

Nulhegan Basin Division

Silvio O. Conte National Fish & Wildlife Refuge

Refuge Background

Congress passed the Silvio O. Conte National Fish and Wildlife Refuge (Conte refuge) Act (PL. 102-212) in 1991. The act authorized the U.S. Fish and Wildlife Service (Service) to establish a national fish and wildlife refuge to protect the diversity and abundance of native species within the Connecticut River watershed. The Nulhegan (pronounced Nul-HEE-gan) Basin in Northeastern Vermont was identified for possible future protection due to its high biological values. These include a variety of habitats supporting rare species, migratory birds, and native fish.

In 1997, Champion International Corporation announced that it would sell approximately 132,000 acres of land in Essex County, Vermont. The Service was offered ownership of 26,000-acres within the basin. The purchase of this area by the Service on July 21, 1999 marked the establishment of the Nulhegan Basin Division of the Conte refuge (Nulhegan refuge). The Vermont Agency of Natural Resources acquired about 22,000 acres adjacent to the basin to form the West Mountain Wildlife Management Area. Easements



Ruffed grouse
Robert Savannah

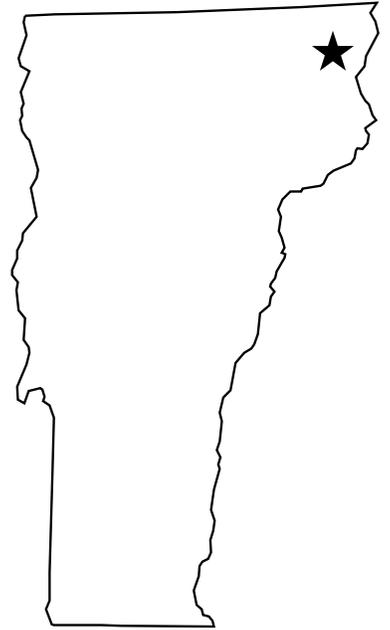
were placed on the remaining 84,000 acres that surround the federal and state properties to protect it from subdivision and development, but allow continued timber management and production. The combination of ownerships and easements on the 132,000-acres will provide long-term conservation of important wetland and upland wildlife habitats and allow traditional uses of the land to continue.

The Habitat

The Nulhegan Basin was formed when a pool of magma formed within existing metamorphic rock. The magma cooled into a relatively soft granite rock called quartz monzonite. Once erosion wore away the cap of metamorphic rock, the softer monzonite eroded more rapidly than the surrounding metamorphic rock. This resulted in a relatively flat, circular area, roughly 10 miles in diameter, surrounded by hills. Glaciers later deposited sand and gravel in the bottom of the basin. Elevations range from approximately 1,000 feet to 28,000 feet above sea level.

The Nulhegan Basin is the primary watershed of the Nulhegan River, an important tributary of the Connecticut River. The mainstream of the Nulhegan River runs adjacent to the south boundary of the refuge. Three of the four major tributaries of the Nulhegan River - the North, Yellow, and Black Branches - run south through the refuge. A network of smaller streams feed these branches. The 68-acre Lewis Pond is located in the northwest portion of the Nulhegan refuge.

Located just a few miles south of the Canadian border, the Nulhegan Basin's vegetation most closely resembles that of the northern Appalachian Mountains but also contains elements of the boreal forests that occurs farther to the north. The basin is predominantly forested, but contains many streams, beaver



*Location of the Nulhegan Basin
Division in Essex County, Vermont*

ponds, swamps, shrubby peat lands, and bogs.

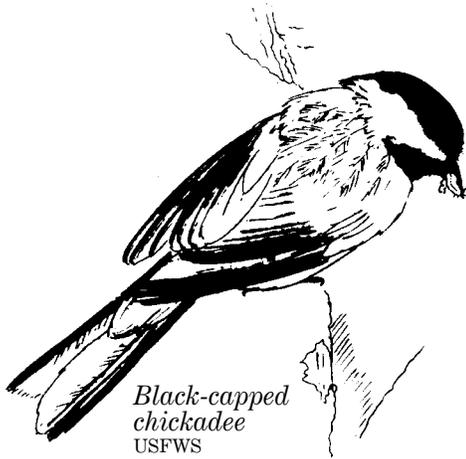
Northern hardwood forest, dominated by sugar and red maple, beech, and yellow and paper birch, cloaks the mountains of the basin interior. Quaking and bigtooth aspen also are common. Oaks are notably absent in the basin - another indicator of the more northern character of the forest. The basin bottom is dominated by spruce-fir forest. Red and black spruce and balsam fir are the principal trees in these forests. Tamarack, northern white cedar, black ash, and speckled alder also occur commonly in the wetland areas.

There are several rare plants found in the Nulhegan refuge including white-fringed orchid, bog sedge, shining rose, drooping bluegrass, and ligonberry. Most of these plants are associated with bogs and other peat lands.

Wildlife

The Nulhegan Basin is well known as a remote landscape with an abundance of wildlife. Over 100 species of birds use the area during the breeding season, including 43 species of neotropical migrants. A number of birds associated with boreal forests and therefore rarely seen this far south can be found, including the spruce grouse, gray jay, boreal chickadee, and black-backed woodpecker. American woodcock, ruffed grouse, waterfowl,

and various birds of prey also can be commonly observed. A variety of mammals including moose, black bear, white-tailed deer, snowshoe hare, red squirrel, beaver, fisher, and coyote live here. Reptiles include the garter snake, redbelly snake, ringneck snake, common snapping turtle, painted turtle, and wood turtle. A variety of amphibians can be seen or heard around wetlands, including spring peeper, mink frog, green frog, wood frog, pickerel frog, gray tree frog, bullfrog and several salamander species. Brook trout, bullhead, chain pickerel, chub, dace, and common shiners inhabit the Nulhegan River and its tributaries. Numerous butterflies, dragonflies, beetles and other invertebrates also are found in the varied habitats.



Black-capped chickadee
USFWS

Refuge Management

Nulhegan refuge is managed to conserve, protect, and enhance the natural diversity and abundance of plant, fish, and wildlife species and their habitats. Management programs are designed to benefit rare species, rare and exemplary natural communities, wetlands, migratory birds, other native fish and wildlife, and wintering habitat for deer and other species. Refuge lands also provide opportunities for scientific research and serve as a demonstration area to highlight successful wildlife management programs. Uses are managed to ensure compatibility with refuge purposes and the mission of the National Wildlife Refuge System.

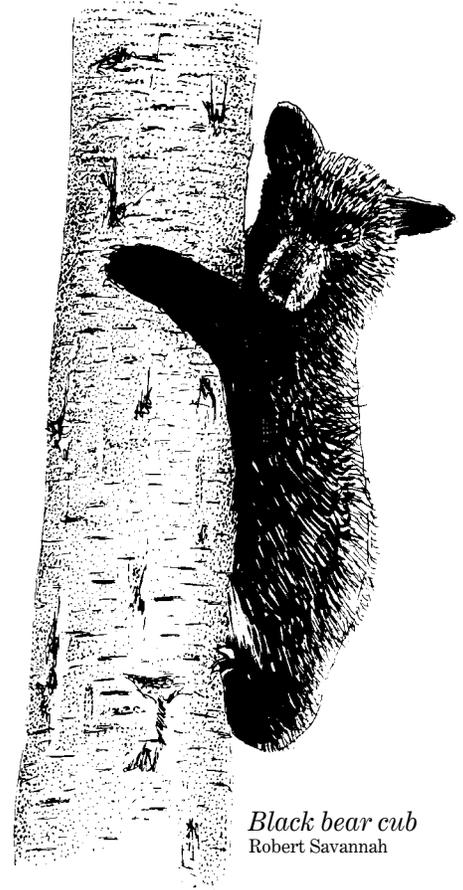
The Service and the Vermont Agency of Natural Resources collaborate on management of habitat, wildlife, and public uses on the refuge lands and adjacent state lands.

Wildlife-Dependent Recreational Opportunities

The refuge offers a variety of opportunities for compatible, wildlife-dependent recreation. With little intrusion by human development and an abundance of fish and game, extensive areas of the refuge offer high-quality hunting, fishing and trapping opportunities. Visitors also can view and photograph wildlife while driving on gravel roads, walking along wooded pathways, following stream courses, or while hiking in the deep woods. Many areas on the refuge provide scenic vistas of the Nulhegan Basin and the surrounding mountains. The Mollie Beattie Bog interpretive boardwalk, which is accessible to wheelchairs, provides visitors with information on bog habitat and wildlife. Programs are being developed for on-site and off-site environmental education and outreach. The public is welcome to visit the refuge year-round. However, the type of access (i.e., foot, automobile, snowmobile) permitted varies seasonally; please contact the refuge manager for details.

The Service

The Service is the principal Federal agency responsible for conserving, protecting and enhancing fish, wildlife and plants and their habitats for the continuing benefit of the American people. The Service manages the 97-million-acre National Wildlife Refuge System, which encompasses more than 548 national wildlife refuges, thousands of small wetlands and other special management areas. It also operates 70 national fish hatcheries, seven fish technology centers, nine fish health centers, one historic national fish hatchery, the Aquatic Animal Drug Approval Program and 78 ecological services field stations. The agency enforces federal wildlife laws, administers the Endangered Species Act, manages migratory bird populations, restores nationally significant fisheries, conserves and restores wildlife habitat such as wetlands, and helps foreign governments with their conservation efforts. It also oversees the Federal Aid program that distributes hundreds of millions of dollars in excise taxes on fishing and hunting equipment to state fish and wildlife agencies.



Black bear cub
Robert Savannah

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