SURVEY REPORT

Northern Saw-whet Owl (*Aegolius acadicus*), Balance Rock Road, East Hartland, CT.

Submitted to:
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Northern Saw-whet Owl Survey Report

Proposed construction of a telecommunications facility and its associated service road on Balance Rock Road, East Hartland, CT, will require removal of trees on-site. The CT-DEP Natural Diversity Database indicates that the Northern Saw-whet Owl (*Aegolius acadicus*), a state species of Special Concern (Connecticut Endangered Species Act 1989), occurs in the vicinity of the proposed site. A habitat assessment and survey for this species was carried out to comply with CT-DEP requirements.

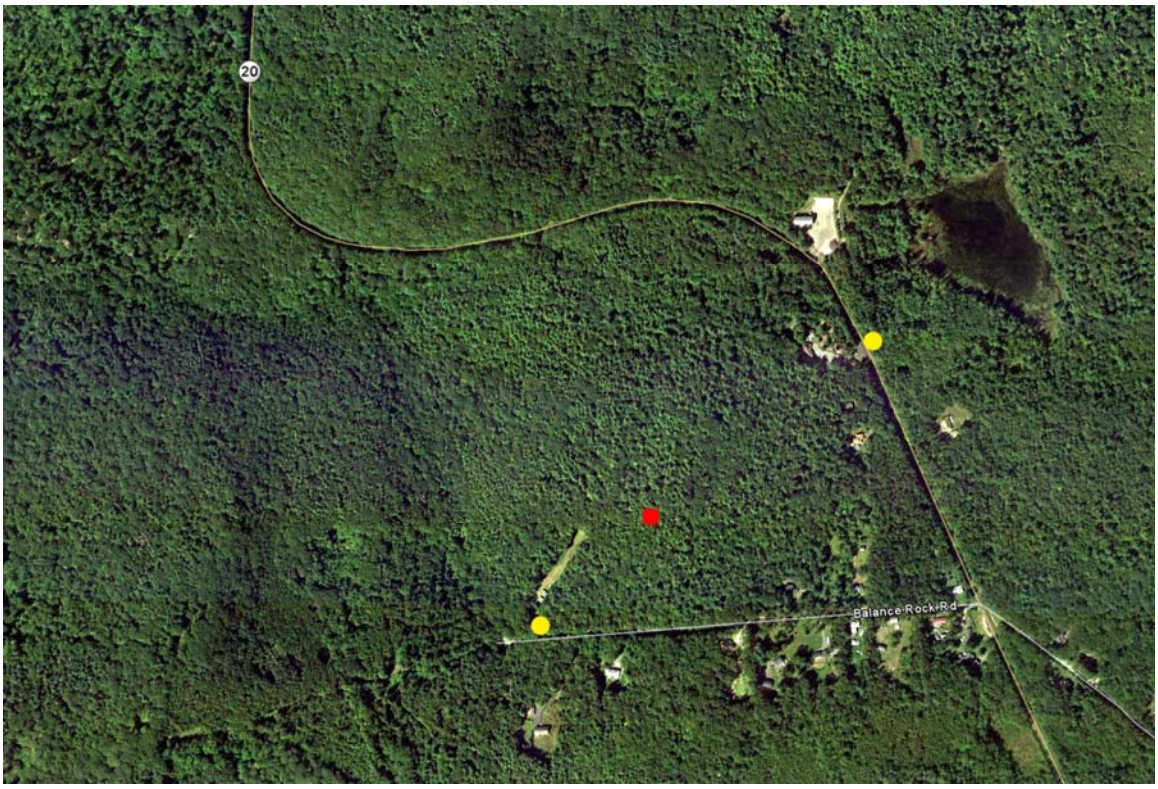


Figure 1: Aerial overview of Balance Rock Road, East Hartland, area. Location and approximate size of proposed area for development indicated in red. Callback survey points are indicated in yellow. In addition to the proposed construction site a service road will need to be constructed connecting the proposed site to Balance Rock Road.

METHODS

The proposed site and surrounding habitat was surveyed on two occasions. A habitat assessment and preliminary callback survey was carried out during the daytime on 20 December 2010. The proposed site and its surrounding habitat were searched for potentially suitable nest sites (cavities in large trees) during this site visit. A nighttime callback survey using recorded owl calls to assess the presence of Northern Saw-whet

Owl in the area was done on the night of 5 January 2011. Survey points were located at the entrance to the Ring Mountain Hunt Club and on a nearby location along Route 20 (see Figure 1). Weather conditions during the nighttime survey (16 degrees F with a clear, cloudless and moonless sky) were particularly suited for detection of Saw-whet Owls.

RESULTS

Habitat description

The area proposed for construction is located on property owned by the Ring Mountain Hunt Club. This property is bordered on the south side by Balance Rock Road and is surrounded by Tunxis State Forest on all other sides. The proposed location of the telecommunications facility is in the northeast corner of the Ring Mountain Hunt Club property and will occupy a footprint of approximately 150x150 feet. A service road is to be constructed, originating from a point on Balance Rock Road east of the Ring Mountain Hunt Club entrance and extending northward to the proposed construction site for a length of approximately 500ft. The proposed service road will largely follow a mostly overgrown historic logging trail (Dean Gustafson (VHB), pers. comm.).

The habitat on-site consists of mixed forest with a small intermittent stream and is adjacent to a wooded swamp. Several Eastern Hemlock (*Tsuga canadensis*) of significant size (6-10" DBH) occur throughout the site, while a variety of deciduous trees of varying ages, as well as locally dense stands of Mountain Laurel (*Kalmia* sp.), make up the remainder of the site's habitat. Habitat heterogeneity is high and snags, deadwood and coarse woody debris are present throughout the site (see Figures 2 & 3). Several high branches in the canopy appear to have been damaged by wind shear, possibly in combination with an ice storm, several years ago.

Balance Rock Road extends beyond the cul-de-sac as a gated unpaved road into Tunxis State Forest. Areas of managed young forest and dense scrub are located near the western border of the Ring Mountain Hunt Club property that includes the proposed site. Habitat in the section of Tunxis State Forest immediately adjacent to the proposed site (along the property's northern and eastern borders) is continuous with that of the Ring Mountain Hunt Club property and consists of mature mixed forest with a significant proportion of evergreens. See figures 2-3 for habitat images taken on site.

Figure 2: Overview of site's habitat in northeast corner of Ring Mountain Hunt Club property. Note yellow "State Property" markers on trees left of center, indicating proximity to Tunxis State Forest.

Figure 3: Mixed forest habitat on-site, indicative of area's habitat heterogeneity and density of evergreens.

Tree cavity search

Several dead branches and abandoned and weathered woodpecker cavities were observed in the tops of some area trees. Trees of sufficient girth to allow for tree cavities that could accommodate and potentially serve as nest sites for Northern Saw-whet Owl are present in the area. Several evergreens occur at the site and locally form fairly dense stands, conceivably providing suitable cover for a daytime roost site. Habitat heterogeneity is sufficient to provide adequate shelter and resources for a healthy prey population.

Call-back surveys

The callback survey carried out on the proposed facility footprint during the morning of 20 December 2010 elicited no response from any owls. However, a nighttime callback survey on 5 January 2011, carried out at the entrance to the Ring Mountain Hunt Club did reveal the presence of a Northern Saw-whet Owl south and west of the cul-de-sac that marks the end of Balance Rock Road. No additional owls were observed during an additional callback survey carried out at a nearby location off Route 20 (see Figure 1 for survey locations).

Additional observations

The following bird species were observed during the site assessments, either on-site (s), or in its immediate vicinity (v):

Mourning Dove (v)
Hairy Woodpecker (s)
Pileated Woodpecker (v)
American Crow (v)
Blue Jay (v)
Black-capped Chickadee (s)
Tufted Titmouse (s)
White-breasted Nuthatch (s)
American Robin (s)
White-throated Sparrow (s)
Dark-eyed Junco (s)

DISCUSSION & CONCLUSIONS

Northern Saw-whet Owls regularly winter in Connecticut but the species is considered a rare to uncommon breeder in the state. To some extent the breeding status of this species may be underrepresented due to the difficulty of locating nests (Bevier 1994). The number of wintering Saw-whet Owls present in Connecticut tends to fluctuate dramatically on a year-to-year basis. Non-breeding individuals generally arrive by late October and depart towards the end of March (Bevier 1994).

Although anecdotal information suggests that these birds may return to the same wintering grounds every year, there is also some indication that Saw-whet Owls may select breeding sites based on local abundance of prey items (small mammals), settling to

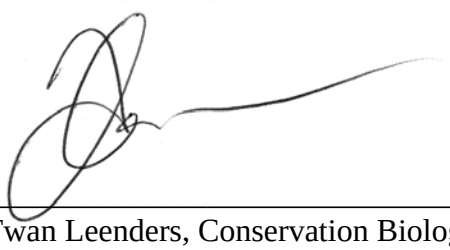
breed in areas where prey is most abundant - as long as nest cavities are available (Marks and Doremus 2000, Krahe 2001).

Generally Saw-whet Owls breed in mixed forest habitats that have dense conifers for roosting and deciduous trees for nesting and foraging. Birds wintering in Connecticut appear to use predominantly mixed mature old growth forest; woodlands adjacent to open water (e.g., rivers, marshes, or streams) are particularly favored (Petit 1995). In general, the presence of dense vegetation for roosting and perches for foraging is apparently critical (Cannings 1993).

Abundant habitat suitable for wintering and breeding Northern Saw-whet Owls is present in the area surrounding Balance Rock Road. The currently proposed construction site in the northeast corner of the Ring Mountain Hunt Club property contains mature mixed forest and is continuous with significant areas of equally suitable habitat in the immediately adjacent Tunxis State Forest. A calling Northern Saw-whet Owl was detected near the Ring Mountain Hunt Club property to the southwest of the property's main gate. The area where the owl was detected contains a wetland and borders relatively open, early successional habitat management areas in Tunxis State Forest. The combination of stands of old-growth forest bordering open habitats (e.g. a clearing or wetland) is particularly attractive to this species.

Site visits were carried out during a time that wintering Saw-whet Owls are still present in Connecticut. Presence of Saw-whet Owls in the area during this time of year does not necessarily imply that the species breeds locally. However, potentially suitable habitat is present. It is highly recommended that additional surveys are conducted during the Saw-whet Owl's breeding season (April-May) to ascertain that no nests are located on the proposed site. In general, it would be beneficial to maintain a seasonal restriction on site work between March 1 and July 1 to minimize potential impact on nesting birds and their young during post-breeding dispersal.

Saw-whet Owls are secondary cavity nesters, utilizing previously excavated cavities, most commonly excavated by Northern Flicker or Pileated Woodpecker but will also use nest boxes (Rasmussen et al. 2008). However, due to the presence of abundant suitable habitat for wintering and potentially for breeding Saw-whet Owls in the areas surrounding the proposed site, it is not recommended to place nest boxes to offset loss of potential nesting trees. Placement of nest boxes in less favorable habitat, with elevated exposure to a variety of edge effect-related factors (e.g. increased predation by native and non-native predators, increased disturbance) may have an adverse effect on a local breeding population, if present.



Stratford, 10 January 2011

Twan Leenders, Conservation Biologist
Connecticut Audubon Society

RESOURCES

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SELECT RESUME OF PRINCIPAL INVESTIGATOR

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Education:
Katholieke Universiteit Nijmegen, The Netherlands, Biology, Ph.D. (1994)
Mgr. Zwijssen College, The Netherlands, Biology, B.S. (1988)

Employment History:

2008-present Conservation Biologist. Connecticut Audubon Society, Fairfield, CT.
- Editor-in-chief, Connecticut State of the Birds report.
- Lead biologist on biological survey work and development of habitat management guidelines and conservation plans. Clients include U.S. Army Corps of Engineers, DuPont corporation, National Audubon Society, U.S. Fish & Wildlife Service.

2004-2008 Assistant Professor. Sacred Heart University, Fairfield, CT.

2001-2004 Researcher. Division of Vertebrate Zoology, Peabody Museum of Natural History, Yale University, New Haven, CT.

1991-present Biologist. Carried out biological research, biodiversity inventories and conservation projects in Europe, North America, Central America and Tropical Africa for a variety of universities and organizations, including Yale University, Radboud University (The Netherlands), Senckenberg Museum (Germany), University of Frankfurt (Germany), Agricultural University of Wageningen (The Netherlands), CT Department of Environmental Protection, Bioproca Foundation (The Netherlands), SalvaNATURA (El Salvador), MINAE (Costa Rica), International Union for Conservation of Nature, Foundation for the Advancement of Herpetology.

Professional Affiliations:

2002-present Curatorial Affiliate, Yale University, Peabody Museum of Natural History, Division of Vertebrate Zoology

2002-present Independent consultant for CT-DEP, surveys and habitat assessment for CT-ESA listed amphibians, reptiles and birds.

2002-present Coordinator for the Connecticut Amphibian Monitoring Project (CAMP).

2003-present Contributor to the CT-DEP Natural Diversity Database.

2008-present Federally licensed bird bander

Memberships:
Society for Conservation Biology, Society for the Study of Amphibians and Reptiles, Herpetologist's League, Sound Science Initiative, Union of Concerned Scientists, Wildlife Conservation Society

Author of two books (two additional book manuscripts are currently in press or in preparation), a book chapter, and over 55 scientific and popular scientific articles, reports, and reviews; contributor to six other book projects.

Publications and references available upon request