



MEMO

To: Frank Von Turkovich
 From: Karina E. Dailey
 Date: March 21, 2013
 Re: Winter Wildlife Assessment for Appletree Terrace, Burlington, VT

A winter wildlife assessment was completed on the 40-acre Appletree Terrace property at the request of John Austin, wildlife biologist for Vermont Fish and Wildlife Department in light of a proposed Solar Array project for the parcel. The intent of the assessment was to provide a brief summary of winter wildlife use on the parcel and relative habitat conditions available to identified species prior to proposed project development. The assessment was limited to observations from two winter site visits (January 2nd and February 12, 2013) conducted by Karina Dailey, environmental scientist for Trudell Consulting Engineers.

The 40-acre project area is located in the northern portion of the City of Burlington approximately ½ mile northeast of Lake Champlain and Appletree Point. Residential development surrounds the parcel on all sides with compact residential lots ranging from 1/4 to ½ an acre in size on the west and east boundaries, the southern boundary is comprised of similar sized lots but a small park and open space area provides a small buffer to the parcel. The northern boundary of the tract is buffered by a relatively undeveloped 19-acre parcel with a series of waterfront residential lots beyond (Figure 1).

Figure 1. Natural Resource map for the Appletree Terrace Parcel, Burlington, VT



A large stand of white pines (*Pinus strobus*) comprises the northeast portion of the parcel with a mix of hardwoods along the remaining east and south margins. The southern half of the property is characterized as a forested wetland with an overstory dominated by red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), gray birch (*Betula populifolia*) wetland (also classified as a “Wet Sand-Over-Clay Forest” (VT NHP 2004). This wetland transitions into an open field that comprises the northwest quadrat and is predominantly wet meadow with portions transitioning to shrub communities dominated by Dogwood (*Cornus amomum* and *Cornus alba*) (Figure 1).

Observations of wildlife sign in the form of direct animal sightings, tracks, scat, browse, rubbings, scrapings, scent marking, and bedding areas were collected in an effort to characterize winter wildlife use in the vicinity. Sufficient snow cover was present for ideal tracking conditions during both site visits. A list of observed species is provided below.

Table 1. Wildlife observed on the Appletree Terrace Parcel, Burlington, VT – January 2nd and February 12, 2013.

Common Name	Latin Name	Track/sign	Confirmed Sighting
Downy Woodpecker	<i>Picoides pubescens</i>		x
Mourning Dove	<i>Zenaida macroura</i>	x	
Blue Jay	<i>Cyanocitta cristata</i>	x	
Tufted Titmouse	<i>Baeolophus bicolor</i>	x	
American Crow	<i>Corvus brachyphynchos</i>	x	x
Barred owl	<i>Strix varia</i>		x
Pileated woodpecker	<i>Dryocopus pileatus</i>	x	
European starling	<i>Sturnus vulgaris</i>		x
Black-capped Chickadee	<i>Poecile atricapillus</i>	x	
White-breasted Nuthatch	<i>Sitta carolinensis</i>	x	
Hairy Woodpecker	<i>Picoides villosus</i>		x
North American porcupine	<i>Erethizon dorsatum</i>	x	
North American Deer mouse	<i>Peromyscus maniculatus</i>	x	
Eastern Gray Squirrel	<i>Sciurus carolinensis</i>	x	x
Red Fox	<i>Vulpes vulpes</i>	x	
Eastern Cottontail	<i>Sylvilagus floridanus</i>	x	
Whitetail Deer	<i>Odocoileus virginianus</i>	x	x

The majority of wildlife identified during the two winter site visits are known to occur in the vicinity and are species that have been able to successfully adapt or tolerate human presence in suburban areas such as this. The following is a discussion of some of the notable species observed.

Whitetail Deer (*Odocoileus virginianus*) were observed throughout the parcel on both site visits with the heaviest areas of concentration in the red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), gray birch (*Betula*

populifolia) wetland in the south and eastern portions of the parcel. Tracking observations during these site visits demonstrated that the relic four-strand barbed wire fence that divides the parcel on a northwest-southeast axis serves as a barrier in an important feeding area represented by the forest-meadow edge ecotone. Heavy travel and browse was apparent along portions of the fence line that had fallen down.

One set of red fox (*Vulpes vulpes*) tracks were observed traveling through portions of the upland pine forest and the Wet Sand-Over Clay Forest. The combination of habitats that this parcel provides including conifer and hardwood forest, field, wet meadow, and shrubland are ideal for fox.

Eastern cottontail (*Sylvilagus floridanus*) tracks were observed throughout the parcel predominantly in the upland pine forest and the Wet Sand-Over Clay Forest. The early successional shrub meadow and forest edge ecotones on this parcel provide favorable habitat for this species. Although, highly unlikely (due to their known current range), it is possible that New England cottontail (*Sylvilagus transitionalis*) may also use this parcel, however confirmed sightings of this species are impossible without DNA analysis. The compact residential setting confining this parcel contributes to the unlikelihood of their presence due to the historic challenges the New England cottontail has faced from medium size predator pressure. This is often exacerbated in residential settings from domestic cats and dogs.

Although a large portion of the property is characterized as both forested and meadow/scrub-shrub wetland, none of the wetlands provide sufficient hydrology to regularly support semi-aquatic species such as beaver (*Castor Canadensis*), river otter (*Lutra Canadensis*) or even waterfowl (*Anatidae*), but it may provide important habitat for a variety of amphibian species, a spring survey is planned to confirm breeding amphibian presence or absence.

One barred owl (*Strix varia*) was observed during the February site visit. This bird was observed both in flight and roosting in a white pine on the edge of the Wet Sand-Over-Clay Forest in the eastern portion of the property. Compact residential areas such as this can provide habitat for barred owls due in part to an easily accessible rodent populations, but some large trees are needed for breeding and roosting.

A variety of winter birds were observed during both site visits. These year-round residents were observed both in flight, feeding and roosting. The standing dead trees and dead and down vegetation on the parcel provide important foraging habitat for these passerines and small mammals while simultaneously returning nutrients to the soil. Woodpeckers create nesting cavities for themselves and numerous other bird and mammal species.

The varied landscape that this parcel provides makes it a favorable home to a variety of species, however, the limiting factor to this landscape is the isolation in relation to other contiguous forest blocks and the apparent heavy use by recreating humans. During both of my site visits it was apparent that the parcel is utilized heavily by humans with dogs (predominantly unrestrained) and domestic house cats. These walkers, skiers, bikers, etc. accompanied by their canine companions represent the greatest potential source of wildlife disturbance. Therefore winter observations demonstrate that most species that utilize this parcel have learned to tolerate human and domestic pets on some level.

Additionally, there is a well-represented variety of invasive plant species on the parcel with established communities. Unfortunately, these species can have detrimental impacts on the ecosystems they inhabit through competition for natural resources. Most native wildlife species have been unsuccessful incorporating invasive plants into their diet or habitat needs, therefore increasing the establishment of the invasive plant and limiting the opportunity for palatable native vegetation.

To summarize, it is apparent that wildlife use this parcel for winter foraging, nesting, and feeding habitat. Specifically, winter fieldwork confirmed that the project area provides habitat for whitetail deer, red fox, eastern cottontail, barred owl, porcupine, deer mouse and a variety of resident bird species. The project provides a rare tract of undeveloped land in an otherwise developed area and the species that use this area have adapted to human presence and domestic pets.