

## **Petapawag Area of Critical Environmental Concern (ACEC)**

**Designation Date:** December 11, 2002

**Total Approximate Acreage:** 25,630 acres

**Watershed(s):** Nashua River and Merrimack River

**Municipalities (acres; % of ACEC):** Ayer (1,960; 8%), Dunstable (6,610; 26%), Groton (14,950; 58%), Pepperell (2,040; 8%), Tyngsborough (70; <1%)

### **Resource Summary**

#### ***Overview***

The Petapawag ACEC is approximately 25,630 acres in size, and is located in portions of Ayer, Dunstable, Groton, Pepperell, and Tyngsborough. The Petapawag ACEC is located along and to the east of the Nashua River, from the Town of Ayer north to New Hampshire. It is adjacent to the Squannassit ACEC, which is located along and to the west of the Nashua River from Route 2 in Harvard and Lancaster north to New Hampshire (the boundary of the Squannassit ACEC connects to the boundary of the Central Nashua River Valley ACEC to the south, along the Nashua River corridor). The Petapawag and Squannassit ACECs share the Nashua River corridor and its associated physical, biological and cultural resources and history. Although the two areas were nominated and designated as separate ACECs, it is important to state that the Nashua River corridor is a central resource feature of both of these ACECs.

#### ***Water Supplies***

There are significant drinking water resources present within the ACEC. High and medium-yield aquifers are located in all five towns of the ACEC. According to GIS mapping and recent DEP data, there are five municipal wells located within the ACEC, in Dunstable, Groton and Pepperell. The Groton and Pepperell wells, together with the two additional municipal wells located within the Squannassit ACEC, provide 100% of those towns' public water supply. The combined area of high- and medium-yield aquifers and the Zone II and Interim Wellhead Protection Areas for current water supply facilities totals approximately 3,570 acres, or 14% of the ACEC.

#### ***Habitat Resources***

According to comments provided by the Natural Heritage & Endangered Species Program (NHESP), documented records from their database indicate that there are 16 state-listed rare species known to occur within the boundaries of the Petapawag ACEC. This number includes seven Endangered Species, one Threatened, and eight listed as species of Special Concern. One of the state-listed Endangered species is also federally-listed as Threatened. Priority Habitats and Estimated Habitats for Rare Wildlife mapped by the NHESP cover approximately 2,560 acres or 10% of the ACEC.

The BioMap project of NHESP, published in 2001, delineated as Core Habitat those areas of the state which, if protected, would protect the most viable populations of rare plants and animals, the best examples of natural communities, and the breadth of biodiversity of the state. Approximately 13,910 acres or 54% of the Petapawag ACEC is BioMap Core Habitat. In addition, approximately 3,720 acres or 15% of the ACEC is designated as Supporting Natural Landscape, which are large, generally unfragmented areas that safeguard the Core Habitat while also including habitat for the common species of Massachusetts. Combined Core Habitat and Supporting Natural Landscape cover approximately 69% of the ACEC.

There are 15 NHESP Certified Vernal Pools within the ACEC. Also within the ACEC are 332 Potential Vernal Pools as identified through photointerpretation by the NHESP in the 2001 Massachusetts Aerial Survey of Potential Vernal Pools.

Portions of two “herp reserves” identified by the NHESP cover approximately 13,900 acres or 54% of the ACEC. From 1998 through 2000, the NHESP surveyed sites across the state for state-listed rare reptiles and amphibians, eventually choosing nine areas as potential “herp reserves” because of the presence of multiple rare herptile species, relative lack of habitat fragmentation, and diversity of wetland types interspersed with undeveloped uplands. The reserve areas were delineated around known rare species sites based on dispersal distances and habitat use for each rare herptile species represented at a site, so that the population of each species could have a high likelihood of long-term persistence.

### ***Land Use and Open Space***

According to Mass/GIS data, approximately 66% of the ACEC is comprised of forest and farmland. (Approximately 14,160 acres or 55% of the ACEC is comprised of forestland and approximately 2,670 acres or 10% is farmland.) Nearly 30% of the ACEC is comprised of protected open space and land under Chapter 61, 61A and 61B tax classification status. (Protected open space covers approximately 4,340 acres or 17% of the ACEC, and Chapter 61, 61A and 61B lands cover another 3,130 acres or 12% of the ACEC.)

The area contains unique and highly significant archaeological and historical resources, as well as scenic landscapes of statewide significance. There are three state-listed Historic Districts located in Groton. These Historic Districts are part of or are surrounded by scenic landscapes included in the 1982 Massachusetts Scenic Landscape Inventory prepared by the Department of Environmental Management (now the Department of Conservation and Recreation). Approximately 6,820 acres or 27% of the ACEC, mostly in Groton, are included in the Inventory. Several clusters of drumlins, mostly located in a north-south line through the central portion of Groton, are additional unique and distinctive features of the ACEC.

### **Water bodies included (partially or entirely) in the ACEC**

**Lakes, Ponds:** Flannagan Pond, pond south of Long Pond, Ayer; Lower Massapoag Pond, pond north of Hound Meadow Hill, Dunstable; Upper Massapoag and Wattles Ponds, pond at Burntmeadow, Groton; Pepperell Pond, Groton/Pepperell

#### **\* Great Ponds:**

Sandy/Sand Pond, Ayer; Long Pond, Ayer/Groton; Massapoag Pond, Dunstable/Groton/Tyngsborough; Knops Pond/Lost Lake, Whitney/Cow Pond, Martins and Baddacook Ponds, Groton

**Rivers, Streams, Brooks, Creeks:** Nashua River, Ayer/Dunstable/Groton/Pepperell; Nissitisset River, Pepperell; James Brook, Ayer/Groton; Black, Camp, Hawk, Horse Hill, Joint Grass and Short Brooks, Dunstable; Baddacook Pond, Blood, Cold Spring, Cow Pond, Martins Pond, NEFF, Nod, Naumox, Oxbow, Swamp and Tuity Brooks, Groton; Reedy Meadow and Unkety Books, Groton/Pepperell; Gardner, Greens, Kemp, Straight and Varnum Books, Pepperell; and several unnamed brooks.

**\* Boundary Note:** The final boundary includes Great Ponds and navigable rivers and streams as determined by the Massachusetts Waterways (or Chapter 91) Regulations (310 CMR 9.00), administered by the state Department of Environmental Protection (DEP). These Great Ponds and waterways will be included within the boundary of the Petapawag ACEC, but the effective date for these areas will be within a period of up to five years following the date of this ACEC designation. Further study and resource management planning for these water bodies is needed before they can be included within the boundary of the ACEC. See Petapawag ACEC designation document for more information.