

***Shoreline Alterations on Atlantic
Coastal Plain Flora Lakeshores in
Yarmouth County:***



ENDANGERED - Pink Coreopsis (P. MacDonald 1998)

***Considerations for Endangered Plant Species
in the Tusket and Annis River Watersheds***

Background - The National Significance of the Tusket and Annis Watersheds:

The Tusket River Watershed and the Annis River Watershed in Yarmouth County provide significant habitat for several species of plants found nowhere else in Canada.



These watersheds are part of the Atlantic Coastal Plain and the unique assemblage of plants which grow there are together known as the Atlantic Coastal Plain Flora. The Tusket watershed also provides habitat for the endangered and globally imperiled Atlantic Whitefish (*Coreogonus huntsmani*), known from only one other river in the world (Petite River in Nova Scotia).

ENDANGERED - Water Pennywort (R. Newell 2000)

About 64 species of plants are considered as representing the Atlantic Coastal Plain Flora in Nova Scotia. Several species of plants are at risk from human development activities including Pink Coreopsis (*Coreopsis rosea*), Plymouth Gentian (*Sabatia kennedyana*), and Water Pennywort (*Hydrocotyle umbellata*). Endangered and threatened coastal plain plants and their habitat are protected by the prohibitions defined under the Nova Scotia Endangered Species Act (1998) and certain regulations under the Nova Scotia Environment Act.



ENDANGERED - Pink Coreopsis (Elderkin 2001)



For more details on the legislation, the prohibitions, or on the categories of risk assigned to any of these species under the Endangered Species Act; see the Wildlife Division of Nova Scotia Department of Natural Resources web page at:

<http://www.gov.ns.ca/natr/WILDLIFE/index.HTM>. For additional information on the Atlantic Coastal Plain Flora and ongoing recovery efforts in Nova Scotia see:

<http://www.speciesatrisk.ca/coastalplainflora>.

ENDANGERED - Plymouth Gentian (Elderkin 2001)

The Importance of Lakeshore Habitats on the Tusket and Annis Watersheds:

A study completed recently by the Acadia Centre for Wildlife and Conservation Biology assessed the sources and magnitude of threats to the coastal plain flora on lakeshores in South Western Nova Scotia (See S.T. Eaton and J.S. Boates 2002). Findings of this study showed that recreational development of shore land habitats in freshwater lakes of the Tusket and Annis watersheds is the most important threat affecting the survival of the remaining populations of Pink Coreopsis, Plymouth Gentian and Water Pennywort. Findings of this study also reinforced the conclusions of earlier research initiated in the 1970's by Dr. Paul Keddy and later continued by Dr. Nicolas Hill to the present. Specific threats of recreational development and non-compatible use of shore land habitat that negatively affect populations of these endangered, threatened and vulnerable plants include:

- (1) Fragmentation of shore lands by construction of wharves.
- (2) Removal, Translocation, Importation of soils, sands, sediments, rock, on the shore land.
- (3) Killing native vegetation and species of plants at risk by manual, chemical, or mechanical means via trampling, use of ATV's and other vehicles on shore land, picking plants, mowing, herbicides, use of fertilizers etc.
- (4) Eutrophication of shore land and waters by use of fertilizers, improper septic and outhouse facilities.
- (5) Failure to maintain native vegetation in the riparian (terrestrial) zone which increases likelihood of invasion of shore land habitat by exotic plants and the potential for eutrophication.

Habitat of Pink Coreopsis, Plymouth Gentian and Water Pennywort is characterized by low gradient lakeshores with a high prevalence of cobble, sand and/or gravel on the shore below the ordinary high water mark (See Wilson's Lake Photo). Conservation and protection of natural lakeshore habitat is important to ensure that natural disturbance processes are maintained. Fragmentation of linear lakeshores by wharves and moving rocks/sediments adversely affects natural processes necessary for plants to reproduce, disperse and survive. Illegal use of ATV's and other types of vehicles on shore land,



mowing the shore land, use of herbicides and trampling - kills plants and damages the habitat of these endangered plants. For all of these reasons, it is important that the impacts of human activities are eliminated or minimized as much as possible.

Low gradient lake shore habitat of Pink Coreopsis, Plymouth Gentian and Water Pennywort at Wilson's Lake Nature Reserve (Elderkin 2001)

Restrictions for Wharves Permitting and Shore Land Alteration Applied by Nova Scotia Department of Environment

Lake waters, the land below the lake and all lands up to the "ordinary high water mark" are the property of the Crown (Crown Lands Act) and are therefore subject to laws affecting the use of both waters and all shore lands in the province. New standards are now being applied by the Nova Scotia Department of Environment for issuing permits for wharf construction and shore land alterations on 13 lakes on the Tusket and Annis watershed. The new standards apply only to lakes in Yarmouth County where endangered and threatened plants are known to occur in the Tusket and Annis watersheds. For a complete list of lakes where the new standards currently are being applied see the attached map.

Issuance of Wharf Permits

Wharf permits may not be issued to individual property owners on any of the 13 lakes identified (See list attached) if it is determined that the shore land provides occupied or future habitat for Pink Coreopsis, Plymouth Gentian or Water Pennywort. Properties with existing wharves, or those property owners that were issued permits prior to application of these new standards (2002) will be "grand fathered" and are not affected.

Issuance of Permits for Alteration of Lake Shore Lands

Permits for alteration of lake shore lands may not be issued to individual property owners on any of the 13 lakes identified (See list attached) if it is determined that the shore land provides occupied or future habitat for Pink Coreopsis, Plymouth Gentian or Water Pennywort. Properties with shore lands previously altered under permit, or those property owners that were issued permits prior to application of these new standards (2002) are not affected unless new construction or replacement is proposed.

Site Assessment:

The determination of whether a shore land provides occupied, or future habitat will be made by the Regional Biologist of Nova Scotia Department of Natural Resources who will advise the Nova Scotia Department of Environment & Labour. Only the Nova Scotia Department of Environment & Labour issues permits.

Priority Lakes Within the Annis and Tusket River Watershed Where Restrictions on Watercourse Alterations May Apply

- | | |
|---------------------|----------------------|
| (1) Salmon Lake | (8) Pearl Lake |
| (2) Kedgeshook Lake | (9) Kempt Snare Lake |
| (3) Wilson's Lake | (10) Travis Lake |
| (4) Third Lake | (11) Lake Fanning |
| (5) Gillfilan Lake | (12) Sloan's Lake |
| (6) Lac de l'Ecole | (13) Agard Lake |
| (7) Bennett's Lake | |

Applying For A Permit:

If you intend to apply for a permit you should contact an Inspector with the Nova Scotia Department of Environment & Labour at the Yarmouth Office. The Inspector will bring your application to the attention of the Regional Biologist with Nova Scotia Department of Natural Resources. A determination will be made if the shore land in front of your property is occupied by endangered plants, or if the shore land provides suitable future habitat. If it is found that the shore land meets neither of these categories of suitability, a permit may be issued at the discretion of the inspector. You can reach the Nova Scotia Department of Environment & Labour by visiting their office at 13 First St., Yarmouth, N.S., or by calling (902) 742-8985.