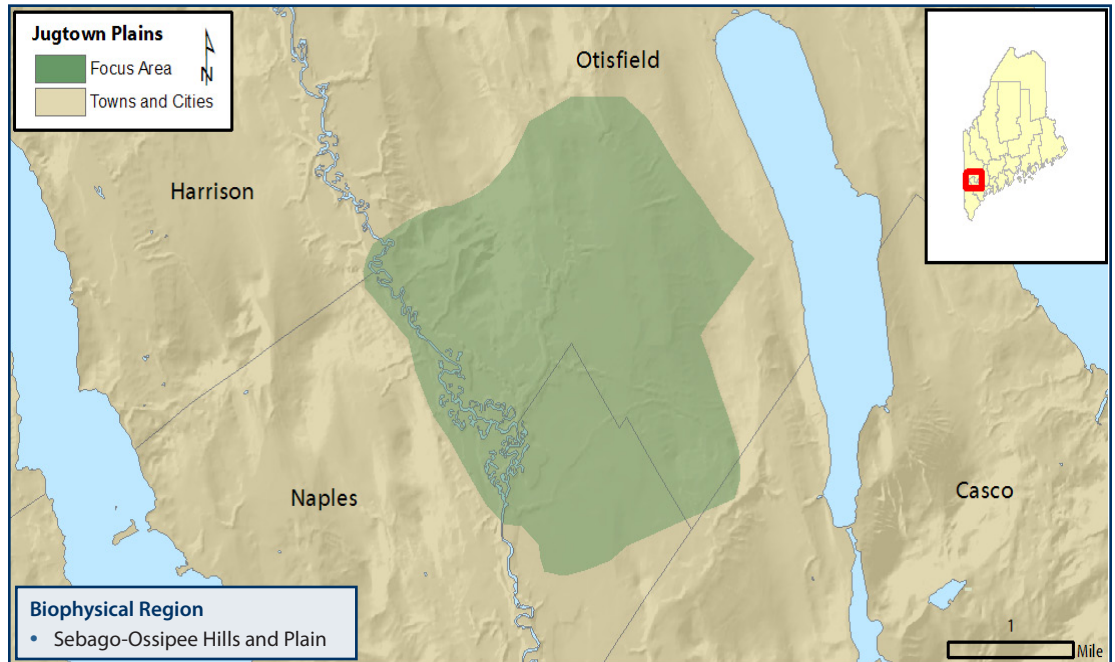


Jugtown Plains



WHY IS THIS AREA SIGNIFICANT?

Jugtown Plains includes the northernmost example of pitch pine - heath barrens, a rare natural community type. Due to increasing development pressure, pitch pine - heath barrens are rapidly declining along the east coast.

OPPORTUNITIES FOR CONSERVATION

- » Work with willing landowners to permanently protect remaining undeveloped areas and significant features.
- » Protect sensitive natural features through careful management planning on conserved lands.
- » Encourage town planners to improve approaches to development that may impact focus area functions.
- » Maintain enhanced riparian buffers.
- » Encourage best management practices for forestry, vegetation clearing, and soil disturbance activities near significant features.
- » Limit use of pesticides, especially aerial spraying.
- » Work with willing landowners of large parcels to consider prescriptive burning (managed fire) as a tool for maintaining and enhancing pine barren habitats.

For more conservation opportunities, visit the Beginning with Habitat Online Toolbox: www.beginningwithhabitat.org/toolbox/about_toolbox.html.

Rare Animals

Acadian Swordgrass Moth

Rare and Exemplary Natural Communities

Pitch Pine - Heath Barren

Significant Wildlife Habitats

Inland Wading Bird and Waterfowl Habitat
Deer Wintering Area

Public Access Opportunities

- » Jugtown Plains, MBPL

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Jugtown Plains, Maine Natural Areas Program

FOCUS AREA OVERVIEW

Jugtown Plains is a 4,400 acre area of relatively unfragmented forest that includes a pitch pine - heath barren on a sandy outwash plain. The pitch pine - heath barren at Jugtown Plains is the northernmost example of this natural community type. As in other parts of its range, pitch pine - heath barrens are experiencing tremendous development pressure in Maine. The barrens support Acadian swordgrass moth, a rare species, found only in few sites in the state, all of which are pitch pine dominated.

RARE AND EXEMPLARY NATURAL COMMUNITIES

The distribution of **pitch pine - heath barren** follows the occurrence of glacially-derived sandy soils in southwestern Maine, where the history of fire and droughty soil conditions combine to create adequate conditions for this community. The relatively open canopy of pitch pine - heath barrens consists primarily of white pine, pitch pine, and gray birch. The understory consists of a heath shrub layer dominated by lowbush blueberry that is essentially continuous and well-developed. This community type is found on sandy, porous glacial deposits. The soils derived from these coarse glacial sands, such as Windsor loamy sand, are very well-drained soils which yield droughty conditions for vegetation. The dry, nutri-

ent poor soils create harsh growing conditions resulting in a depauperate flora.

Pitch pine growing in optimum conditions can live up to 200 years old and grow to a maximum of 100 feet high. Fire is a significant factor in the perpetuation of this community type and is necessary to preserve the long-term dynamics, species composition and vegetation structure of pitch pine - heath barrens. In the absence of fire, reproduction of pitch pine is less likely and succession may lead to the dominance of white pine. Other disturbance mechanisms which expose mineral soil, such as logging, may also encourage regeneration of pitch pine.

CHARACTERISTIC SPECIES

The **Acadian swordgrass moth** (*Xylena thoracica*) is a species of Special Concern that is documented to occur within the Jugtown Plains Focus Area. It is currently known from only six sites in Maine, all of which are pitch pine dominated. This moth is typically found in hard pine forests (e.g., pitch pine, jack pine) and may also occur in bog habitats, especially in northern areas. Its larval host plants include blueberry, which is common and abundant. However, the Acadian swordgrass moth is rarely collected in the East, and most occurrences are

in pitch pine or jack pine barrens. If this species is tied primarily to pitch pine - scrub oak barrens in Maine, its potential habitat is very limited.

The Jugtown Plains Focus Area includes a large **Deer Wintering Area** at its southern end. Deer congregate in wintering areas which provide reduced snow depths, ample food, and protection from wind. In addition, **Inland Wading Bird and Waterfowl Habitat** is associated with meander scar ponds west of the Crooked River and emergent wetlands associated with Middle Brook. These areas provide undisturbed nesting habitat and undisturbed, uncontaminated feeding areas, and are essential for maintaining viable waterfowl and wading bird populations. Both Deer Wintering Areas and Inland Wading Bird and Waterfowl Habitats are identified as Significant Wildlife Habitat under the Natural Resources Protection Act.

In addition, both the Smith and Burgess Brook Watershed and the Crooked River supports significant wild brook trout and land locked salmon fisheries.

CONSERVATION CONSIDERATIONS

- » Fire suppression is a source of stress at Jugtown Plains. Without the reintroduction of fire or some equivalent vegetation management program, pine barrens community types may succeed to more mesic forest types dominated by red and white oak, and white pine. Only those sites that are the most xeric or frost prone will likely maintain barrens habitat. A loss of barrens community types will lead to a loss of habitat for many rare barrens dependent fauna.
- » The integrity of wetlands and aquatic systems including all the processes and life forms they support are dependent on the maintenance of the current hydrology and water quality of these systems. 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. 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.
- » Intensive timber management can lead to increased fragmentation and isolation of habitat patches and conversion to other forest types. However, forestry applied properly within pitch pine habitats may actually help regenerate some barrens community types.
- » This area is important for wintering deer. Deer are, however, consuming much of the pitch pine seedlings and impacting

Ecological Services of the Focus Area

- Supports diverse plant species and natural communities and contributes to regional biodiversity
- Provides wildlife habitat

Economic Contributions of the Focus Area

- Provides residents and visitors with recreational opportunities such as hiking, camping, and wildlife watching
- Provides forest products



Jugtown Plains, The Nature Conservancy

pitch pine regeneration.

- » Mining can have a direct negative impact through permanent loss of habitat, as well as potentially impacting stream sedimentation and water quality. In some cases, restoration of abandoned gravel pits may be possible but the feasibility of such projects may be restrictive.
- » If Gypsy moths become a problem in the vicinity of Jugtown Plains and aerial spraying of BT (*Bacillus thuringiensis*) is called for, care should be taken not to let BT impact the barrens area. While BT is believed to pose no threat to higher organisms, it is NOT host specific within the order Lepidoptera (moths and butterflies) and thus poses a potentially severe threat to rare moths and butterflies present at the site. For this reason, and following consultation with Department of Inland Fisheries and Wildlife biologists, wide buffers should be flown around natural communities hosting known occurrences of rare Lepidoptera species when spraying pesticides for control of gypsy moths and other pests.

- » 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.
- » 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>.
- » This area includes Significant Wildlife Habitat for wintering deer and inland waterfowl and wading birds. Land managers should follow best management practices with respect to construction and forestry activities in and around wetlands, shoreland areas, and Significant Wildlife Habitat. Vegetation removal, soil disturbance and construction activities may require a permit under the Natural Resources Protection Act. Contact MDIFW for more information.

RARE SPECIES AND EXEMPLARY NATURAL COMMUNITIES OF THE FOCUS AREA

	Common Name	Scientific Name	State Status*	State Rarity Rank	Global Rarity Rank
Animals	Acadian Swordgrass Moth	<i>Xylena thoracica</i>	SC	S3	G4
Natural Communities	Pitch Pine - Heath Barren	Pitch pine - heath barren		S1	G3G5

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.