

# Appendix 5A

## Threatened and Endangered Wildlife Species

### *San Francisco Garter Snake*



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**Status:** This garter snake species is listed as State Endangered (1971) and Federally Endangered (1993). Critical habitat has not yet been designated (CDFG, 2000; CDFG 2002a; USFWS, 2002a).

**Habitat:** The snakes' preferred habitat is a densely vegetated pond near an open hillside where they can sun themselves, feed, and find cover in rodent burrows; however, considerably less ideal habitats can be successfully occupied (CDFG, 2002a; USFWS, 2002a). Temporary ponds and other seasonal freshwaterbodies are also used. The snakes avoid brackish marsh areas because their preferred prey, California red-legged frogs, cannot survive in saline water (CDFG, 2002a; USFWS, 2002a; Zeiner et al., 1988).

**Occurrence in Project Area:** There is high potential for this species to occur in the Project Area. The potential for occurrence is greatest in the vicinity of the Crystal Springs Golf Course and extending north, especially at the two towers located nearby San Andreas Lake (existing Towers 13/83 to 13/84) and nearby the small, seasonal wetland just south of Sneath Lane Substation (existing Towers 14/95 to 14/97) (PG&E, 2002). The San Francisco garter snake was observed near existing Towers 14/98 and 14/97 during surveys conducted in 2002 by GANDA.

Breeding populations of the San Francisco garter snake have been documented at several locations near the ROW (PG&E, 2002). However, only one population would be potentially affected by the project. This is the breeding population in the San Andreas Lake north marsh area. San Francisco garter snake population dispersal potentially could occur around the northeast shoreline of the lake and in the vicinity of the ROW between existing Towers 12/79 and 13/84. A San Francisco garter snake sighting within the Project Area (Sneath Lane Substation) by GANDA biologists on May 1, 2002 was also taken into consideration during the status review and this location was examined during mid-May 2002 for the presence of the San Francisco garter snake.

Additional areas where the snake is likely to occur are nearby the Project Area, but not expected to be affected by the project:

- Upper Crystal Springs Reservoir southern marsh and adjacent small retention basin.
- Lower Crystal Springs Reservoir north marsh and adjacent Tracy Lake area.

Both these locations are at least one half-mile east of the proposed route and are separated from the route by annual grassland, coastal scrub and oak woodland habitats. There are no ponds or other wetlands within these habitats or beyond them to the east which would conceivably produce seasonal CRF movement across the route area. However, San Andreas Lake is located directly adjacent to portions of the overhead transmission route

### ***California Red-legged Frog***



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**Status:** This frog was designated as Federally Threatened in 1996. All towers west of I-280 were in California red-legged frog Critical Habitat Unit 14 a designation that was nullified by the U.S. District Court in Washington, D.C. in July 2002.

**Habitat:** This species is found in various aquatic, riparian, and upland habitats including: ephemeral ponds, intermittent streams, seasonal wetlands, springs, seeps, permanent ponds, perennial creeks, manmade aquatic features, marshes, dune ponds, lagoons, riparian corridors, blackberry thickets, nonnative annual grasslands, and oak savannas (USFWS, 2002c; Zeiner et al., 1988). The presence of willows, cattails, and woody riparian vegetation are indicators of higher quality breeding habitat (USFWS, 1997; USFWS, 2001). Long-term populations survival is also linked to the spatial proximity of breeding habitats so that inter-patch migration can be achieved (USFWS, 1997; USFWS, 2002c).

**Occurrence in the Project Area:** Spring and summer habitat surveys for the California red-legged frog were conducted in 2002 according to protocols published by the USFWS (1997). California red-legged frogs were identified in an irrigation pond at the Crystal Springs Golf Course, west of the Project alignment, approximately 300 feet west of existing Tower 9/61, and is approximately 100 feet west of a proposed cable pulling site that is between existing Towers 9/61 and 9/62. Two adult and seven subadult California red-legged frogs were detected in this pond. The habitat between the tower and pond is maintained as a golf course and does not provide suitable aestivation habitat for the frogs; however, it is possible that California red-legged frogs could move through the cable pull site or the alignment.

The presence or absence of California red-legged frog was recorded for all of the San Francisco garter snake surveys conducted by Sam McGinnis because it is one of the two main prey species for the San Francisco garter snake and to a large extent it determines the distribution of the San Francisco garter snake (PG&E, 2002). In addition, surveys for California red-legged frog egg clusters were conducted in late winter and for California red-legged frog larva in late spring and summer at survey locations.

Areas near the Project Area that support breeding populations of California red-legged frogs include:

- The Upper Crystal Springs Reservoir south marsh. The south marsh is located approximately 0.7 miles from the alignment.
- The Lower Crystal Springs Reservoir north marsh and adjacent Tracy Lake area. This marsh area is located approximately 0.7 miles from the alignment.
- Crystal Springs Dam, in an artificial concrete pool formed by support structures on top of the dam. The dam is located approximately 0.2 miles from the proposed alignment.
- San Mateo Creek flowing east from the dam, which is 800 linear feet from the nearest tower; and
- The north marsh of San Andreas Lake (also described as “adjacent to the San Francisco County Jail No.3 at the west end of Sneath Lane”). The northern finger of the marsh is between 150 and 450 feet west of the alignment. An established access road west of the alignment is 75 feet from the northern-most end of the marsh.

Other potential breeding sites for California red-legged frogs located nearby the Project Area identified by Dr. McGinnis and by GANDA include a small, well-vegetated, finger-bay of San Andreas Lake near existing Tower 12/79, which is located approximately 200 feet from the alignment (PG&E, 2002), and a retention basin north of existing Tower 12/80, which is located immediately to the east of a maintained access road.

The proposed route is situated at least one half mile east of the Upper and Lower Crystal Springs Reservoir sites. The proposed route is separated from the sites by annual grassland, coastal scrub and oak woodland habitats. However, San Andreas Lake is located directly adjacent to portions of the overhead transmission route.

### ***Steelhead Trout***

**Status:** Federally listed Threatened. San Mateo Creek is designated as Critical Habitat for the steelhead.



**Habitat:** Freshwater streams. Steelhead has the greatest diversity of life history patterns of any Pacific salmonid species, including varying degrees of anadromy, differences in reproductive biology, and plasticity of life history between generations (NMFS, 1996). Within the range of west coast steelhead, spawning migrations occur throughout the year, with seasonal peaks of activity. In any given river basin there may be one or more peaks of migration activity; since these runs are generally named for the season in which they occur, some rivers may have runs known as winter, spring, summer, or fall steelhead. For example, large rivers such as the Columbia, Rogue, and Klamath have migrating adult steelhead at all times of year. Through time, the names of seasonal runs have generally been simplified — in the Pacific Northwest, winter and summer steelhead runs are commonly identified. In northern California, some biologists have retained the terms spring and fall steelhead to name what others would call summer steelhead.

**Occurrence in the Project Area:** San Mateo Creek is situated at the bottom of a deep, steep-sided canyon 200 feet in elevation below the transmission lines at the location of the alignment crossing. Existing and proposed Towers 6/38 and 6/37, located on the north and south slopes of San Mateo Creek, respectively, are near the canyon rim and are located approximately 800 lineal feet upslope from the creek waters.

### ***Bay Checkerspot Butterfly***



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**Status:** The Bay checkerspot butterfly is a federally listed, Threatened species that occurs only in serpentine grassland habitats, especially those characterized by bunch grasses.

**Habitat:** The checkerspot relies upon serpentine soil communities for production of its larval food plants, *Plantago erecta* and *Orthocarpus densiflorus*. Adults consume nectar from *Layia platyglossa*, two species of *Lomatium*, two species of *Allium* and *Lasthenia californica*. The adult flight season is typically from late March through early May (Harrison, 1988; Murphy and Weiss, 1988).

Monitoring data on bay checkerspot butterfly population dynamics has been ongoing since 1960 at nearby locations such as Jasper Ridge Biological Preserve (Harrison et al., 1988; Murphy and Weiss, 1988). The data have indicated that this species demonstrates metapopulation dynamics within a region encompassing much of the lower San Francisco peninsula. Metapopulations are systems of individual populations that exhibit a dynamic and shifting pattern of founding and extinction (Harrison et al., 1988). Small localized populations, vulnerable to extinction, disappear and reappear over the course of many years, while the overall metapopulation survives. Thus these butterflies require a large network of populations and habitats in order to persist (Harrison et al., 1988). Thus disappearance of known populations within an given area is not firmly indicative that the species is extinct at that location.

**Occurrence in the Project Area:** This species is known only from a handful of localities in San Mateo and Santa Clara Counties, but it formerly also occurred in Alameda, Contra Costa, and Marin Counties, and possibly in San Francisco County (Ehrlich et al., 1975). One of the remaining checkerspot populations occurs at Edgewood County Park and Preserve.

The checkerspot was also formerly known to occur in the Ralston portion of the proposed alignment. Focused visual presence-absence surveys were conducted during the spring of 2001 and 2002 in serpentine grassland habitats within the Project Area including Edgewood County Park and Preserve, Ralston-Pulgas Ridge and the Haynes-Black Mountain Road areas of Hillsborough. The 2001 surveys yielded negative findings for the Bay checkerspot. However, this species is known to exhibit metapopulation dynamics and may be present one year and not the next.

In 2002 sixteen surveys yielded detection of 42 adult Bay checkerspots at Edgewood County Park and Preserve between the Jefferson Substation and Edgewood Road. The first individuals were observed on March 31, while additional adults were observed on April 6 and 13. Bay checkerspots were not detected during 13 of the 16 survey days. No other survey dates yielded positive results. No adults or other life stages of the checkerspot were observed at the Ralston-Pulgas Ridge or Haynes-Black Mountain Road areas.

### ***Bald Eagle***

**Status:** Federally listed Threatened.

**Habitat:** The bald eagle winters near large bodies of water including lakes, reservoirs, rivers, marshes, and seacoast throughout California (Small, 1994; Zeiner et al., 1990). Permanent resident, and uncommon winter migrant, now restricted to breeding mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity Counties (Grinnell and Miller, 1944; Small, 1994). About half of the wintering population inhabits the Klamath Basin. However, the bald eagle is regularly present in the Bay Area from November to March and is considered locally rare in San Mateo County (SAS, 2001; Zeiner et al., 1990). More common at lower elevations; not found in the high Sierra Nevada. Largest numbers occur at Big Bear Lake, Cachuma Lake, Lake Mathews, Nacimiento Reservoir, San Antonio Reservoir, and along the Colorado River.



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The bald eagle requires large bodies of water, or free flowing rivers with abundant fish, and adjacent snags or other perches. It typically swoops from hunting perches, or soaring flight, to pluck fish from water but it also feeds on carrion (Brown and Amadon, 1968). Perches are located high in large, stoutly limbed trees, on snags or broken-topped trees, or on rocks near water. Bald eagles roost communally in winter in dense, sheltered, remote conifer stands (Brown and Amadon, 1968; Zeiner et al., 1990).

**Occurrence in the Project Area:** Upper and Lower Crystal Springs Reservoir and San Andreas Lake are considered the best locations on the San Francisco Peninsula for finding this species (SAS, 1996). Most winters, one individual is present in treetops, on snags and open ground along the shorelines of these lakes, particularly at Upper Crystal Springs Reservoir (SAS, 1996). Several existing towers, particularly 13/83 to 13/87, are within the area that could be used as eagle perches.

### ***Species of Conservation Concern***

There are numerous species that are not listed as threatened or endangered at the State or federal level, whose populations and conservation are of concern to State and federal natural resource agencies. Eighteen terrestrial wildlife species of concern have been identified as potentially inhabiting areas that would be impacted by the project. Songbirds, raptors, apodotes, herons, egrets, and waterbirds may breed within, migrate through or over-winter within the Project Area. There is suitable nesting habitat for the California yellow warbler (*Dendroica petechia brewsteri*) and the San Francisco common yellowthroat (*Geothlypis trichas sinuosa*) within the Project Area. No suitable nesting habitat was found during surveys for the purple martin (*Progne subis*) or Vaux's swift (*Chaetura vauxi*). Seven mammal species of concern potentially could occur in the Project Area the San Francisco dusky-footed wood rat (*Neotoma fuscipes annectens*) and six species of bats.

Six special-status invertebrates potentially occur in the Project Area (Appendix 5C). Invertebrates such as Ricksecker's Water Scavenger Beetle and the serpentine phalangids also occur in the Project Area. The water scavenger beetle inhabits slow-moving freshwater streams, ponds, or marshes, or lakes of the San Francisco Bay Area. This beetle has previously been observed at the Pulgas Temple of the Crystal Springs Reservoir watershed, which is located west of Towers 2/17 and 3/18 and the ROW. Its natural habitat at this location may be a perennial, unnamed stream (which is crossed by the transmission line) or the reservoir.

**Edgewood Blind Harvestman, Edgewood Microblind Harvestman, and Serpentine Phalangid.** Harvestmen in the genera *Calicina* and *Microcina* are generally found under serpentine rocks, particularly in association with serpentine grassland or woodland vegetation. *Calicina* commonly known as the Edgewood blind harvestman, is known only from two localities in San Mateo County, Edgewood County Park and Preserve and 0.75 miles north of Crystal Springs Dam at a spring along San Mateo County Road No. 14 (Briggs, 1968; Ubick and Briggs, 1989).

Three aquatic vertebrate species of concern potentially occur within creeks and ponds within the Project Area. One species, the river lamprey (*Lampetra ayresi*), is assumed present in San Mateo Creek. The creek will not be directly affected during construction or operations and maintenance. Two other aquatic species of concern have low potential for occurrence within the Project Area, including the California tiger salamander (*Ambystoma californiense*) and western pond turtle (*Clemmys marmorata*).

**California Tiger Salamander.** The tiger salamander was a federal candidate species and a State species of special concern (Federal Register, 2001; vol. 66, page 54818; California Regulatory Notice Register, 2002, Volume 9-Z, pages 469-472). In March 2003 the USFWS listed it as an Endangered Species in Sonoma County (Federal Register vol. 68, NO. 53, Wednesday March 198, 2003, page 13488). Historically, the California tiger salamander inhabited grasslands throughout much of the State. Presently, they are distributed in remaining grassland/wetland habitats in the Central Valley, the Sierra Nevada foothills (below approximately 1,000-foot elevation), and the coastal region (Butte County south to Santa Barbara County (ACCDA, 1998; Zeiner et al., 1988). The conversion of valley and foothill grassland habitats to agricultural and urban uses has resulted in population declines of this species. Introductions of non-native predators, such as the bullfrog, have also been detrimental to this amphibian species (USFWS, 2000b).

The California tiger salamander breeds in vernal pools and ponds, and summers (estivates) in animal burrows or soil crevices (Stebbins, 1985; Zeiner et al., 1988). This species may also breed in artificial impoundments that do not contain fish as well as in slow-moving streams. Breeding ponds must remain wet for approximately 10 weeks (generally until mid-May) to allow sufficient time for breeding and metamorphosis (Zeiner et al., 1988). At least 65% of its habitats have been eliminated and its current distribution is discontinuous and fragmented (USFWS, 2000b). Other habitats used by this species include grasslands and oak woodlands (Zeiner et al., 1988). Adults migrate at night during rain events, and may disperse 1 mile (1.6 km) between summering and breeding sites; depending on topography and vegetation, the distribution of ground squirrel or other rodent burrows, and climatic conditions (USFWS, 2000b; Zeiner et al., 1988). Patches of marginal habitat exist in the southern half of the alignment, but no breeding sites were identified during field surveys in 2002. The nearest record of California tiger salamander to the Project Area is more than five miles south of the project in Lagunita Lake on the Stanford University campus ((PG&E, 2002).

**Southwestern Pond Turtle.** The southwestern pond turtle inhabits ponds, marshes, small lakes, ditches, and streams with quiet or sluggish water and a sandy or muddy bottom supporting aquatic plants (Stebbins, 1985). Basking sites such as mudbanks, logs, and rocks are an important habitat component (Stebbins, 1985). These turtles are more terrestrial than formerly believed, possibly spending up to 70 percent of their time in woodland and grassland habitats. Oviposition sites are typically in upland habitats. The population on the San Francisco Peninsula belongs to the southwestern subspecies, *C. m. pallida* (Stebbins, 1985).

San Andreas Lake and the Crystal Springs Golf Course pond provide marginal aquatic habitat, and some adjacent upland habitats are potentially suitable. There are no records in the CNDDDB and southwestern pond turtles are not expected to occur in the Project Area.

The **San Francisco dusky-footed wood rat** is assumed present in forest and chaparral throughout the Bay Area (CDFG, 2001; Zeiner et al., 2001). It prefers a moderate canopy and brushy understory where it builds conspicuous and long-lasting stick houses on the ground and in trees (Zeiner et al., 2001). Within the Project Area, there is high potential for occurrence of this species in the oak woodland habitat that is concentrated south of San Mateo Creek, especially around existing Towers 2/13, 2/15, 2/16, 3/18, 3/22, and 6/36 to 6/38. Two stick houses were found next to existing Tower 3/22 during habitat assessments. Although no trapping was conducted to confirm species identification, it is believed that the stick houses represent occupied habitat for the San Francisco dusky-footed woodrat.

Six bat species may inhabit the Project Area (CDFG, 1998; CDFG, 2002). These include long-eared myotis (*Myotis evotis*); fringed myotis (*Myotis thysanodes*); long-legged myotis (*Myotis volans*); Townsend's western big-eared bat (*Corynorhinus townsendii townsendii*); pallid bat (*Antrozous pallidus*); and western mastiff bat (*Eumops perotis*) (refer to (PG&E, 2002, Table 6-4). There may be roosting habitat (i.e., woodlands, rock crevices) within the area impacted by the alignment.

**Raptors and Owls.** There are many raptor and owl species that could inhabit the project area ranging from small American kestrels (*Falco sparverius*) to larger species such as Barn Owl (*Tyto alba*), Great-horned Owl (*Bubo virginianus*), Osprey (*Pandion haliaetus*), and the Peregrine falcon (*Falco peregrinus*) (Small, 1994). The San Francisco Peninsula is on the southern end of the Pacific coast raptor migration route as visible on the map (Figure Ap.5A-1). The Golden Gate Raptor Observatory ([www.ggro.org](http://www.ggro.org)) is located at Hawk Hill on the Marin Headlands, an historic migration stopover for raptors moving up and down the Pacific coast (Grinnell and Miller, 1944; Small, 1994). See also Hawk Migration Association of

North America 2003, www.hmana.org). Many of these species are on the USFWS list of Birds of Conservation Concern (USFWS, 2002b).

Below are some examples of raptor/owl species that may breed and live year-round in the project area.

- **White-tailed kite (*Elanus leucurus*).** This species was recorded as a possible, probable, or confirmed breeder in five of the seven San Mateo County Breeding Bird Atlas (SMCBBA) blocks traversed by the alignment (SAS, 2001). This species generally nests in trees (shrubs such as *Baccharus spp.* have also been used in the Bay region of the Suisun Marsh), including cottonwoods, redwood, pine, walnut, and oak. Kites may be found in riparian habitat and suburban woodland habitat adjacent to open grasslands, agricultural lands, or marshland (Erichsen et al., 1996; Grinnel and Miller, 1944; Small, 1994). White-tailed kites roost communally year-round in various types of habitats ranging from urban trees to orchards and ground crops (Erichsen et al., 1996). No known nests or communal roosts were identified in the provided biological surveys (PG&E, 2002).
- **Northern Harrier (*Circus cyaneus*).** The Northern Harrier builds its nest on the ground and is recorded as a possible breeder in the San Mateo County Bird Breeders Atlas (SMCBBA) block containing part of San Andreas Lake (SAS 2001). The marsh at the north end of the lake also appears to be suitable nesting habitat and harriers may nest within one-quarter mile of the alignment between existing Towers 12/77 and 14/95.
- **Sharp-shinned Hawk (*Accipiter striatus*).** This accipiter species is recorded as a probable or possible breeder in five of the seven SMCBBA blocks traversed (SAS, 2001). Suitable nesting habitat appears to exist in dense stands of Monterey pine (*Pinus radiata*) near existing Towers 11/72 and 12/76 to 12/82.
- **Cooper's Hawk (*Accipiter cooperi*).** Cooper's hawk is recorded as a possible, probable, or confirmed breeder in all seven of the SMCBBA blocks traversed by the alignment (SAS, 2001). Distribution of suitable nesting habitat is probably similar to that described above for sharp-shinned hawk.
- **Ferruginous Hawk (*Buteo regalis*).** The ferruginous hawk winters in California from September to April (Small 1994). The only part of San Mateo County in which this species is expected is the coast from Half Moon Bay south, and there only briefly and in very small numbers (SAS, 1996). Marginal habitat exists south of Bunker Hill Drive in open grasslands, especially existing Towers 0/4 to 1/8 and 4/26 to 6/34, but the species is unlikely to occur within the Project Area with any regularity.
- **Red-shouldered Hawk (*Buteo lineatus*).** The small buteo prefers woodland for breeding adjacent to open grassland, pasture, chaparral, or agricultural land (Brown and Amadon, 1968). This species was observed in April 2003 between Towers 3/22 and Tower 4/23 in woodland between the edge of Upper Crystal Springs Reservoir and Cañada Road.



Figure Ap.5A-1. Pacific Coast Raptor Migration Route

**Golden Eagle (*Aquila chrysaetos*).** The golden eagle is an uncommon resident or winter visitor in open, grassland, scrub, or desert habitat throughout California (Zeiner, et al., 2001). Occasional individuals may forage in the grassland habitat present in the southern portion of the Project Area, but the prey base is probably insufficient to support them and disturbance probably too intensive for them to nest within the Project Area.

- **Peregrine Falcon (*Falco peregrinus*).** This large falcon species is known to nest on cliffs, ledges, bridges, and other tall cliff-like structures in the San Francisco region where it hunts waterfowl and other birds (USFWS 2002b; Zeiner et al. 1990). Peregrine falcons frequent bodies of water in open areas with nearby cliffs and canyons, similar to those found in the Project Area.
- **Merlin (*Falco columbarius*).** A few merlins may occur in the Project Area during the winter. Some have been observed near the reservoirs from fall to spring and often perch on the transmission towers, especially near San Andreas Lake (SAS, 1996).
- **Prairie Falcon (*Falco mexicanus*).** This falcon species inhabits a range of desert, grassland, alpine meadows, rangeland, scrub, and other open habitats in California (Small, 1994; Zeiner et al., 1990). This species hunts mammals, small birds, and reptiles (Zeiner et al., 1990). A prairie falcon was observed flying north of Tower 3/22 on April 17, 2003. Similar to other large falcons this species builds eyrie scape nests on cliff sides and ledges (Zeiner et al., 1990). No information was available at the time regarding nesting activity in the area although it is possible.

**Songbirds.** There is suitable nesting habitat for numerous songbird species. The California yellow warbler (*Dendroica petechia brewsteri*) and the San Francisco common yellowthroat (*Geothlypis trichas sinuosa*) are two Species of Concern that breed within the Project Area. Suitable habitat for the yellow warbler includes willows in the small wetland northwest of existing Tower 14/95 and on the shore of San Andreas Lake near existing Tower 13/83. The common yellowthroat favors tall grasses, tule patches, and willow thickets as well as saltwater and brackish habitats (Grinnell and Miller, 1944; Zeiner et al., 1990). There are several CNDDDB records from Upper Crystal Springs Reservoir and it is recorded as a possible, probable, or confirmed breeder in five of the seven SMCBBA blocks traversed by the alignment (SAS 2001). Several individuals were heard in the wetland northwest of existing Tower 14/95 south of the Sneath Substation during the habitat assessment. Marginal habitat also exists at San Andreas Lake near existing Tower 13/83. No suitable nesting habitat was found during surveys for the purple martin (*Progne subis*) or Vaux's swift (*Chaetura vauxi*).

Other avian species of concern that may nest within forest edges and grasslands include: the Loggerhead shrike (*Lanius ludocicianus*), the olive-sided flycatcher (*Contopus cooperi*), and the Pacific-slope flycatcher (*Empidonax difficilis*) (Zeiner et al., 1990). The shrike is a predatory passerine that forages in open grasslands and nests in shrubs. The olive-sided flycatcher prefers more densely forested habitats for nesting such as mixed conifer forests, often constructing a nest out of moss, grasses, lichens, or pine needles (Zeiner et al., 1990). The Pacific-slope flycatcher nests in the crotch of trees (willow, alder riparian forest), or on cliffs as well as manmade structures such as barns. During the breeding season these insectivorous species forage in meadows, clearings, or shrublands often adjacent to riparian areas or open water.