | X | |
| <i>Pyrhopappus carolinianus</i> | Carolina False-dandelion | C | | |
| <i>Quercus imbricaria</i> | Shingle Oak | C | | |
| <i>Quercus laurifolia</i> | Laurel-leaved Oak | B1 | | |
| <i>Quercus lyrata</i> | Over-cup Oak | C | | |
| <i>Quercus macrocarpa</i> | Mossy-cup Oak | B2 | | |
| <i>Quercus muehlenbergii</i> | Chinquapin Oak | C | | |
| <i>Quercus prinoides</i> | Dwarf Chestnut Oak | C | | |
| <i>Quercus shumardii</i> | Shumard's Red Oak | B2 | | |
| <i>Ranunculus allegheniensis</i> | Mountain Crowfoot | C | | |
| <i>Ranunculus ambigens</i> | Water-plantain Spearwort | B2 | | |
| <i>Ranunculus carolinianus</i> | Carolina Buttercup | B2 | | |
| <i>Ranunculus fascicularis</i> | Early Buttercup | B2 | | |
| <i>Ranunculus flabellaris</i> | Yellow Water-crowfoot | B2 | E | |
| <i>Ranunculus hederaceus</i> | | B1/X | X | |
| <i>Ranunculus laxicaulis</i> | | B2/U | | |
| <i>Ranunculus micranthus</i> | Rock Crowfoot | C | | |
| <i>Ranunculus pensylvanicus</i> | Bristly Crowfoot | B2/X | X | |
| <i>Ranunculus pusillus</i> | Low Spearwort | C | | |
| <i>Ranunculus trichophyllus</i> | White Water-crowfoot | B2 | | |
| <i>Rhexia aristosa</i> | Awned Meadow-beauty | A3/X | X | C2 |
| <i>Rhododendron arborescens</i> | Smooth Azalea | C | | |
| <i>Rhododendron atlanticum</i> | Dwarf Azalea | C | | |
| <i>Rhododendron calendulaceum</i> | Flame Azalea | B2 | | |
| <i>Rhododendron canescens</i> | | B2 | | |
| <i>Rhynchosia tomentosa</i> | | B2 | E | |
| <i>Rhynchospora alba</i> | White Beakrush | C | | |
| <i>Rhynchospora cephalantha</i> | Capitate Beakrush | B2 | | |
| <i>Rhynchospora corniculata</i> | Short-brstld Hornedrush | B3 | E | |
| <i>Rhynchospora filifolia</i> | Thread-leaved Beakrush | B1 | E | |
| <i>Rhynchospora globularis</i> | Grass-like Beakrush | B2 | E | |
| <i>Rhynchospora glomerata</i> | Clustered Beakrush | B2 | E | |
| <i>Rhynchospora gracilentia</i> | Slender Beakrush | C | | |
| <i>Rhynchospora inundata</i> | Drowned Hornedrush | B1 | E | |
| <i>Rhynchospora microcephala</i> | Tiny-headed Beakrush | B2 | X | |
| <i>Rhynchospora pallida</i> | Pale Beakrush | B1 | | |
| <i>Rhynchospora rariflora</i> | Few-flowered Beakrush | B1/X | X | |
| <i>Rhynchospora torreyana</i> | Torrey's Beakrush | B2 | E | |
| <i>Ribes americanum</i> | Wild Black Currant | B2/X | X | |
| <i>Ribes cynosbati</i> | Prickly Gooseberry | C | | |
| <i>Ribes glandulosum</i> | Skunk Currant | B2 | | |
| <i>Ribes hirtellum</i> | Low Wild Gooseberry | B2 | | |

| Scientific name | Common Name | NHP | Status | |
|----------------------------------|--------------------------------|------|--------|----|
| | | | MD | US |
| <i>Scutellaria leonardii</i> | Leonard's Skullcap | B3 | | |
| <i>Scutellaria nervosa</i> | Veined Skullcap | B2/X | X | |
| <i>Scutellaria ovata</i> | Heart-leaved Skullcap | C | | |
| <i>Scutellaria parvula</i> | Small Skullcap | B2/X | X | |
| <i>Scutellaria saxatilis</i> | Rock Skullcap | B2 | | |
| <i>Scutellaria serrata</i> | Showy Skullcap | C | | |
| <i>Sedum glaucophyllum</i> | Cliff Stonecrop | B2 | | |
| <i>Senecio anonymus</i> | Small's Ragwort | C | | |
| <i>Senecio antennariifolius</i> | Pussytoes Ragwort | C | | |
| <i>Senecio pauperculus</i> | Balsam Ragwort | C | | |
| <i>Sesuvium maritimum</i> | Sea-purslane | B3 | | |
| <i>Sibara virginica</i> | Virginia Cress | B2/U | | |
| <i>Sida hermaphrodita</i> | Virginia Mallow | A3 | T | 3C |
| <i>Silene nivea</i> | Snowy Campion | B1 | | |
| <i>Silphium trifoliatum</i> | Three-leaved Rosinweed | C | | |
| <i>Sisyrinchium arenicola</i> | Sand Blueeyed-grass | B2/X | X | |
| <i>Smilacina stellata</i> | Star-flwr False Solomon's-seal | B2 | | |
| <i>Smilax bona-nox</i> | Bullbrier | C | | |
| <i>Smilax ecirrhata</i> | Upright Smilax | B2/U | | |
| <i>Smilax pseudo-china</i> | Halberd-ld Greenbrier | B3 | E | |
| <i>Smilax walteri</i> | Red-berried Greenbrier | B3 | E | |
| <i>Solidago curtisii</i> | Curtis' Goldenrod | B2 | | |
| <i>Solidago elliotii</i> | Elliott's Goldenrod | C | | |
| <i>Solidago fistulosa</i> | Pine Barrens Goldenrod | C | | |
| <i>Solidago hispida</i> | Hairy Goldenrod | B3 | | |
| <i>Solidago microcephala</i> | Tiny-headed Goldenrod | C | | |
| <i>Solidago patula</i> | Sharp-leaved Goldenrod | C | | |
| <i>Solidago puberula</i> | Downy Goldenrod | C | | |
| <i>Solidago rigida</i> | Hard-leaved Goldenrod | B2 | | |
| <i>Solidago roanensis</i> | Mountain Goldenrod | B2 | X | |
| <i>Solidago rupestris</i> | Rock Goldenrod | A3 | X | |
| <i>Solidago spathulata</i> | | B1 | | |
| <i>Solidago speciosa</i> | Showy Goldenrod | B2 | E | |
| <i>Solidago stricta</i> | Wandlike Goldenrod | B2/U | | |
| <i>Solidago uliginosa</i> | Bog Goldenrod | C | | |
| <i>Sorbus americana</i> | American Mountain-ash | C | | |
| <i>Sorghastrum elliotii</i> | | B2/X | X | |
| <i>Sparganium androcladum</i> | Branching Bur-reed | C | | |
| <i>Sparganium chlorocarpum</i> | Green-fruited Bur-reed | C | | |
| <i>Sparganium eurycarpum</i> | Broad-fruited Bur-reed | C | | |
| <i>Spermacoce glabra</i> | Buttonweed | B1/U | | |
| <i>Sphenopholis pensylvanica</i> | Swamp-oats | B3 | | |
| <i>Spigelia marilandica</i> | Indian-pink | B1/U | X | |
| <i>Spiraea betulifolia</i> | Corymbed Spiraea | C | | |
| <i>Spiranthes laciniata</i> | Lace-lip Ladies'tresses | B2/U | | |
| <i>Spiranthes lucida</i> | Wide-ld Ladies'tresses | B2 | | |
| <i>Spiranthes ochroleuca</i> | Yellow Nodding Ladies'tresses | B2/U | | |
| <i>Spiranthes odorata</i> | Sweet-scented Ladies'tresses | B2 | | |
| <i>Spiranthes praecox</i> | Grass-leaved Ladies'tresses | B2/U | | |
| <i>Spiranthes tuberosa</i> | Little Ladies'tresses | C | | |
| <i>Sporobolus asper</i> | Long-leaved Rushgrass | B2 | | |
| <i>Sporobolus clandestinus</i> | Rough Rushgrass | B2 | | |
| <i>Sporobolus heterolepis</i> | Northern Dropseed | B1 | | |
| <i>Sporobolus neglectus</i> | Small Rushgrass | B2 | | |
| <i>Stachys aspera</i> | | B2/X | X | |
| <i>Stachys clingmannii</i> | Clingman's Hedge-nettle | B1/U | | |
| <i>Stachys cordata</i> | Nuttall's Hedge-nettle | B1 | | |
| <i>Stachys hyssopifolia</i> | Hyssop-ld Hedge-nettle | B2 | | |
| <i>Stachys latidens</i> | | B1 | | |

| <i>Scientific name</i> | Common Name | NHP | Status | |
|-------------------------------|---------------------------|------|--------|----|
| | | | MD | US |
| <i>Vernonia gigantea</i> | Giant Ironweed | B2/U | | |
| <i>Veronica scutellata</i> | Marsh Speedwell | B2 | | |
| <i>Viburnum lentago</i> | Nannyberry | B2 | | |
| <i>Vicia americana</i> | Purple Vetch | B2/X | X | |
| <i>Viola appalachiensis</i> | Appalachian Blue Violet | B3 | | |
| <i>Viola brittoniana</i> | Britton's Violet | C | | |
| <i>Viola incognita</i> | Large-lobed White Violet | B2 | | |
| <i>Viola rostrata</i> | Long-spurred Violet | C | | |
| <i>Viola septentrionalis</i> | Northern Blue Violet | B2/U | | |
| <i>Vitis cinerea</i> | Graybark | B1/U | | |
| <i>Vitis novae-angliae</i> | New England Grape | B1 | | |
| <i>Vitis rupestris</i> | Sand Grape | B2 | | |
| <i>Wolffia columbiana</i> | Columbian Water-meal | C | | |
| <i>Wolffia papulifera</i> | | B2 | | |
| <i>Wolffia punctata</i> | Watermeal | B2 | | |
| <i>Wolffiella floridana</i> | Wolffiella | B2/X | X | |
| <i>Woodsia ilvensis</i> | Rusty Woodsia | B2 | | |
| <i>Xyris difformis</i> | Variable Yelloweyed-grass | B3 | | |
| <i>Xyris fimbriata</i> | Fringed Yelloweyed-grass | B2 | E | |
| <i>Xyris smalliana</i> | Small's Yelloweyed-grass | B1 | E | |
| <i>Zanthoxylum americanum</i> | Northern Prickly-ash | B2 | | |
| <i>Zizia aurea</i> | Golden Alexanders | C | | |

| Synonym Name | Listed Name |
|---|-----------------------------------|
| <i>Habenaria</i> spp. | <i>Platanthera</i> spp. |
| <i>Habenaria viridis</i> var. <i>bracteata</i> | <i>Coeloglossum viride</i> |
| <i>Hedyotis michauxii</i> | <i>Houstonia serpyllifolia</i> |
| <i>Hedyotis uniflora</i> | <i>Oldenlandia uniflora</i> |
| <i>Helenium tenuifolium</i> | <i>H. flexuosum</i> |
| <i>Heracleum maximum</i> | <i>H. lanatum</i> |
| <i>Hexastylis virginicum</i> | <i>Asarum virginicum</i> |
| <i>Hibiscus militaris</i> | <i>H. laevis</i> |
| <i>Hypericum tubulosum</i> | <i>Triadenum tubulosum</i> |
| <i>Isanthus brachiatus</i> | <i>Trichostema brachiatum</i> |
| <i>Jussiaea decurrens</i> | <i>Ludwigia decurrens</i> |
| <i>Lophotocarpus calycina</i> | <i>Sagittaria calycina</i> |
| <i>Lycopodium inundatum</i> var. <i>inundatum</i> | <i>L. inundatum</i> |
| <i>Manisuris rugosa</i> | <i>Coelorachis rugosa</i> |
| <i>Melanthium hybridum</i> | <i>M. latifolium</i> |
| <i>Nemophila microcalyx</i> | <i>N. aphylla</i> |
| <i>Onosmodium hispidissimum</i> | <i>O. molle</i> |
| <i>Pachistima canbyi</i> | <i>Paxistima canbyi</i> |
| <i>Phaseolus polystachios</i> | <i>P. polystachyus</i> |
| <i>Phlox ovata</i> | <i>P. latifolia</i> |
| <i>Pseudotaenidia montana</i> | <i>Taenidia montana</i> |
| <i>Pteretis pennsylvanica</i> | <i>Matteuccia struthiopteris</i> |
| <i>Ptilimnium fluviatile</i> | <i>P. nodosum</i> |
| <i>Pyrus floribunda</i> | <i>Aronia prunifolia</i> |
| <i>Ranunculus aquatilis</i> | <i>R. tricophyllus</i> |
| <i>Sagittaria australis</i> | <i>S. longirostra</i> |
| <i>Salix humilis</i> var. <i>microphylla</i> | <i>S. tristis</i> |
| <i>Salix interior</i> | <i>S. exigua</i> |
| <i>Scirpus lineatus</i> | <i>S. pendulus</i> |
| <i>Scirpus maritimus</i> var. <i>fernaldi</i> | <i>S. cylindricus</i> |
| <i>Scleria muhlenbergi</i> | <i>S. reticularis</i> |
| <i>Scutellaria epilobiifolia</i> | <i>S. galericulata</i> |
| <i>Scutellaria parvula</i> var. <i>leonardii</i> | <i>S. leonardii</i> |
| <i>Senecio smallii</i> | <i>S. anonymus</i> |
| <i>Silphium asteriscus</i> | <i>S. trifoliatum</i> |
| <i>Smilax tamnifolia</i> | <i>S. pseudo-china</i> |
| <i>Solidago racemosa</i> | <i>S. spathulata</i> |
| <i>Spiraea corymbosa</i> | <i>S. betulifolia</i> |
| <i>Spiranthes cernua</i> var. <i>ochroleuca</i> | <i>S. ochroleuca</i> |
| <i>Stachys nuttallii</i> | <i>S. cordata</i> |
| <i>Stachys riddellii</i> | <i>S. cordata</i> |
| <i>Tillaea aquatica</i> | <i>Crassula aquatica</i> |
| <i>Torreyochloa pallida</i> | <i>Puccinellia pallida</i> |
| <i>Trillium pusillum</i> var. <i>virginianum</i> | <i>T. pusillum</i> |
| <i>Trisetum pennsylvanicum</i> | <i>Sphenopholis pennsylvanica</i> |
| <i>Utricularia inflata</i> var. <i>minor</i> | <i>U. radiata</i> |
| <i>Uvularia pudica</i> | <i>U. puberula</i> |
| <i>Vernonia altissima</i> | <i>V. gigantea</i> |
| <i>Xanthoxylum americanum</i> | <i>Zanthoxylum americanum</i> |



RARE, THREATENED & ENDANGERED

ANIMALS

of Maryland

Maryland Department of Natural Resources, Forest, Park and Wildlife Service

RARE, THREATENED AND ENDANGERED ANIMALS

INTRODUCTION

The following list identifies those native animals of Maryland which are among the rarest and most in need of conservation. It has been compiled by the biologists of the Maryland Natural Heritage Program as part of an ongoing effort since 1979 to identify and protect the best remaining examples of rare species habitats and significant natural areas throughout the State. In 1984, this list was incorporated into the Maryland Department of Natural Resources publication *Threatened and Endangered Plants and Animals of Maryland*, which also contains detailed information on the distribution and status of Maryland's rare species.

Since 1984, our knowledge of Maryland's fauna has steadily grown. Through extensive field work, staff ecologists have located populations of species previously unrecorded for the State. Also, some species have been determined to be either more widespread or less vulnerable to ecological disturbances than previously believed. Thus, some species have been added and some downgraded in rarity status or even removed from the list. The rare species list maintained by the Maryland Natural Heritage Program (NHP) is dynamic, being continually revised as new information is collected by NHP biologists, as well as scientific experts and knowledgeable amateur naturalists.

Not all animals currently considered by NHP biologists as rare, threatened, or endangered are officially designated as such in the State regulations. In 1987, the official State list was revised to include a total of 76 animals, as well as 267 plants (see COMAR 08.03.08). However, this is still only a fraction of the species of concern to NHP biologists. Also, the list of State-designated rare, threatened, and endangered game and commercial fish (COMAR 08.02.12) has not been included in this list and can be obtained by contacting the Fisheries Division of the Department of Natural Resources, Tawes State Office Bldg., C-2, Annapolis, MD 21401.

Finally, the U.S. Fish and Wildlife Service's Office of Endangered Species publishes a list of federally-designated threatened and endangered species, as well as those species considered to be candidates for official listing. Copies of the U.S. Department of Interior's booklet, "Endangered & Threatened Wildlife and Plants," published April 10, 1987, can be obtained from the Publication Unit, U.S. Fish and Wildlife Service, Washington, DC 20240.

ABOUT THE LIST

This list is arranged phylogenetically beginning with the most primitive group, Planarians. Within each major group, species are listed alphabetically by scientific name. Three columns under the heading STATUS are printed to the right of each name. The first column (NHP) denotes the rarity status of the species as assigned by the Maryland Natural Heritage Program. The second column (MD) includes those species officially designated by the Maryland Department of Natural Resources under COMAR 08.03.08. The codes in the last column (US) refer to the status of each species of concern to the U.S. Fish and Wildlife Service. Definitions of the codes used by each of these agencies to denote species rarity are listed below.

To obtain further copies of this list, to receive a copy of "Rare, Threatened, and Endangered Plants of Maryland," or to receive an order form for *Threatened and Endangered Plants and Animals of Maryland*, please contact the Maryland Natural Heritage Program at the above address.

Explanation of Status Codes

NHP = Status as designated by the Maryland Natural Heritage Program. Forest, Park & Wildlife Service. Department of Natural Resources

A1—species considered to be *Nationally Endangered*

A2—species considered to be *Nationally Threatened*

A3—species considered to be *Nationally Rare*.

B1—species considered to be *Regionally Rare*.

B2—species considered to be *Highly Rare in Maryland*

B3—species considered to be *Rare in Maryland*.

X—species apparently *extirpated from Maryland; not observed in the State since 1950. (This code is used in conjunction with an A or B rank.)*

U—species possibly of concern in Maryland, but with an *uncertain status due to questionable taxonomy, uncertain Maryland record, or incomplete distribution information. (This code is used in conjunction with an A or B rank.)*

C—species considered to be *secure in Maryland, but worthy of monitoring due to declining, restricted, or ecologically vulnerable populations.*

A dash (—) indicates the species is not being tracked by the Natural Heritage Program due to extirpation or non-resident status.

MD = Status as designated by the Maryland Department of Natural Resources (COMAR 08.03.08).

E—species listed as *Endangered in Maryland*.

X—species listed as *Endangered Extirpated in Maryland, and would be considered Endangered if a viable, naturally occurring population were located.*

T—species listed as *Threatened in Maryland*

I—species listed as *In Need of Conservation in Maryland*.

US = Status as designated by the U.S. Fish and Wildlife Service (includes proposed changes to the vertebrate and invertebrate candidate lists in the April, 1987 draft).

LE—species currently listed as *Endangered*.

LT—species currently listed as *Threatened*.

C1—candidate taxa presently under review for federal listing for which substantial information exists on biological vulnerability and threat(s) to indicate the appropriateness of listing the taxa as *Endangered or Threatened*.

C2—candidate taxa presently under review for federal listing for which information indicates that listing as *Endangered or Threatened* is possibly appropriate, but for which substantial data on biological vulnerability and threat(s) are not currently known or on file to support proposed rules.

3A—taxa for which available information indicates probable extinction or destruction of the habitat from which they were known.

3C—taxa which have proved to be more abundant or widespread than was previously believed and/or those that are not subject to any identifiable threat.

| Scientific name | Common Name | NHP | Status MD | US |
|-----------------------------------|--------------------------------------|------|-----------|----|
| PLANARIANS | | | | |
| <i>Macrocotyla hoffmasteri</i> | Hoffmaster's Cave Planarian | B1 | | |
| <i>Phagocata virilis</i> | A Planarian | A2 | | |
| <i>Planaria dactyligera</i> | A Planarian | B2 | | |
| <i>Procotyla typhlops</i> | A Planarian | A2 | E | C2 |
| <i>Sphalloplana sp. 1</i> | A Planarian | A2 | | |
| MOLLUSCS | | | | |
| <i>Alasmidonta heterodon</i> | Ancient Floater | A2 | E | C1 |
| <i>Alasmidonta varicosa</i> | Brook Floater | B1 | | |
| <i>Anguispira clarki</i> | Clark's Beehive Snail | A1 | | |
| <i>Fontigens aldrichi</i> | Aldrich's Spring Snail | B1 | | |
| <i>Glyphyalinia raderi</i> | Rader's Snail | A1 | | C2 |
| <i>Lasmigona subviridis</i> | Green Floater | B2 | | |
| CRUSTACEANS | | | | |
| <i>Ankylocythere tridentata</i> | An Entocytherid Ostracod | A1 | | |
| <i>Attheyella spinipes</i> | A Harpacticoid Copepod | B1/U | | |
| <i>Caecidotea franzi</i> | Franz's Cave Isopod | A1 | | C2 |
| <i>Caecidotea holsingeri</i> | Holsinger's Cave Isopod | B2 | | |
| <i>Caecidotea pricei</i> | Price's Cave Isopod | C | | |
| <i>Caecidotea sp. 1</i> | An Undescribed Isopod | B3 | | |
| <i>Caecidotea sp. 2</i> | An Undescribed Isopod | A2 | | |
| <i>Caecidotea sp. 3</i> | An Undescribed Isopod | B1/U | | |
| <i>Crangonyx dearolfi</i> | Dearolf's Cave Amphipod | A2 | E | C2 |
| <i>Dactylocythere scotos</i> | An Entocytherid Ostracod | B1 | | |
| <i>Diacyclops palustris</i> | A Cyclopoid Copepod | B1/U | | |
| <i>Eulimnadia francesae</i> | A Conchostracan Phyllopod | B1 | | |
| <i>Eulimnadia ventricosa</i> | A Conchostracan Phyllopod | B1 | | |
| <i>Stygobromus allegheniensis</i> | Allegheny Cave Amphipod | B2 | T | 3C |
| <i>Stygobromus biggersi</i> | Biggers' Cave Amphipod | A2 | | |
| <i>Stygobromus emarginatus</i> | Greenbriar Cave Amphipod | A2 | E | 3C |
| <i>Stygobromus franzi</i> | Franz's Cave Amphipod | A1 | | C2 |
| <i>Stygobromus gracilipes</i> | Shenandoah Cave Amphipod | A2 | E | 3C |
| <i>Stygobromus pizzinii</i> | Pizzini's Cave Amphipod | B2 | | C2 |
| <i>Stygobromus sp. 5</i> | Crabtree Cave Amphipod | A1 | | |
| <i>Stygobromus sp. 6</i> | Devil's Hole Cave Amphipod | A1 | | |
| <i>Stygobromus tenuis</i> | Potomac Amphipod | C | | 3C |
| SPIDERS | | | | |
| <i>Atypus bicolor</i> | American Purse-web Spider | B1 | | |
| <i>Oreonetides sp. 1</i> | Snivelys Cave Spider | B1/U | | |
| <i>Porrhomma cavernicolum</i> | Appalachian Cave Spider | B2 | | |
| INSECTS | | | | |
| Collembola | | | | |
| <i>Arrhopalites sp. 1</i> | Crabtree Cave Springtail | B1/U | | |
| Ephemeroptera | | | | |
| <i>Potamanthus walkeri</i> | Walker's Tusked Sprawler | A1/U | | C2 |
| Odonata | | | | |
| <i>Gomphus notatus</i> | Elusive Clubtail Dragonfly | B1/U | | C2 |
| <i>Tachopteryx thoreyi</i> | Thorey's Grayback Dragonfly | B1/U | | |
| Homoptera | | | | |
| <i>Chlorotettix sp. 1</i> | A Cicadellid Leafhopper | B1/U | | |
| <i>Limotettix sp. 1</i> | Eastern Sedge Barrens Planthopper | A1/U | | C2 |
| Coleoptera | | | | |
| <i>Cicindela dorsalis</i> | Northeastern Beach Tiger-beetle | B1 | E | C2 |

| Scientific name | Common Name | NHP | Status | |
|------------------------------------|------------------------------------|------|--------|----|
| | | | MD | US |
| <i>Cicindela lepida</i> | A Cicindelid Beetle | B1 | | |
| <i>Cicindela patruela</i> | A Cicindelid Beetle | B1 | | |
| <i>Cicindela puritana</i> | Puritan Tiger-beetle | A2 | E | C2 |
| <i>Cicindela purpurea</i> | A Cicindelid Beetle | B2 | | |
| <i>Cicindela scutellaris</i> | A Cicindelid Beetle | C | | |
| <i>Cicindela splendida</i> | A Cicindelid Beetle | B1/X | | |
| <i>Cicindela unipunctata</i> | A Cicindelid Beetle | C | | |
| <i>Dryobius sexnotatus</i> | Six-banded Longhorn-beetle | A2 | E | C2 |
| <i>Helops cisteloides</i> | A Tenebrionid Beetle | B1 | | |
| <i>Hoperius planatus</i> | A Hydrophilid Beetle | B1/U | | |
| <i>Hydrochara occulta</i> | A Hydrophilid Beetle | B3 | | |
| <i>Hydrochus sp. 1 (spangleri)</i> | Seth Forest Water Scavenger Beetle | A1/X | | C2 |
| <i>Laccophilus schwarzi</i> | Schwarz' Diving Beetle | A2/X | | C2 |
| <i>Lordithon niger</i> | Black Lordithon Rove-beetle | B1/U | | C2 |
| <i>Lucanus elephas</i> | Giant Stag Beetle | B3 | | |
| <i>Nicrophorus americanus</i> | American Burying-beetle | A2 | | C2 |
| <i>Schoenicus puberulus</i> | A Tenebrionid Beetle | B1 | | |
| <i>Scymnus gordonii</i> | A Coccinellid Beetle | B1/U | | |
| <i>Sperchopsis tessellatus</i> | A Hydrophilid Beetle | B2 | | |
| Trichoptera | | | | |
| <i>Hydropsyche brunneipennis</i> | A Scalaris Trichopteran | C | | |
| Lepidoptera—Butterflies | | | | |
| <i>Amblyscirtes hegon</i> | Pepper-and-Salt Skipper | B2/U | | |
| <i>Autochton cellus</i> | Gold-banded Skipper | B2/U | | |
| <i>Boloria selene</i> | Silver-bordered Fritillary | C | | |
| <i>Calephelis borealis</i> | Northern Metalmark | B3 | | |
| <i>Celastrina ebenina</i> | Sooty Azure | B1 | | |
| <i>Celastrina neglectamajor</i> | Appalachian Blue | C | | |
| <i>Chlosyne harrisii</i> | Harris' Checkerspot | B1 | | |
| <i>Colias interior</i> | Pink-edged Sulphur | B2/U | | |
| <i>Cyllopsis gemma</i> | Gemmed Satyr | B1/U | | |
| <i>Erora laeta</i> | Early Hairstreak | B3/U | | |
| <i>Erynnis martialis</i> | Mottled Duskywing | B1 | | |
| <i>Erynnis persius</i> | Persius Duskywing | B1/U | | |
| <i>Euchloe olympia</i> | Olympia Marble | B3 | | |
| <i>Euphyes bimaculata</i> | Two-spotted Skipper | B1 | | |
| <i>Euphyes dion</i> | Dion Skipper | C | | |
| <i>Euphyes pilatka</i> | Saw-grass Skipper | A3/U | | |
| <i>Fixsenia ontario</i> | Northern Hairstreak | B2 | | |
| <i>Glaucopsyche lygdamus</i> | Silvery Blue | C | | |
| <i>Hermeuptychia sosybius</i> | Carolina Satyr | B1 | | |
| <i>Hesperia attalus</i> | Dotted Skipper | B1/X | | |
| <i>Hesperia sassacus</i> | Indian Skipper | C | | |
| <i>Incisalia irus</i> | Frosted Elfin | B1 | | |
| <i>Lycaena epixanthe</i> | Bog Copper | B1 | | |
| <i>Mitoura hesseli</i> | Hessel's Hairstreak | B1/U | | 3C |
| <i>Nymphalis vau-album</i> | Compton Tortoiseshell | B2/U | | |
| <i>Papilio cresphontes</i> | Giant Swallowtail | B2 | | |
| <i>Papilio palamedes</i> | Palamedes Swallowtail | B1 | | |
| <i>Phyciodes batesii</i> | Tawny Crescentspot | A3/X | | C2 |
| <i>Polites mystic</i> | Long Dash | C | | |
| <i>Polygonia progne</i> | Gray Comma | C | | |
| <i>Problema bulenta</i> | Rare Skipper | A3 | T | C2 |
| <i>Pyrgus wyandot</i> | Southern Grizzled Skipper | B1 | | |
| <i>Satyrium acadica</i> | Acadian Hairstreak | B1/U | | |
| <i>Satyrium caryaevorum</i> | Hickory Hairstreak | B1/U | | |
| <i>Satyrium edwardsii</i> | Edward's Hairstreak | B3 | | |
| <i>Satyrium kingi</i> | King's Hairstreak | B1 | I | |

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|-------------------------------|---|------------|----------------------|-----------|
| <i>Speyeria atlantis</i> | Atlantis Fritillary | B1/U | | |
| <i>Speyeria diana</i> | Diana | B1/X | | |
| <i>Speyeria idalia</i> | Regal Fritillary | B1/U | E | C2 |
| Lepidoptera—Moths | | | | |
| <i>Apamea apamiformis</i> | A Noctuid Moth | B3/U | | |
| <i>Apamea plutonia</i> | A Noctuid Moth | B2/U | | |
| <i>Capis curvata</i> | A Noctuid Moth | B1/U | | |
| <i>Catocala marmorata</i> | Marbled Underwing | B1/X | | 3C |
| <i>Catocala pretiosa</i> | Precious Underwing | A2/X | | C2 |
| <i>Cyclophora nanaria</i> | A Geometrid Moth | B1/U | | |
| <i>Dasychira atrivenosa</i> | A Lymantriid Moth | B3/U | | |
| <i>Ectoedemia castaneae</i> | American Chestnut Nepticulid Moth | A1/X | | 3A |
| <i>Ectoedemia phleophaga</i> | Phleophagan Chestnut Nepticulid Moth | A1/X | | 3A |
| <i>Elaphria georgei</i> | A Noctuid Moth | B1/U | | |
| <i>Hadena ectypa</i> | A Noctuid Moth | A3/U | | |
| <i>Hemileuca maria</i> ssp. 4 | Woodland Buckmoth | B3 | | |
| <i>Isoparce cupressi</i> | Cypress Sphinx Moth | B1 | | |
| <i>Lytrosis sinuosa</i> | Sinuuous Lytrosis | B2/U | | |
| <i>Meropleon diversicolor</i> | A Noctuid Moth | B2/U | | |
| <i>Meropleon titan</i> | A Noctuid Moth | A3/U | | |
| <i>Papaipema duovata</i> | A Noctuid Moth | B2/U | | |
| <i>Papaipema marginidens</i> | A Noctuid Moth | B1/X | | |
| <i>Papaipema polymniae</i> | Polymnia Stalk Borer | A3/X | | |
| <i>Schinia parmeliana</i> | A Noctuid Moth | A1/X | | |
| <i>Sphinx franckii</i> | Franck's Sphinx | B1/X | | |
| <i>Synanthedon castaneae</i> | Chestnut Clearwing Moth | A1/X | | C2 |
| <i>Xestia bollii</i> | A Noctuid Moth | B1/U | | |
| <i>Zale submediana</i> | A Noctuid Moth | B2/U | | |
| Hymenoptera | | | | |
| <i>Proceratium croceum</i> | A Formicid Ant | B2 | | |

FISHES

| | | | | |
|--------------------------------|---------------------|------|---|----|
| <i>Acantharchus pomotis</i> | Mud Sunfish | B3 | | |
| <i>Acipenser brevirostrum</i> | Shortnose Sturgeon | A3 | | LE |
| <i>Acipenser oxyrinchus</i> | Atlantic Sturgeon | B1 | | |
| <i>Catostomus catostomus</i> | Longnose Sucker | B2 | | |
| <i>Centrarchus macropterus</i> | Flier | B2 | | |
| <i>Clinostomus elongatus</i> | Redside Dace | B1 | | |
| <i>Cottus cognatus</i> | Slimy Sculpin | B1 | | |
| <i>Enneacanthus chaetodon</i> | Blackbanded Sunfish | B2 | I | |
| <i>Etheostoma sellare</i> | Maryland Darter | A1 | E | LE |
| <i>Etheostoma vitreum</i> | Glassy Darter | B2 | X | |
| <i>Fundulus luciae</i> | Spotfin Killifish | B1 | | |
| <i>Noturus flavus</i> | Stonecat | B2 | | |
| <i>Percina caprodes</i> | Logperch | B2 | | |
| <i>Percina notogramma</i> | Stripeback Darter | B1/X | X | |
| <i>Percopsis omiscomaycus</i> | Trout-Perch | B1/X | X | |
| <i>Rhinichthys bowersi</i> | Cheat Minnow | A2 | | C2 |

AMPHIBIANS

| | | | | |
|-------------------------------------|--------------------------|------|---|----|
| <i>Ambystoma jeffersonianum</i> | Jefferson Salamander | C | | |
| <i>Ambystoma tigrinum</i> | Eastern Tiger Salamander | B1 | E | |
| <i>Aneides aeneus</i> | Green Salamander | B2 | E | C2 |
| <i>Cryptobranchus alleganiensis</i> | Hellbender | B1 | E | C2 |
| <i>Gastrophryne carolinensis</i> | Eastern Narrowmouth Toad | B3 | E | |
| <i>Hyla gratiosa</i> | Barking Treefrog | B2/U | | |

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|-------------------------------|----------------------|------|-----------|----|
| <i>Necturus maculosus</i> | Mudpuppy | B2 | | |
| <i>Plethodon wehrlei</i> | Wehrle's Salamander | B2 | | |
| <i>Pseudacris brachyphona</i> | Mountain Chorus Frog | B2 | | |
| <i>Rana virgatipes</i> | Carpenter Frog | B2 | I | |
| <i>Siren lacertina</i> | Greater Siren | B1/X | X | |

REPTILES

| | | | | |
|----------------------------------|-----------------------------|------|---|----|
| <i>Apalone spinifera</i> | Eastern Spiny Softshell | B2 | | |
| <i>Caretta caretta</i> | Atlantic Loggerhead Turtle | B1 | T | LT |
| <i>Cemophora coccinea</i> | Eastern Scarlet Snake | C | | |
| <i>Chelonia mydas</i> | Atlantic Green Turtle | B1 | T | LT |
| <i>Clemmys muhlenbergi</i> | Bog Turtle | C | | C2 |
| <i>Dermochelys coriacea</i> | Atlantic Leatherback Turtle | A2 | E | LE |
| <i>Eretmochelys imbricata</i> | Atlantic Hawksbill Turtle | A2 | E | LE |
| <i>Eumeces anthracinus</i> | Northern Coal Skink | B1 | E | |
| <i>Farancia erythrogramma</i> | Rainbow Snake | B1/X | X | |
| <i>Graptemys geographica</i> | Map Turtle | B2 | I | |
| <i>Lepidochelys kempfi</i> | Atlantic Ridley Turtle | A2 | E | LE |
| <i>Pituophis melanoleucus</i> | Northern Pine Snake | B1/U | | |
| <i>Virginia valeriae pulchra</i> | Mountain Earth Snake | B1 | E | |

BIRDS

| | | | | |
|---------------------------------|-------------------------|------|---|----|
| <i>Accipiter gentilis</i> | Northern Goshawk | B1 | | |
| <i>Accipiter striatus</i> | Sharp-shinned Hawk | B3 | | |
| <i>Aegolius acadicus</i> | Northern Saw-whet Owl | B3 | | |
| <i>Aimophila aestivalis</i> | Bachman's Sparrow | A3/X | X | C2 |
| <i>Ammodramus henslowii</i> | Henslow's Sparrow | B3 | I | |
| <i>Asio flammeus</i> | Short-eared Owl | B1 | I | |
| <i>Asio otus</i> | Long-eared Owl | B1/X | | |
| <i>Bartramia longicauda</i> | Upland Sandpiper | B1 | | |
| <i>Botaurus lentiginosus</i> | American Bittern | B2 | I | |
| <i>Campephilus principalis</i> | Ivory-billed Woodpecker | — | X | LE |
| <i>Carpodacus purpureus</i> | Purple Finch | C | | |
| <i>Catharus ustulatus</i> | Swainson's Thrush | B1/X | | |
| <i>Charadrius melodus</i> | Piping Plover | A3 | E | LT |
| <i>Charadrius wilsonia</i> | Wilson's Plover | B1 | | |
| <i>Chondestes grammacus</i> | Lark Sparrow | B1/X | X | |
| <i>Circus cyaneus</i> | Northern Harrier | B3 | | |
| <i>Cistothorus platensis</i> | Sedge Wren | B2 | I | |
| <i>Contopus borealis</i> | Olive-sided Flycatcher | B1/X | | |
| <i>Dendroica coronata</i> | Yellow-rumped Warbler | B2/U | | |
| <i>Dendroica fusca</i> | Blackburnian Warbler | C | | |
| <i>Egretta caerulea</i> | Little Blue Heron | B3 | I | |
| <i>Egretta tricolor</i> | Tricolored Heron | C | | |
| <i>Empidonax alnorum</i> | Alder Flycatcher | B3 | | |
| <i>Falco peregrinus</i> | Peregrine Falcon | B1 | E | LE |
| <i>Gallinula chloropus</i> | Common Moorhen | B3 | I | |
| <i>Haematopus palliatus</i> | American Oystercatcher | B3 | I | |
| <i>Haliaeetus leucocephalus</i> | Bald Eagle | B3 | E | LE |
| <i>Ixobrychus exilis</i> | Least Bittern | B3 | I | |
| <i>Junco hyemalis</i> | Dark-eyed Junco | B3 | | |
| <i>Lanius ludovicianus</i> | Loggerhead Shrike | B1 | E | C2 |
| <i>Laterallus jamaicensis</i> | Black Rail | B1 | I | |
| <i>Limnithlypis swainsonii</i> | Swainson's Warbler | B1 | I | |
| <i>Lophodytes cucullatus</i> | Hooded Merganser | B2 | | |
| <i>Numenius borealis</i> | Eskimo Curlew | — | X | LE |
| <i>Oporornis philadelphia</i> | Mourning Warbler | B2 | | |
| <i>Picoides borealis</i> | Red-cockaded Woodpecker | A3/X | X | LE |
| <i>Podilymbus podiceps</i> | Pied-billed Grebe | B2 | | |

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|--------------------------------|--------------------------|------|-----------|----|
| <i>Porzana carolina</i> | Sora | B2/U | | |
| <i>Regulus satrapa</i> | Golden-crowned Kinglet | B3 | | |
| <i>Rynchops niger</i> | Black Skimmer | B2 | T | |
| <i>Sitta canadensis</i> | Red-breasted Nuthatch | B2 | | |
| <i>Sphyrapicus varius</i> | Yellow-bellied Sapsucker | B1/X | | |
| <i>Spiza americana</i> | Dickcissel | C | | |
| <i>Sterna antillarum</i> | Least Tern | B2 | I | |
| <i>Sterna dougalli</i> | Roseate Tern | B1/X | X | LE |
| <i>Sterna maxima</i> | Royal Tern | B2 | | |
| <i>Sterna nilotica</i> | Gull-billed Tern | B1 | | |
| <i>Sterna sandvicensis</i> | Sandwich Tern | B1 | | |
| <i>Thryomanes bewickii</i> | Bewick's Wren | B1 | E | C1 |
| <i>Troglodytes troglodytes</i> | Winter Wren | B3 | | |
| <i>Tympanuchus cupido</i> | Greater Prairie Chicken | — | X | LE |
| <i>Tyto alba</i> | Common Barn-owl | C | | |
| <i>Vermivora ruficapilla</i> | Nashville Warbler | B3 | | |

MAMMALS

| | | | | |
|----------------------------------|------------------------------|------|---|----|
| <i>Balaena glacialis</i> | Black Right Whale | — | E | LE |
| <i>Balaenoptera borealis</i> | Sei Whale | — | E | LE |
| <i>Balaenoptera musculus</i> | Blue Whale | — | E | LE |
| <i>Balaenoptera physalus</i> | Finback Whale | — | E | LE |
| <i>Canis lupis</i> | Gray Wolf | — | X | LE |
| <i>Cervus canadensis</i> | American Elk | — | X | |
| <i>Condylura cristata parva</i> | Southeastern Star-nosed Mole | B1/U | | C2 |
| <i>Erethizon dorsatum</i> | Porcupine | B2 | I | |
| <i>Felis concolor</i> | Eastern Mountain Lion | — | X | LE |
| <i>Lepus americanus</i> | Snowshoe Hare | B2/X | X | |
| <i>Lynx rufus</i> | Bobcat | C | I | |
| <i>Martes americana</i> | Marten | — | X | 3C |
| <i>Megaptera novaeangliae</i> | Humpback Whale | — | E | LE |
| <i>Microtus chrotorrhinus</i> | Southern Rock Vole | A3 | | C2 |
| <i>Mustela nivalis</i> | Least Weasel | B2 | I | |
| <i>Myotis leibii</i> | Eastern Small-footed Bat | B2 | I | C2 |
| <i>Myotis sodalis</i> | Indiana Bat | A2 | E | LE |
| <i>Neotoma floridana</i> | Eastern Woodrat | C | | C2 |
| <i>Physeter catodon</i> | Sperm Whale | — | E | LE |
| <i>Reithrodontomys humulis</i> | Eastern Harvest Mouse | B2 | | |
| <i>Sciurus niger cinereus</i> | Delmarva Fox Squirrel | B2 | E | LE |
| <i>Sorex dispar</i> | Long-tailed Shrew | B1 | | C2 |
| <i>Sorex fumeus</i> | Smoky Shrew | B2 | | |
| <i>Sorex hoyi</i> | Southern Pygmy Shrew | A3 | | C2 |
| <i>Sorex longirostris</i> | Southeastern Shrew | B2 | I | |
| <i>Sorex palustris</i> | Southern Water Shrew | B1 | E | C2 |
| <i>Spilogale putorius</i> | Eastern Spotted Skunk | B2 | | |
| <i>Sylvilagus transitionalis</i> | New England Cottontail | A3 | | C2 |
| <i>Synaptomys cooperi</i> | Southern Bog Lemming | B3 | | |
| <i>Ursus americanus</i> | Black Bear | B3 | | |