

## **Walnut Hill Focus Area**

Alfred, Shapleigh & Sanford, Maine

### ***Description:***

The Walnut Hill Focus Area is a densely forested expanse of rolling uplands interspersed with a high density of stream drainages and several large wetland mosaics. Vernal pools and small pocket swamps are also numerous. All together the various upland forest types and the variety of wetlands create a landscape with a wide diversity of plant and animal habitats. Concentrations of pocket swamps and vernal pools in undeveloped landscapes are becoming increasingly rare in Maine. It is likely most of this area has never been tilled for farming do to the poor quality of the soils. Timber harvesting and pasture have probably been the primary historical use of these lands.



**Vernal Pool (from MNAP files)**

Vernal pools are ephemeral wetlands that typically fill with water from snow melt and spring run-off and often dry out over the course of the summer. They offer critical breeding habitat for some species of amphibians and invertebrates such as wood frogs, spotted and blue spotted salamanders, and fairy shrimp. The seasonal nature of the temporary pools maintains a fishless environment conducive to the successful breeding of these animals. Vernal pools are also used as feeding and breeding habitat by many other animals such as spring peepers, grey tree frogs, and other common amphibians, as well as by several rare species including Blandings

turtle (endangered), spotted turtles (threatened), and ringed bog haunter dragonflies (endangered). The amphibians and aquatic invertebrates that are dependent on these ponds for survival are an important food resource for other forest dwellers such as turtles, snakes, birds, and small mammals. The vegetated condition of vernal pools varies from completely vegetated, usually with sedges, grasses, ferns, and scattered shrubs, to non-vegetated, with only dead leaves on the pool bottom. Non-vegetated pools can be just as important for amphibians as those with plant cover.



1991 Infrared Aerial Photograph of the Walnut Hill Focus Area

Populations of three rare animal species have been documented from the area:

The wetlands and uplands in this focus area support the state endangered **Blandings turtle**. Blandings turtles are generally found only in the southern most part of the state where increasing development contributes to loss of habitat, habitat fragmentation, and loss of individuals at road crossings. Blandings turtles are most frequently associated with complexes

of small, acidic wetlands and vernal pools in large, intact forested landscapes. They also use small streams, shrub swamps, and wet meadows. Although these turtles spend most of their time in the water, they readily travel overland between wetlands during the spring and summer months. Upland habitats are critical for basking, aestivating (a period of late summer inactivity), nesting, and as travel corridors between wetlands.

Blandings turtles have evolved relatively long adult life spans to offset the long time it takes to reach reproductive maturity and to offset high levels of nest mortality. Because of this unusual life history, Blandings turtle populations are at low densities, and thus populations are extremely vulnerable to any human sources of adult mortality. Road mortality and collecting for pets, for example, can be deleterious as the attrition of just a few individuals every year can lead to the long-term decline and extinction of a local population. The secondary effects of human development – increased predator populations, pollution, filling of small wetlands, and blocking upland travel corridors – also limit populations. Blandings turtles are strictly protected from take (collecting, killing or in possession) by the Maine Endangered Species Act.

The **black racer** (state endangered) is the largest snake in Maine and may attain lengths of 6 feet. Maine is the northern extent of their range in the East. Although they were common as far north as Cobboosecontee Lake in the 1930's, they are now rare and their range is limited to York, Cumberland and southern Oxford counties. The black racer occurs in a variety of moist and dry habitats, including deciduous and coniferous forests; fields; woodlands interspersed with fields; and swamps or marshes. In southern Maine, open grasslands, power line rights of ways, orchards, old buildings, rocky ridges and the edges between forests and fields seem to be preferred habitats. Nesting sites include mammal burrows, rotting logs and stumps, and sawdust piles, and winter hibernation sites include mammal burrows, caves, rock crevices, gravel banks, and rotting logs and stumps. At the northern edge of their range, cold temperatures may contribute to hatchability of eggs and overwinter survival of adults. This species' numbers and range have declined drastically as agricultural land has reverted to forestland or has been developed. Habitat fragmentation results in increasingly small patches that can no longer support viable populations of the snakes. Increased road density may result in increased mortality. Racers have been killed by people and pets when they appear in yards. As a state-listed species, they are strictly protected from killing or collection as pets.

The state rare **ebony bog haunter dragonfly** has also been documented from wetlands within this focus area. These dragonflies use small peaty wetlands to complete their life cycles. Reproductive sites are typically small, acidic pocket swamps where patches of “*Sphagnum* soup” are interspersed with sedges, ferns, or shrubs. Although portions of these wetlands tend to dry up during summer months, some permanent open water generally persists. Adult dragonflies typically frequent upland forested areas up to several hundred feet from their natal wetland to bask and forage before returning to breed.

***Rare Species Table for Walnut Hill:***

Common Name	Latin Name	Status	S-Rank	G-Rank
<b>Rare Animals</b>				
Northern Black Racer	<i>Coluber constrictor constrictor</i>	E	S2	G5T?
Blanding's Turtle	<i>Emydoidea blandingii</i>	E	S2	G4
Ebony Boghaunter	<i>Williamsonia fletcheri</i>	SC	S3?	G3G4

***Other Resources Mapped by MDIFW:***

None mapped

**Conservation Considerations :**

- The integrity of wetlands and the processes and life forms they support including rare plants and animals are dependent on the maintenance of the current hydrology and water quality of the site. Intensive timber harvesting, vegetation clearing, soil disturbance, new roads, and development on buffering uplands can result in greater runoff, sedimentation, and other non-point sources of pollution that can degrade the high quality natural systems that occur here;
- No activities should be permitted that could lead to the loss or degradation of turtle wetlands including filling, dredging, sedimentation, or changing of hydrology unless the activity is approved by MDIFW.
- A minimum 250-foot forested buffer zone should be maintained around target wetlands with known Blanding's turtle locations. All wetlands, regardless of size, within 1/4 mile of mapped spotted turtle locations should be considered potential habitat for this wide ranging species, and protected from direct impacts, and buffered by forested upland.
- Impervious surfaces such as yards, buildings, parking lots, and roads should be minimized in the upland landscape within 1/4 mile of turtle wetlands. Natural forest habitat should predominate the landscape. Intensive developments that concentrate human populations and road traffic within 1/4 mile of turtle wetlands should be avoided including subdivisions and service centers.
- Less pervasive is degradation from incidental uses related to the increasing residential development in the area. Upland buffers can also play a major role in protection here. Care needs to be taken that ORV's stay on existing trails and remain out of all wetlands when the ground is not frozen. Existing trails should be reviewed with particular recreation and access needs in mind, and trails closed if they run counter to protection needs. Fragmenting features should be minimized where possible.
- Low-intensity cutting (single tree or small group selection, firewood harvest) is likely compatible with sensitive features as long as operators avoid wetlands. Winter harvests are recommended to minimize impacts to rare plants, animals, and wetland systems. Close adherence to Best Management Practices for forestry activities near vernal pools (see Forestry Endangered and Threatened Species Guide) will ensure the protection of wetland habitats and the amphibian food source they supply.

- Conservation planning for upland features should include setting some areas aside from timber harvesting to allow for the development of some unmanaged forest ecosystems.

***Protection Status:***

There is no known conservation ownership within the focus area.

### STATE RARITY RANKS

- S1** Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
- S2** Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- S3** Rare in Maine (on the order of 20-100 occurrences).
- S4** Apparently secure in Maine.
- S5** Demonstrably secure in Maine.

**Note:** **State Ranks** are determined by the Maine Natural Areas Program.

### GLOBAL RARITY RANKS

- G1** Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
- G2** Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- G3** Globally rare (on the order of 20-100 occurrences).
- G4** Apparently secure globally.
- G5** Demonstrably secure globally.

**Note:** **Global Ranks** are determined by The Nature Conservancy.

### STATE LEGAL STATUS FOR PLANTS

**Note:** State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's endangered and threatened plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

- E** ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future, or federally listed as Endangered.
- T** THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.
- SC** SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.

Visit our web site for more information on rare, threatened and endangered species!  
<http://www.state.me.us/doc/nrimc/mnap/factsheets/mnapfact.htm>