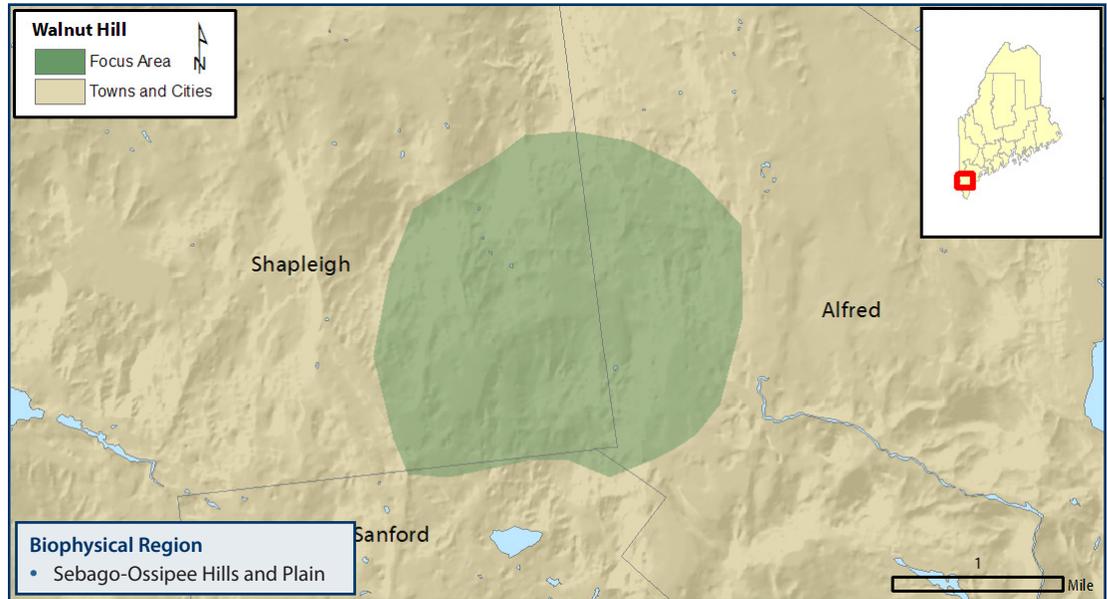


Walnut Hill



WHY IS THIS AREA SIGNIFICANT?

The densely forested expanse of undeveloped rolling uplands interspersed with a high density of stream drainages, several large wetland mosaics and numerous pocket swamps and vernal pools creates a landscape with a wide diversity of plant and animal habitats. Most notably, the numerous wetlands in the Walnut Hill Focus Area serve as important habitat for the rare Blanding's turtle.

Rare Animals

Northern Black Racer
Blanding's Turtle

Significant Wildlife Habitats

Inland Wading Bird and Waterfowl Habitat
Significant Vernal Pools

OPPORTUNITIES FOR CONSERVATION

- » Work with willing landowners to secure permanent conservation status for significant features in the Focus Area.
- » Encourage best management practices for forestry, vegetation clearing, and soil disturbance activities near significant features.
- » Encourage landowners to maintain enhanced riparian buffers.
- » Maintain natural hydrology by avoiding drainage or impoundment of the wetlands, streams and water bodies.

Refer to the Beginning with Habitat Online Toolbox for more conservation opportunities: www.beginningwithhabitat.org/toolbox/about_toolbox.html.

Photo credits, top to bottom: Jonathan Mays, MDIFW, MDIFW, MDIFW, Jonathan Mays



Vernal Pool, MDIFW

FOCUS AREA OVERVIEW

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 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 pools and other wetlands are numerous throughout the Walnut Hill Focus Area. 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. The amphibians

and aquatic invertebrates that are dependent on these ponds for survival are an important food resource for other more conspicuous 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.



Wood Frog, MDIFW

Significant vernal pools are recognized and protected under the Natural Resources Protection Act. The Department of Environmental Protection (DEP) has established criteria to identify *significant* vernal pools. Development activity within 250 of significant vernal pools, may require a permit from the Department of Environmental Protection (DEP).

CHARACTERISTIC SPECIES

The wetlands and uplands in this Focus Area support the state Endangered Blanding's turtle. **Blanding's turtles** (*Emys blandingii*) are generally found only in the southern most part of the state where increasing development contributes to loss of habitat, habitat fragmentation, and road kill. Blanding's 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.

Blanding's turtles have evolved relatively long adult life spans to offset the long time it takes to reach reproductive maturity (15 yrs. or more) and to offset high levels of nest and juvenile mortality. Because of this unusual life history, Blanding's 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 (eg. dogs, cats, raccoons, skunks), water, light and noise pollution, filling of small wetlands, and blocking upland travel corridors – also impact populations. Blanding's turtles are strictly protected from take (collecting, killing or in possession) by the Maine Endangered Species Act.



Blanding's Turtle, MDIFW

Ecological Services of the Focus Area

- Provides high quality habitat for waterfowl, wading birds, and other wildlife.
- Protects water quality in local ponds, streams and the Mousam River.
- Contributes to regional biodiversity

Economic Contributions of the Focus Area

- Serves as a valuable recreational resource for local residents.
- Contributes to recreational value of Mousam River by protecting water quality, fisheries, and wildlife habitat.
- Provides timber products.

Upland portions of the Focus Area offer habitat for the state Endangered **black racer** snake. The black racer (*Coluber constrictor constrictor*) 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 Cobbooseecontee Lake in the 1930's, they are now rare and their range is limited to York, Cumberland and southern Oxford counties. Open grasslands, sandy barrens, power line rights of ways, orchards, old buildings, rocky ridges and the edges between forests and fields seem to be preferred habitats. Already ecologically stressed by cold winters and short growing seasons at the northern edge of their range in Maine, racers are now faced with additional threats to their habitat. This species' numbers and range have declined drastically as agricultural land has reverted to forestland or has been developed. Habitat fragmentation has resulted in increasingly small patches that can no longer support viable populations of the snakes. Increased road density and traffic volume may result in increased threat to this wide ranging snake. Protection of large blocks of unfragmented, early successional habitat is probably the most important means of conserving this species in the state. 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.

Several of the unnamed wetlands in the Focus Area also provide important **Inland Waterfowl and Wading Bird Habitat**. These areas provide undisturbed nesting habitat and feeding areas and are essential for maintaining viable waterfowl and wading bird populations.

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 nonpoint sources of pollution that can degrade the high quality natural systems that occur here. In addition, improperly sized crossing structures such as culverts can impede movement of fish and aquatic invertebrates effectively fragmenting local aquatic ecosystems and ultimately leading to local extirpation of some species. Future management activity should avoid additional impacts to the site's hydrology.
- » This area includes Significant Vernal Pools and Inland Wading Bird and Waterfowl Habitats, both Significant Wildlife Habitats identified under the Natural Resources Protection Act. Permits may be necessary for certain activities located within or adjacent to these habitats. Both land managers and private landowners should follow best management practices in and around wetlands, shoreland areas, and Significant Wildlife Habitat. Maintaining wide forested buffers along all lakes, rivers, streams, and wetlands will provide valuable riparian habitat for many wildlife species.
 - » 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 reviewed and 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 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 (available from Maine Audubon Society at 207-781-6180 ext. 222 or bwilson@maineaudubon.org) will generally ensure the protection of wetland habitats and the amphibian food source they supply.
 - » Invasive plants and aquatic organisms have become an increasing problem in Maine and a threat to the state's natural communities. Disturbances to soils and natural vegetation and introductions of non-native species to terrestrial and aquatic habitats can create opportunities for colonization. Landowners and local conservation groups should be made aware of the potential threat of invasive species, of methods to limit establishment, and/or of appropriate techniques for removal. For more information on invasive plants visit: <http://www.maine.gov/doc/nrimc/mnap/features/invasives.htm>.
 - » With expected changes in climate over the next century, plant and wildlife species will shift their ranges. Maintaining landscape connections between undeveloped habitats will provide an important safety net for biodiversity as species adjust their ranges to future climate conditions.



Spotted Salamander, MDIFW

RARE SPECIES AND EXEMPLARY NATURAL COMMUNITIES OF THE FOCUS AREA

	Common Name	Scientific Name	State Status*	State Rarity Rank	Global Rarity Rank
Animals	Northern Black Racer	<i>Coluber constrictor constrictor</i>	E	S2	G4
	Blanding's Turtle	<i>Emys blandingii</i>	SC	S3	G4

State Status*

- 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 Threatened or Endangered.

*State status rankings are not assigned to natural communities.

State Rarity Rank

- S1 Critically imperiled in Maine because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres).
- 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.

Global Rarity Rank

- G1 Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation.
- 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.