

3.4 Wildlife

The purpose of this section is to discuss existing fauna observed within the project site, potential impacts to fauna from development of the proposed project, and what mitigation measures, if any, are needed to minimize these impacts.

3.4.1 Existing Conditions

The 670±-acre project site is located west of NYS Route 22 in the Town of Amenia, Dutchess County, New York. The site contains a 2.2±-acre parcel developed with an unoccupied residential structure and a 170±-acre parcel that is developed with an 18-hole golf course as well as a clubhouse, parking areas, and maintenance buildings. The remainder of the site is presently vacant and includes approximately 230 acres of contiguous wooded land on the hillside and ridge in the western portion of the property.

Development to the north of the site consists primarily of residential homes. A closed landfill is located south of the site. State Route 22 and the Harlem Valley Rail Trail are located along the eastern side of the property, and development in this area consists of several commercial/industrial properties including a gun club, and a NYSDEC and State Superfund Site (located on the south side of Wetland L). The area to the west of the site consists of undeveloped land owned by the Tamarack Preserve.

The NYSDEC and USFWS were forwarded Freedom of Information Law (FOIL) letters requesting information concerning the presence or absence of ETR species in the project area.²⁷ Correspondence from the USFWS dated May 17, 2005 indicates that the Indiana bat (*Myotis sodalis*), a federally endangered species, has a reported roosting location approximately 15 miles from the project site and a hibernaculum approximately 30 miles from the project site. The USFWS also indicated that the bog turtle (*Clemmys muhlenbergii*), a federally threatened species, is known to occur within five miles of the project site. In their response letter dated May 9, 2005, the NYSDEC indicated that there are records of known occurrences of the bog turtle, a State endangered species, within one mile of the project site and the timber rattle snake (*Crotalus horridus*), a State threatened species, within 1.5 miles of the project site.

Assessment Methodology

A detailed description of onsite vegetative communities is included in Section 3.3, "Vegetation." Initial onsite field investigations were conducted as described in

²⁷ Correspondence with USFWS and NYSDEC, May 17, 2005 and May 9, 2005, respectively (see Appendix 9.1, "Correspondence").

Section 3.3 (see Table 3.3-1), during which plant and animal species were inventoried to characterize existing populations, habitats and communities. At the request of the Town of Amenia Planning Board and its consultants, the Applicant was directed to conduct additional wildlife surveys, including a herpetological (reptile and amphibian) survey, Phase I and II bog turtle surveys, and a breeding bird survey. These studies were initiated in the spring of 2007. Results of each survey are described below.

TCC biologists relied on extensive field experience for reviewing natural habitats of the endangered, threatened, or rare (ETR) species that were listed by the regulatory agencies within the vicinity of the property. The following discussion outlines the methods used.

Reptiles and Amphibians

The initial field investigation for reptiles and amphibians included over-turning logs, debris, and large stones to reveal places underneath where herptile species might be found. These species were detected and identified by visual encounter, vocalization, egg masses, larvae, and remains.

At the Town's direction, the Applicant initiated a herptile (amphibian and reptile) survey on the main portion of the project site (the area south of Route 44 and east of the base of the western hillside) in the spring of 2007. The reptile and amphibian surveys were conducted by TCC staff on the dates shown below. Observations of reptiles and amphibians were also made and noted throughout April and May of 2007 during other ecological studies.

For the herpetological survey in the spring of 2007, the project area was randomly traversed along stream corridors, wetlands, and upland areas (excluding the fairways and greens). Observations were noted by sight, vocal calls, and egg masses. Generally, herptile species were detected and identified by visual encounter, vocalization, egg masses, larvae, and remains. Figure 3.4-1, "Amphibian and Reptile Surveys," illustrates the areas surveyed for reptiles and amphibians within the project site.



Map Document: (N:\11\04\00-10\500\10454_00_silo Ridge\GIS\maps\AdditionalStudies\Figure 3.4-1_Amphibian and Reptile Surveys.mxd) 8/4/2007 - 9:03:49 AM



Silo Ridge Resort Community

Amphibian and Reptile Surveys

Town of Amenia, Dutchess County, New York

1 inch equals 1,300 feet

Figure 3.4-1

Source: NYS Office of Technology 2004 Orthophoto

Drawn by: JFT

Table 3.4-1 Reptile and Amphibian Field Days

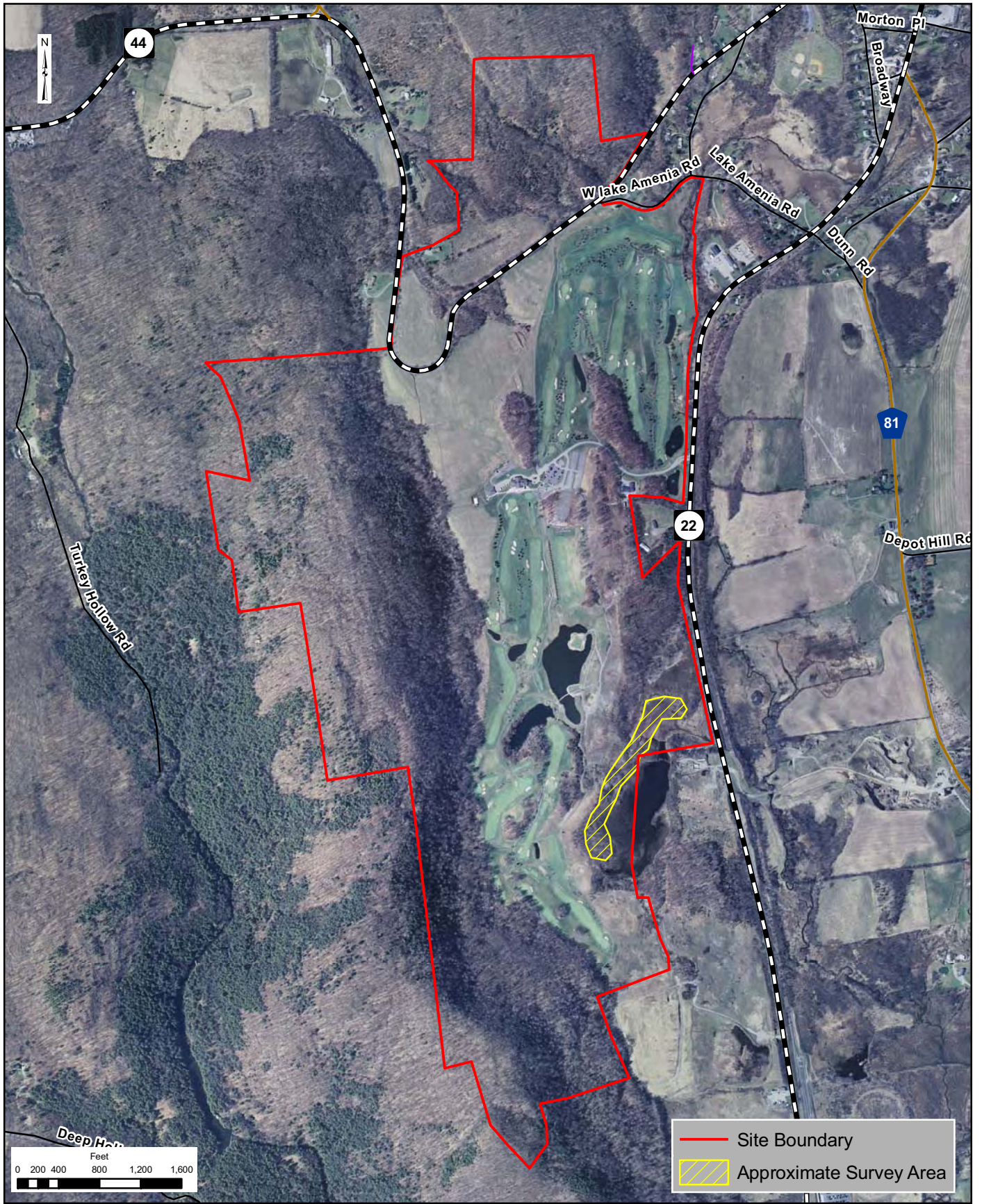
Silo Ridge Work Field Days and Activity Sheet		
Dates	Staff	Man Hours
4/3/07	Steven Finch, Randy Stechert	12
4/19/07 (Night Survey)	Steven Finch, Jason Tourscher	10
4/24/07	Norbert Quenzer, Randy Stechert, David Tompkins, Jason Tourscher	24
5/4/07	Norbert Quenzer, Randy Stechert, David Tompkins, Jason Tourscher	22
5/10/07	Norbert Quenzer, Randy Stechert, David Tompkins, Jason Tourscher	20
5/14/07	Steven Finch, David Griggs	14
6/1/07	Norbert Quenzer, David Tompkins, Steven Finch, Jason Tourscher, Michael Klemens, Ph.D.	17.5
6/21/07	Jason Tourscher	8
Total Man Hours*		127.5
Total Field Days		8
*Total man hours do not include drive time		

As noted above, the Town and its consultants also requested that a bog turtle survey be conducted on the project site. Mr. Norbert Quenzer of Bagdon Environmental, a qualified bog turtle surveyor recognized by the NYSDEC, was retained by TCC to conduct the Phase I and II surveys for the federally-threatened and State-endangered bog turtle. The study area for the survey consists of approximately 15 acres of the north/northwestern portions of Wetland L/LL (NYSDEC wetland AM-15). Figure 3.4-2 illustrates the bog turtle survey area.

Four-person teams conducted surveys on the following dates:

Table 3.4-2 Bog Turtle Field Days

Silo Ridge Work Field Days and Activity Sheet			
Dates	Staff	Man Hours	Work Conducted
4/03/07	NQ	5	Phase I Habitat Assessment
4/24/07	NQ, RS, DT, SF	24	Phase II Field Study
5/04/07	NQ, RS, DT, SF	22	Phase II Field Study
5/10/07	NQ, DG, SF, JT	20	Phase II Field Study
6/01/07	NQ, RS, DT, SF	17.5	Phase II Field Study
Total Field Days		5	
Total Man Hours		88.5	*Total man hours do not include drive time.



Map Document: (N:\11\04\00-10\500\10454_00 - Silo Ridge\GIS\Maps\AdditionalStudies\Figure 3.4-2 Bog Turtle Surveys.mxd) 8/4/2007 - 9:06:55 AM



Silo Ridge Resort Community

Bog Turtle Surveys

Town of Amenia, Dutchess County, New York

1 inch equals 1,300 feet

Figure 3.4-2

Source: NYS Office of Technology 2004 Orthophoto

Drawn by: JFT

The wetland area to be surveyed was divided into four sections, with each area surveyed for approximately five hours on each site visit. During the surveys, general observations of wildlife and habitat as well as other site characteristics were noted and recorded. The surveys started at approximately 1100 hours and concluded at approximately 1600 hours, for a total of 20 man-hours per visit. A total of 88.5 man-hours were spent in the survey area searching for turtles.

Mammals

Field methods to detect mammals were based on visual encounters, vocalization, tracks, scat, remains, or other signs. The site was randomly traversed to ensure that each vegetative and habitat community was surveyed.

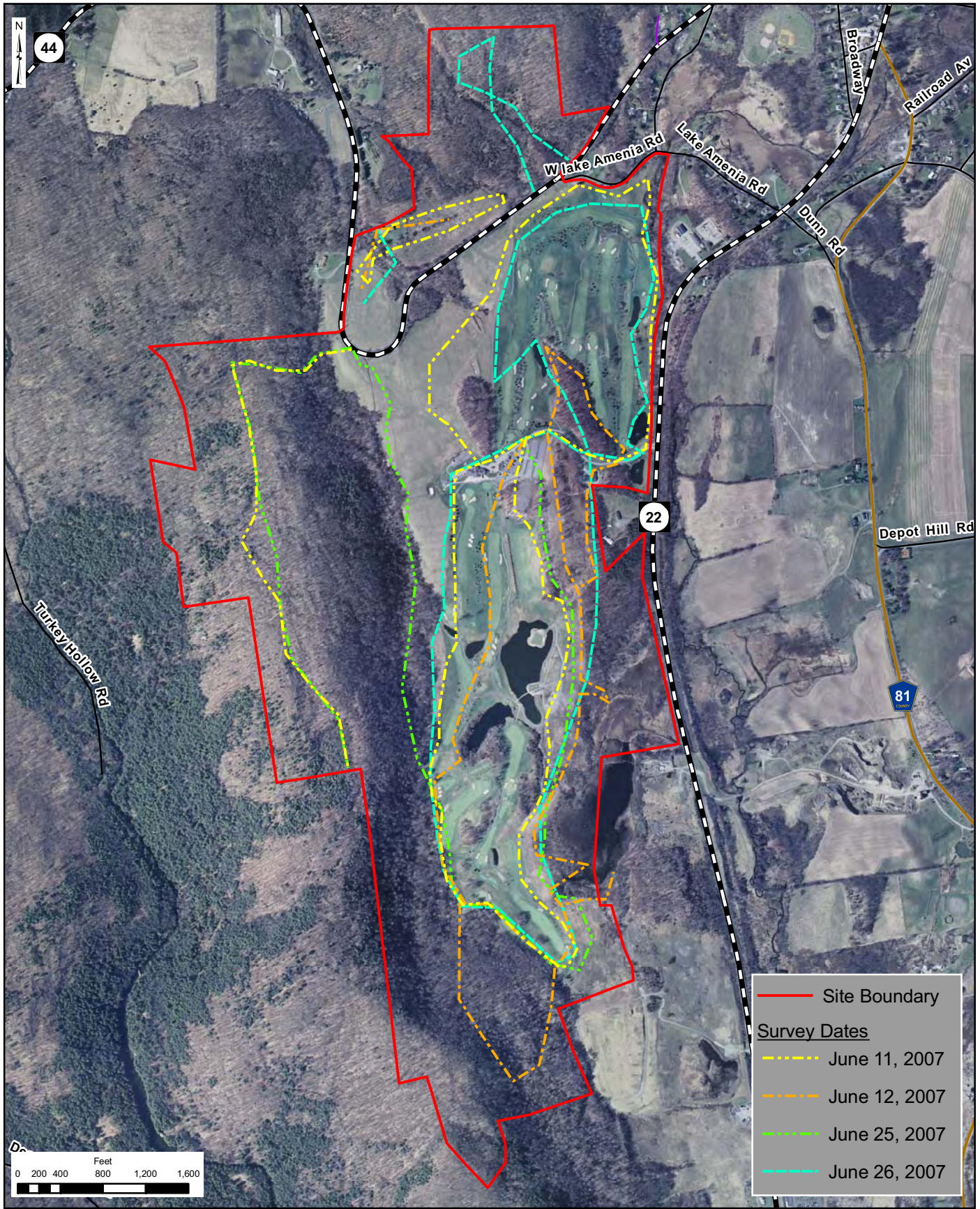
Birds

At the request of the Town of Amenia Planning Board, a bird inventory was conducted on the main portion of the project site over a period of four days in June 2007. The purpose of the bird inventory was to detect, identify, and inventory actually or potentially breeding bird species located at the existing golf course and areas of the site that are proposed to be affected by construction, and to determine if any endangered, threatened, and/or special concern species are located at the site. Birds were identified either visually or by their songs or calls, or by both methods. Observations of birds were previously documented throughout numerous site visits between April 2005 and May 2007 as well. The bird survey area is shown in Figure 3.4-3.

Initial Field Observations

During initial field visits, 29 avian (bird) species, nine mammal species, eight amphibians and reptile species, and three fish species were observed, as described below. Wildlife species identified on the site were typical of those observed within rural areas of central eastern New York State. The records of these field visits were compiled in a Habitat Assessment Report by The Chazen Companies, dated May 2006 (revised February 2007), and included as Appendix 9.7.1.

Additional animal species (e.g., mice, shrews, moles) are also believed to inhabit the site, but were not detected during the site inspections due to their subterranean, nocturnal or other behavioral/life cycle patterns. Early migratory birds were present at the site due to the timing of the assessment in relation to the natural seasonal migration patterns of these species.



	Site Boundary
Survey Dates	
	June 11, 2007
	June 12, 2007
	June 25, 2007
	June 26, 2007



Silo Ridge Resort Community

Breeding Bird Survey

Town of Amenia, Dutchess County, New York

1 inch equals 1,250 feet

Figure 3.4-3

The northward migration of these species typically occurs during late April and May and southward in late August and September. None of the species observed on the site are rare, threatened or endangered.

One NYSDEC special concern species (Cooper's hawk) was observed flying within the project area. Historical wood turtle sightings (a NYSDEC special concern species) have been reported within the Amenia/Cascade Brook system near the Town of Amenia Highway Department located adjacently northeast of the Silo Ridge property.

The results of the additional field investigations required by the Town Planning Board are summarized below.

Reptiles, Amphibians, and Fish

A reptile and amphibian survey was conducted in the vicinity of wetlands/watercourses located throughout the golf course and along the base and top of the ridge. The focus of the survey was to observe either by sight or sound, reptiles and amphibians associated with the existing golf course. Specific areas included wetland and stream corridors, golf ponds, and upland areas (excluding fairways and greens). Fifteen species of reptiles and amphibians were either observed or recognized by their call or sign within the site. Included in the results are ancillary species noted during the bog turtle surveys.

The project area was randomly traversed along stream corridors, wetlands, ponds, and upland areas (excluding the fairways and greens). Observations were noted by vocal calls, sight, and egg masses. Generally, herptile species were detected and identified by visual encounter, vocalization, egg masses, larvae, and remains. Included in this study are observations that were made during other studies and interviews of golf course personnel.

Fourteen species of reptiles and amphibians and three identifiable fish species were either observed or recognized by their call or sign within the site, including a population of green frog (*Rana clamitans*), eastern garter snake (*Thamnophis sirtalis sirtalis*), and green sunfish (*Leponis cyanellus*). During a site visit with the Town's consultant, turtle egg shells and black racer shells (*Coluber constrictor*) were found along an old earthen berm near the southwestern edge of Wetland L/LL. This area faces the south which gives optimum sun exposure. The berm also contains little vegetation and a sandy soil, which makes it ideal for reptiles to lay eggs for incubation. Table 3.4-3, "Reptilian, Amphibian and Fish Populations Identified at Initial Site Assessment," lists species encountered during site investigations.

Table 3.4-3 Reptilian, Amphibian, and Fish Populations Identified at Initial Site Assessment

Common Name <i>Scientific Name</i>	Location of Species Found
American toad <i>Bufo americanus</i>	Wetland L, 100-foot buffer area of Wetland L
Snapping Turtle <i>Chelydra serpentina</i>	Wetland L, Hole 12 Tee Box
Eastern painted turtle <i>Chrysemys picta picta</i>	Wetland L, Pond Z
Northern dusky salamander <i>Desmognathus fuscus</i>	Wetland/Stream J
Gray Tree Frog <i>Hyla versicolor</i>	100-foot buffer area of Wetland L
Northern water snake <i>Nerodia sipedon</i>	Wetland L
Red-spotted newt <i>Notophthalmus viridescens viridescens</i>	Wetland connection between Wetland D and Amenia Brook, Wetland N, Wetland U
Redback salamander (“red and leadback” phase) <i>Plethodon cinereus</i>	Wetland/Stream J, Stream P
Spring peeper <i>Pseudacris crucifer</i>	Wetland L, Wetland U
Bullfrog <i>Rana catesbeiana</i>	Wetland connection between Wetland D and Amenia Brook, Wetland N
Green frog <i>Rana clamitans</i>	Wetland connection between Wetland D and Amenia Brook, Wetland L, Wetland N, Wetland U
Pickerel frog <i>Rana palustris</i>	Stream corridor between Wetland K and Wetland L
Wood frog <i>Rana sylvatica</i>	Wetland L, Wetland U
Eastern garter snake <i>Thamnophis sirtalis sirtalis</i>	Top of Ridge, Wetland L,
Smallmouth bass <i>Micropterus dolomieu</i>	Pond
Carp <i>Cyprinus carpio</i>	Pond
Green Sunfish <i>Lepomis cyanellus</i>	Pond
Minnnows Not identifiable	Pond
Source: DeGraaf, RM and M. Yamasaki. 2001. New England Wildlife: Habitat, Natural History, and Distribution. University Press of New England, Hanover, NH. 482 pgs. *Identified by Dr. Michael Klemens in the Amenia/Cascade Brook system located near the Town of Amenia Highway Department adjacent to the Silo Ridge site, on an unknown date. **Shells identified by Dr. Michael Klemens on February 6, 2007.	

The species found on-site are common species that can generally be found in a number of habitats, including degraded habitat. No endangered, threatened, or special concern species were observed within the site. Numerous painted turtles were found basking within Wetland L/LL. A large number of green frog, bullfrog tadpoles, along with red spotted newts, were found within the golf course ponds.

It was observed during initial site visits that there are minimal habitat areas onsite for timber rattlesnakes, a State threatened species. Rock outcrops were observed scattered along the ridge line; however, due to the dense canopy on the side of the ridge and lack of prolonged sun exposure, there were few areas for basking. The closest known timber rattlesnake den through historical records is the Murphy Den located approximately 1.6 miles east of the site. Timber rattlesnake movement from this den to the Silo Ridge property is most unlikely due to the number of obstacles, including two major thoroughfares and the rail trail. Mr. Richard Stechart, an expert on timber rattlesnakes, conducted a field visit on April 20, 2005 with TCC staff and found no suitable basking or den sites onsite for timber rattlesnakes. Interviews were conducted with several neighbors (along Deep Hollow Road) of the Silo Ridge property along with the golf course supervisor and there have been no reports of timber rattlesnake sightings within the area.

Herpetological Survey

Fourteen species of reptiles and amphibians were either observed or recognized by their call or sign during the herpetological survey conducted in the spring of 2007. All of the species found are common within the northeastern US; no ETR species were observed within the study area. See Table 3.4-4.

The herpetological survey area consists of a diversity of ecological communities including streams, open waters, and wetlands (red maple swamps, emergent marsh, etc), beech-maple and southern successional hardwood forests, old fields, and mowed lawn areas. Some of these areas, however, especially adjacent to the existing golf course, show evidence of impact due to mowing and general maintenance. Most of the streams and ponds within the golf course were altered (ditched or dredged) when the golf course was first constructed. The ponds lack vegetation around the edges, leaving little cover. Most of the stream within the golf course also contains little or no vegetation. Other natural impacts observed were significant beaver activity within Wetland L/LL.

The species found onsite during the survey are common species that can generally be found in a number of habitats, including degrading habitat. Numerous painted turtles were found basking within Wetland L/LL. A large number of green frog and bullfrog tadpoles, along with red spotted newts, were found within the golf course ponds.

**Table 3.4-4 List of Reptiles/Amphibians Identified
During Spring 2007 Herpetological Survey**

Common Name <i>Scientific Name</i>	Habitat
American toad <i>Bufo americanus</i>	Wetland L
Snapping Turtle <i>Chelydra serpentine</i>	Wetland L
Eastern painted turtle <i>Chrysemys picta picta</i>	Pond/OW
Northern dusky salamander <i>Desmognathus fuscus</i>	RM
Gray Tree Frog <i>Hyla versicolor</i>	RM
Northern water snake <i>Nerodia sipedon</i>	EM/OW
Red-spotted newt <i>Notophthalmus viridescens viridescens</i>	BMF
Redback salamander (“red and leadback” phase) <i>Plethodon cinereus</i>	BMF, RM
Spring peeper <i>Pseudacris crucifer</i>	EM/SS
Bullfrog <i>Rana catesbeiana</i>	Pond
Green frog <i>Rana clamitans</i>	EM/SS
Pickerel frog <i>Rana palustris</i>	Wetland K
Wood frog <i>Rana sylvatica</i>	RM
Eastern garter snake <i>Thamnophis sirtalis sirtalis</i>	SSHF/RM
Source: DeGraaf, RM, and M. Yamasaki. 2001. New England Wildlife: Habitat, Natural History, and Distribution. University Press of New England, Hanover, NH. 482 pgs.	
Beech-Maple-mesic forest: BMF Common reed/Purple loosestrife Successional southern hardwood forest: SSHF Emergent/scrub swamp: EM/SS	Pond/OW: Open Water Old field: OF Mowed lawn: ML Red maple swamp: RM Hemlock: H

One night survey was conducted on April 19, 2007 to search for salamander migrations. It was speculated that because of the numerous streams and wetlands, along with the upland “islands” within and adjacent to the golf course, there was the potential to observe salamander movement from one area to another. A total of 10 man-hours were spent traversing the golf course looking for amphibians. TCC did not observe any amphibian movement during this survey. Weather leading up to this survey night is thought to play a large factor in observing limited activity on this date. For the most part of early April, temperatures were very cool, averaging just above freezing most nights. The night of the survey was the warmest day/night in April at that point with a high temperature of 62° Fahrenheit and a low of 42°.

Salamander migrations may have been more sporadic during the early spring days due to the unusually cool weather.

Daytime surveys of salamander counts also yielded an unexpected low count in both species diversity and individuals. Most of the streams within the study area are fairly small in size and do not possess large substrate or objects within the stream that salamanders would be under, with the exception of Amenia/Cascade Brook. The streams located within the golf course layout also have been altered due to the past construction of the golf course and any prior activities which include ditching, piping, and removing vegetation from stream banks. A portion of Wetland J is an intermittent stream that contains the best substrate. Several northern dusky (*Desmognathus fuscus*) and northern two-lined salamanders (*Eurycea bislineata*) were found within this stream, though the numbers of individuals found were small.

Snake and possible turtle shells were found along an old earthen berm near the southwestern edge of Wetland L/LL along with some open disturbance area to the north of Wetland L/LL. These areas face the south which gives optimum sun exposure. The berm also contains little vegetation and a sandy soil, which makes it ideal for reptiles to lay eggs for incubation. This area is noted on Figure 3.3-1, "Vegetative Cover Map," in Section 3.3.

Although not observed during the herpetological survey, NYSDEC special concern species box turtles (*Terrapene carolina*) and wood turtles (*Clemmys insculpta*) may use some of the undisturbed areas within the property. These species are very mobile and could be found along stream corridors or upland areas, especially along Amenia/Cascade Brook, the northern parts of the property (north of Route 44), or along the undisturbed areas along the base of the ridge. Wood turtles have been known to be in the vicinity of the Silo Ridge property within the Amenia/Cascade Brook corridor. Spotted turtles (*Clemmys guttata*), another NYSDEC species of special concern, could occupy wetlands found on top of the ridge, particularly within Wetland U, which is a blueberry bog thicket.

Bog Turtle Survey

Several different types of wetland habitat make up the long, somewhat crescent-shaped 15-acre designated survey area located in Wetland L/LL (see Figure 3.4-2). The western section of the survey area is a red maple forested wetland dominated by an overstory of red maple and tussock sedge in the ground layer. This area contains numerous seeps which keeps this portion of the wetland partly inundated with up to several inches of water. The soils are fairly mucky between the tussock sedges, but these mucky conditions are limited to the western and southern portions of the surveyed areas.

Continuing northeast along the survey area, the wetland transitions to a shrub/scrub habitat type that is dominated by speckled alder and tussock sedge. Portions of this habitat contain emergent marsh habitat dominated by cattail and purple loosestrife. This area is where a perennial stream from the north enters Wetland L (the stream connecting Wetland K to Wetland L).

The northern portion of the survey area consists primarily of a common reed marsh, dominated by common reed, but also containing some floating mat vegetation. This area contains a fair amount of physical disturbance from past human activities. Specifically, the area has been ditched and some adjacent areas have been filled with debris. Recent beaver activity is also present in this area.

Wetland L has also been disturbed by nutrient loading and possible contamination, such as PCB's. Sources of these disturbances include storm water runoff from Route 22, golf course runoff, and contamination from an adjacent Superfund contamination site.

The results of the Phase I Survey indicated that an approximately 3-acre crescent-shaped area of suitable bog turtle habitat was located along the northern and western edges of Wetland L/LL. This area consisted of areas of mucky soils, spring-fed rivulets, and open emergent/scrub shrub vegetation. Several calcareous wetlands species such as shrubby cinquefoil (*Potentilla fruticosa*) and stonewort (*Chara spp.*) were observed within this area; however, there were no other strong calciphites present.

Mr. Al Breisch of the NYSDEC Endangered Species Unit and Dr. Michael Klemens, consultant for the Town of Amenia, were consulted to verify the results of the Phase I Survey and it was determined that a Phase II Survey would be necessary. The vegetation outside of the 3-acre crescent-shaped area consists mostly of common reed and purple loosestrife. In addition, the water levels outside of the designated survey area increase significantly. Therefore, these areas were not considered to be suitable bog turtle habitat and they were not searched during the Phase II Survey.

The Phase II survey was also led by Mr. Quenzer with assistance from TCC staff including Mr. David Tompkins, Mr. Steven Finch, Mr. Jason Tourscher, Mr. David Griggs, and Mr. Randy Stechert. The Phase II Survey was conducted from late April through early June (see Table 3.4-2). The site was surveyed using standard techniques recommended by the USFWS. These include traversing the site using visual and tactile search methods. The tactile search effort was enhanced by use of small hand-held rakes that helped facilitate searching under tussocks and other vegetation. During the field surveys, general observations of other wildlife species and habitat characteristics were recorded as well as other site characteristics were noted and recorded. According to the USFWS's recommendations, the required search time for the Phase II Survey is 48 to 72

person-hours. This is based upon a minimum of 4-6 person hours/acre of designated habitat/visit with 4 visits minimum. Therefore, the Phase II Survey effort exceeded the requirements set by the USFWS.

No bog turtles were observed within the designated survey area during the Phase II survey. In addition, there are no records of bog turtles on the site or in the immediate surrounding area. The dominance of invasive species and highly degraded conditions in the surrounding area makes it highly unlikely that bog turtles are present at the site. A complete report on the bog turtle surveys prepared by Mr. Quenzer is included within Appendix 9.7.2.

Mammals

A total of 20 species of mammals were either observed or recognized by their sign (e.g. scat, carcass, tracks) on or within the immediate vicinity of the site. Some of these species include white tailed deer (*Odocoileus virginiana*), black bear (*Ursus americanus*), and eastern cottontail (*Sylvilagus floridanus*). No endangered, threatened, or special concern mammalian species were observed within the project site. Investigation of potential critical habitat for ETR species revealed that there is a cluster of shagbark hickories in the southeastern portion of the site near Wetland L/LL, which could provide suitable summer roosting habitat for the Indiana bat. Forested areas on top of the ridge may also support suitable Indiana bat habitat. Mines or caves that could serve as hibernacula were not located within the project site. Table 3.4-5, “Mammalian Populations of the Silo Ridge Site,” lists the mammal species encountered either by observation, sound, or sign.

Table 3.4-5 Mammalian Populations of the Silo Ridge Site

Scientific Name	Common Name	Habitat
<i>Canis latrans</i>	Coyote (calls, scat)	BMF
<i>Castor canadensis</i>	Beaver (lodge, tree cut)	EM/SS
<i>Eptesicus fuscus</i>	Big brown bat	SSHF
<i>Glaucomys sabrinus</i>	Northern Flying Squirrel	SSHF
<i>Lasiurus borealis</i>	Red bat	SSHF
<i>Marmota monax</i>	Woodchuck	ML
<i>Mephitis mephitis</i> *	Striped skunk (egg predation)	OF
<i>Microtus pennsylvanicus</i> *	Meadow vole	OF
<i>Myotis lucifugus</i>	Little brown bat	SSHF
<i>Napaeozapus insignis</i> *	Woodland jumping mouse	SSHF
<i>Odocoileus virginiana</i>	White-tailed deer	BMF, SSHF
<i>Ondatra zibethica</i> *	Muskrat	P
<i>Peromyscus leucopus</i> *	White-footed mouse	OF
<i>Peromyscus maniculatus</i> *	Deer mouse	SSFH
<i>Pipistrellus subflavus</i>	Eastern Pipstrel	SSHF
<i>Procyon lotor</i>	Raccoon (tracks)	RM
<i>Sciurus carolinensis</i>	Eastern gray squirrel	BMF, SSHF
<i>Sylvilagus floridanus</i>	Eastern cottontail	SSHF
<i>Tamias striatus</i>	Eastern chipmunk	BMF
<i>Ursus americanus</i>	Black bear (scat)	BMF
Beech-Maple-mesic forest: BMF Emergent/scrub swamp: EM/SS Mowed lawn: ML Old field: OF Pond: P Red maple swamp: RM Successional southern hardwood forest: SSHF *Additional species observed during 2007 studies		

Bird Populations

TCC retained Dr. Charles Smith of Cornell University, a renowned ornithologist in New York State, to help oversee the bird survey. In conducting this survey, Dr. Smith and TCC biologists employed the area search method, visiting all land-cover types and habitats on the site. Randomly walked transects were used to search each area (refer to Figure 3.4-3 above). A digital pedometer was used to measure the distance traversed. Random listening stations within each habitat type were also used to increase the chances of detecting species. Each bird species detected and their associated habitat type were recorded. During the survey, 79.5 hours of effort were expended and 27 miles were walked. For an area the size of the Silo Ridge Country Club Project, the effort expended in inventorying breeding birds was both intensive and extensive, compared to other breeding bird inventory methods.

A literature review was also conducted prior to the survey. New York State Breeding Bird Atlas data were researched to determine if any endangered, threatened, or special concern (ETS) bird species were reported in the vicinity of the site. Based on the Second New York Breeding Bird Atlas (2000-2005), 89 species were reported from an area of nine square miles, within which the site is located. None of the species reported are classified in New York as an ETS species. Following the Survey, the 2002 Audubon WatchList (National Audubon Society 2007) was reviewed to determine if any watch list species were recorded at the site. At least 31 species on the watch list are known to occur in New York as breeders, winterers, or migrants and several watch list species were recorded at the site, as discussed below.

During the survey, 79 species of birds were detected and identified at the site (29 during initial site visits). These species were detected within several different habitats, including mowed lawns, open water, wetlands, secondary forest, shrublands, riparian corridors, old fields, and transition zones between these habitats. Most of the species are common; however, six species listed on the Audubon WatchList 2002 (National Audubon Society 2007) were recorded at the site. These watchlist species include:

- American Woodcock (*Scolopax minor*)
- Blue-winged Warbler (*Vermivora pinus*)
- Prairie Warbler (*Dendroica discolor*)
- Willow Flycatcher (*Empidonax traillii*)
- Wood Thrush (*Hylocichla mustelina*)
- Wormeating Warbler (*Helmitheros vermivorus*)

A list of species that have been detected during the bird survey, along with the habitat where they were predominately observed, is presented in Appendix 9.7.2. The full bird survey report prepared by Dr. Smith is also included in that appendix.

The mix of habitats observed on the site contributes to the variety of summer bird species (breeding status was not confirmed) detected during the Survey. During the Survey, no New York State listed ETS species were detected within the site. However, TCC biologists have previously observed Cooper's Hawk and Red-shouldered Hawk onsite during an ecological assessment conducted in 2005/2006. These species are listed as special concern species in New York. It should be noted that New York State listed special concern species are given no special NYSDEC protection. As these species were not detected during this survey, they most likely do not have nests within the site.

3.4.2 Potential Impacts

The proposed project will result in permanent changes to onsite habitats that may affect the wildlife community. Certain changes to the project site, however, will be temporary in nature and will be isolated to certain time periods during or directly following the construction process.

Temporary Impacts

Disturbance associated with the construction of roads, driveways, utilities, residences, hotel facilities and golf course improvements will result in the removal of some habitat, which could result in the loss or migration of individual animals during the land clearing and construction phases. Land clearing activities would likely cause more mobile species to relocate off site, while less mobile species would be expected to move to areas on the site not affected by development.

Permanent Impacts

Wildlife migration that occurs during the land clearing and construction phases may result in permanent displacement; however, certain species may return to the site following the completion of the construction phase. The developed areas of the project site will favor species suited to human settlement including, for example, the gray squirrel and raccoon.

The site layout is designed to minimize permanent disturbance to sensitive habitats and preserve natural open space and wildlife habitat. The steep hillsides surrounding the valley will not be developed beyond the base of the hillside. Permanent impacts to wetlands will be minimized to the extent possible. Overall, the layout of the development will leave approximately 75% of the site as contiguous open space, including approximately 230 acres along the hillsides and the entire length of the ridge, minimizing habitat disturbance to a large extent. The

habitats that will be most disturbed are the mowed lawn habitat and the successional old field habitat.

In addition, impacts to wetland communities onsite were calculated. Approximately 0.09± acres of onsite wetlands and 2.02± acres of the NYSDEC 100' adjoining area surrounding Wetland L/LL will be disturbed as a result of construction. To facilitate wetland and wildlife habitat preservation, open space including buffer areas surrounding wetlands will be maintained to the extent possible. With the maintenance of these open space areas, species living in this area are expected to maintain current population levels. As a result, potential impacts to wildlife species on the property are expected to be limited to reduction of the existing open field habitat areas in the northern and central portions of the site, shifting of the border of the forested areas and alteration of potential wildlife corridors.

There are existing corridors for wildlife movement offsite, particularly the Tamarack Preserve, a 2,400 acre wildlife preserve, to the west of the project site. As noted above, the site's layout maintains a contiguous 230-acre area adjacent and connected to the Tamarack Preserve. In addition, the layout provides for a variety of interconnected spaces throughout the site and particularly in the western and southern portions of the site that will allow wildlife movement.

3.4.3 Proposed Mitigation Measures

Based upon the studies conducted at the site, along with numerous other site visits and interviews, no endangered, threatened, or rare federal- and/or state (ETR) species were found within the property. Letters received from USFWS and NYSDEC Natural Heritage Program regarding the presence of known ETR species indicated that bog turtles (*Clemmys muhlenbergii*) and timber rattlesnakes (*Crotalus horridus*) are known to be within several miles of the site. A Phase II bog turtle study that was conducted between the months of April and May 2007 concluded that no bog turtles were found in over 85 man-hours of searching and that the habitat structure usually associated with bog turtles within the study area of Wetland L/LL was marginal. Searches along the top of the ridge on the western side of the site conducted by Mr. Randy Stechert, a timber rattlesnake expert, concluded that the ridge line contains very little basking habitat for rattlesnakes, and that rattlesnakes most likely do not exist on the ridge (see correspondence from Mr. Stechert included in Appendix 9.7.2). Therefore, it is the Applicant's opinion, along with the experts hired to help conduct the Phase II bog turtle and rattlesnake studies, that no bog turtles or rattlesnakes are likely present within the property and that suitable habitat for the species mentioned above is limited and unoccupied.

Earth moving and construction activities will temporarily impact the amphibian and reptile populations within the property. However, by providing wetland buffers and vegetated corridors, the remaining areas will continue to provide connectivity

between habitats. Virtually none of the wetlands or streams will be impacted by the proposed development, thus most of the species found utilizing these habitats will be unaffected. Some turtle/snake egg nesting areas to the north of Wetland L/LL will be affected by development, but other known areas will be protected within the 100-foot buffer area of Wetland L/LL. Proposed disturbances in the upland areas will impact local terrestrial reptile and amphibian species. However, based upon the survey findings, the species that would be lost are common species throughout New York and the loss of these species would not pose any significant impact to the overall species population in the area.

Furthermore, the proposed project will preserve approximately 500 acres of the site as open space, including the 230-acre hillside and ridge in the western portion of the site, which will provide for wildlife habitat and movement. The undeveloped portion of the site will continue to provide habitat for those wildlife species that currently utilize this property.

As described in Section 3.3, the project will follow the guidance of the Natural Resource Management Plan (NRMP) included in Appendix 9.11, which include minimizing the removal of native vegetation; saving native plants that must be removed for later replanting; and revegetating with native plantings wherever possible. Additional habitat protection measures, including provision of a 500-foot minimum buffer to the vernal pool (Wetland U), are identified in Section 3.3.

Mitigating measures to help reduce excess nutrients and pollutants into surface water bodies include Best Management Practices (BMPs), Integrated Pest Management, and Erosion Control Measures. A detailed discussion of the Erosion Control Measures for the proposed Silo Ridge project is provided in Section 3.1, "Soils and Geology." The proposed project will utilize onsite stormwater management practices and attain compliance with Phase II stormwater regulations. See Section 3.2, "Water Resources," and Appendix 9.11 for details.