



Photo Credit: George Bosworth

Ownership/ Visit

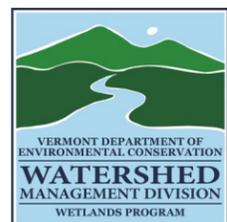
The Dennis Pond Basin is part of the Champion Lands conservation initiative, which involved the protection of 132,000 acres of forest land previously owned by the Champion International Paper Company. Several partners were involved in acquiring the land: The Conservation Fund, The Nature Conservancy, The VT Land Trust, US Fish & Wildlife, the VT Housing & Conservation Board, and the VT Agency of Natural Resources. After the project's completion in 1999, the land was divided among the US Fish & Wildlife Service as part of the Silvio O. Conte National Wildlife Refuge, VT Fish & Wildlife as the West Mountain Wildlife Management Area (WMA), and Plum Creek Timber Company. The Vermont Land Trust holds a conservation easement on the timberlands, requiring Plum Creek and any future landowners to use sustainable forestry practices. The Champion Lands remain accessible to the public for outdoor recreation.

Dennis Pond is located within the WMA, and the northern edge of Mud Pond falls within the Plum Creek Timberlands. A portion of the wetlands to the southwest of Mud Pond and the northeast of Dennis Pond are privately owned. The area is accessible via Route 102 and Dennis Pond Road in Brunswick. A VAST trail follows the western edge of the basin.

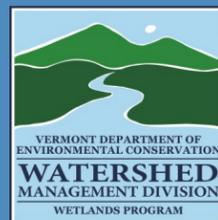
Notable Species

- ◆ Moose
- ◆ Fisher
- ◆ Great Blue Heron
- ◆ Boreal Chickadee
- ◆ Mink Frog
- ◆ Sphagnum Moss
- ◆ Rose Pogonia
- ◆ Three-seeded Sedge

Dennis Pond Wetland Complex: Vermont CLASS I WETLAND CANDIDATE



Vermont Wetlands Program
 1 National Life Drive, Main 2
 Montpelier, VT 05620-3522
www.vtwaterquality.org/wetlands.htm
 802-490-6100 or email address



The Functions & Values of a Wetland

- ◆ Water Storage for Flood Water & Storm Runoff
- ◆ Surface & Ground Water Protection
- ◆ Fish Habitat
- ◆ Wildlife Habitat
- ◆ Exemplary Wetland Natural Community
- ◆ Rare, Threatened, & Endangered Species Habitat
- ◆ Education and Research in Natural Sciences
- ◆ Recreational Value & Economic Benefits
- ◆ Open Space & Aesthetics
- ◆ Erosion Control

Preserving wetland function for future generations.

The Dennis Pond Basin is a biodiversity hotspot. It contains nearly 400 acres of pond and wetland habitat in the Northeast Kingdom, and is part of the Champion Lands — the largest conservation project in Vermont, encompassing 132,000 acres of forestland and stretching across 14 Vermont towns.

The State of Vermont ranks the significance of wetlands based on 10 functions and values they provide for the public and the environment. According to these criteria, the Dennis Pond Basin wetlands are highly significant.

The Dennis Pond Basin contains exceptional examples of several uncommon natural communities, and is home to a variety of rare, threatened, and endangered plants and animals. Because these habitats are bordered by a vast expanse of relatively unfragmented forestland, they are important for wide-ranging animals such as moose and fisher.

The substrate in most of these wetlands consists of a thick layer of peat (partially decomposed plant material). The peat and living vegetation provide long-term carbon storage, playing an important role in mitigating climate change. Unlike some natural communi-

ties that may regenerate relatively quickly after a major disturbance, the peatlands in the Dennis Pond Basin formed over thousands of years and these unique and important wetlands are irreplaceable.

The Dennis Pond Basin is part of the much larger Connecticut River Basin, and the wetlands provide important functions for the greater watershed. First, the two ponds and expansive peatlands have significant floodwater storage capacity. By absorbing precipitation and runoff, they protect areas along Wheeler Stream and the Connecticut River from flood damage. Second, the wetland vegetation filters out pollutants, helping to keep them out of surface and groundwater.

An ecological treasure, the Dennis Pond Basin provides countless benefits to the environment and the general public, and merits the highest level of protection.



Planning for the **FUTURE**

Class I
Wetlands
Candidate

Dennis Pond Basin Wetlands

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Photo credit: Brett Engstrom

What is a Class I Wetland?

These wetlands have a high rating in one or more of the listed 10 functions and values. They are healthy, in great condition, and intact. A Class I wetland is considered exceptional or irreplaceable, and deserves the highest level of protection under the Vermont Wetland rules. Criteria and sub-criteria have been developed to evaluate these special wetlands.

Criteria

- ◆ Representative Example of Wetland Type
- ◆ Rare Community Type
- ◆ Community Assemblage/ Wetland Complex
- ◆ Landscape Association

Subcriteria

- ◆ Rare, Threatened, or Endangered Species present
- ◆ Undisturbed Condition
- ◆ Intact Landscape
- ◆ Research/ Education
- ◆ Connectivity



The Dennis Pond Basin is in the Northeast Kingdom, which is characterized by a cold, moist climate and a short growing season. The dense boreal forests consist mostly of coniferous trees, which can tolerate the harsh conditions.

When the last glacier retreated 13,500 years ago, pockets of ice were left in low basins throughout the region. The ice later melted and formed small water bodies such as Dennis and Mud Ponds.

Forests gradually became established in the area; however, the icy cold water and acidic bedrock limited biological activity in the ponds. Plants growing along the margins decomposed very slowly, and over time, the dead plant material built up in dense mats within the pond. This material, called peat, became the substrate for sphagnum moss and other plants, and gradually expanded inward over the open water. The resulting wetlands are called bogs and fens.

Only certain specialized plants are able to tolerate the acidic, nutrient-poor conditions in these wetlands. Fens are less acidic than bogs because they receive inflow from groundwater seeps and streams, which carry dissolved minerals.

The primary natural community surrounding Dennis Pond is a Poor Fen as described in the classification system by Ver-



mont Fish and Wildlife's Natural Heritage Inventory. In the fen, thick hummocks of peat are isolated from the enriched water, and support plants similar to those in a bog. Areas of standing water support different vegetation, such as sedges and

Dennis Pond Basin Wetlands

Ecology & Wildlife

a variety of rare flowering plants. Many of the Basin's rare species occur in these hollows.

The Basin also supports a variety of softwood and hardwood swamps, including representative examples of a Northern White Cedar Swamp and a Black Spruce Swamp.

Aside from a few logging roads, snowmobile trails, and hunting cabins, the Dennis Pond Basin is undeveloped. This varied, intact ecosystem supports a great diversity of wildlife. It serves as a breeding site for amphibians, and supports many rare invertebrates including butterflies and dragonflies. Moose and white-tailed deer are prevalent. Other mammals that commonly use the wetlands include river otter, mink, and raccoon. A variety of birds feed and nest here, including the rare pied-billed grebe, rusty blackbird, and osprey.



Why It Matters

The Dennis Pond Basin is a spectacular wetland ecosystem containing a variety of exemplary and rare natural communities, and many rare, threatened, and endangered species.

The Dennis Pond Basin is accessible to the public, and provides immense recreational, educational, and aesthetic value. The wetlands also provide significant watershed functions for communities and ecosystems in the Connecticut River Basin, including floodwater storage and water quality protection.

The thick peat stores large amounts of carbon, and helps to slow the process of climate change.

The Basin is largely undeveloped; however, the wetlands are not free from human influence, and are very sensitive to disturbance. Threats include climate change, trampling of the fragile vegetation, invasive species, and land use that increases runoff, such as construction, roads, ATVs, and clear-cutting.

Since peatlands take thousands of years to form, they

are very difficult to restore. Any alteration of this unique ecosystem presents a threat to biodiversity, and a loss in the many functions and values it provides.

Reclassifying the Dennis Pond Basin as a Class I Wetland is an important step in protecting this valuable resource.

QUOTE FROM THE LITERATURE

"The Dennis Pond Basin, including Dennis Pond, Mud Pond and the adjacent wetlands, is an ecological treasure. The site is one of the most significant and interesting natural areas in Vermont. Extremely high-quality poor fen and the dystrophic ponds they surround are the largest natural communities in the complex."

From: Natural Communities and Rare Vascular Plants of West Mountain Wildlife Management Area and Nulhegan Basin Division of the Silvio O. Conte National Fish and Wildlife Refuge, Essex County, Vermont. Mapping Description and Ecological Management Recommendations," prepared by Marc Lapin and Brett Engstrom dated April 2002

Dennis Pond Class I Candidate

- ◆ **Exceptional Examples** of Poor Fen, Black Spruce Swamp, and Northern White Cedar Swamp
- ◆ **Rare Natural Communities:** Poor Fen, Black Spruce Swamp, Northern White Cedar Swamp, Sweet Gale Shoreline Swamp, Peaty Sand Pond-shore
- ◆ Large ~400-acre **Wetland Complex**, composed of many different natural communities
- ◆ At least 10 different **RTE Species**
- ◆ Wetlands in a relatively **Undisturbed Condition**
- ◆ **Part of an Intact and Unfragmented Landscape**
- ◆ Valuable Resource for **Education and Research**