

**Sensitive Wildlife Species Surveys and Observations for the White Pines Wind
Resource Area - 2009 Field Season**



Prepared By:

Joelle Gehring, Ph.D.
Senior Conservation Scientist-Zoology Section Leader
Michigan State University, Michigan Natural Features Inventory
P.O. Box 30444 Lansing, MI 48909-7944

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Sensitive wildlife species surveys were conducted for the White Pines Wind Resource Area (WPWRA) in the Huron-Manistee National Forest in the spring and summer of 2008 and 2009 (Fig. 1) as well as during bird surveys in 2006, 2007, 2008, and 2009 (Erickson et al. 2008). This report provides an overview of: the natural histories of 7 target sensitive species, the survey methods used to quantify their presence/absence, and summaries and interpretations of the survey results for 2009.

King Rail

Natural History

The King Rail (*Rallus elegans*) is a Michigan endangered species that inhabits permanent, herbaceous, freshwater wetlands. In Michigan, King Rails have been found in expanses of monotypic cattails (*typha* spp.) as well as mixtures of cattails, grasses (Poaceae), and sedges (Cyperaceae; Evers 1984, Rabe 1986). Foraging in water approximately 4 cm in depth, King Rails feed mainly on small crustaceans, fish, frogs, and insects (Rabe 2001). King Rail populations have declined dramatically over the last 30 years mainly as a result of the loss of wetlands and pesticide use. This species has also been documented to collide with lit structures such as communication towers and tall buildings during migration (Rabe 2001). Breeding King Rails have only been detected in 9 counties of Michigan, specifically in the southern portion of the Lower Peninsula. Kent County (approximately 50 miles from the project area) is the closest county that has an element occurrence for King Rails.

Methods

The King Rail is a secretive bird that is rarely seen but can be more frequently heard during courtship and incubation periods (Rabe 2001). Following the protocol suggested in the Proceedings of the Marsh Bird Monitoring Workshop (USFWS and USGS 1999) surveys for King Rails were completed within 4 hours of sunrise in wetland habitats (Fig. 2) along the proposed development corridors May 2009. Surveys consisted of 3 minutes of silent listening at each broadcast survey point, followed by one minute of broadcast king rail vocalizations alternating with 1 minute of silent listening. This sequence was repeated 3 times at each broadcast survey point. Surveys were discontinued if winds were greater than 15 km per hour or if moderate or heavy precipitation fell.

Results and Conclusions

Three sites were surveyed in the WPWRA (Fig. 2). No King Rails were detected. Few of the wetland sites located along the development corridors of the WPWRA would be considered high quality King Rail habitat as most were forested, or had dense woody vegetation.

Nocturnal Birds

Natural History

Four species were targeted in the nocturnal bird surveys: Long-eared Owl (*Asio otus*), Northern Saw-whet Owl (*Aegolius acadicus*), Common Nighthawk (*Chordeiles minor*), and Whip-poor-will (*Caprimulgus vociferus*). The Long-eared Owl is protected as a threatened species in Michigan. This species uses a diversity of forest communities but tends to be more closely

associated with conifer forests located in close proximity to open grassy areas (Marks et al. 1994, Michigan Natural Features Inventory 2007). Their diet consists mainly of small mammals and some birds. Population declines are thought to be a result of land development and related habitat loss. The MNFI database has 3 element occurrences in Michigan from Mackinac, Macomb, and Oakland Counties, respectively. These counties are more than 150 miles from the project area. The Northern Saw-whet Owl is not listed as threatened or endangered in Michigan. Given their status they are not tracked in the MNFI database. They use densely forested areas with increased use of conifers during the winter. Similar to the Long-eared Owl, the Northern Saw-whet Owl eats both small mammals and birds as well large insects (Cannings 1993).

Neither the Common Nighthawk nor the Whip-poor-will are listed as threatened or endangered in Michigan; however, there is growing concern that their populations are declining (Poulin et al. 1996, Cink 2002). Both species typically inhabit forested areas with the Common Nighthawk also using more open agricultural and urban areas as well. In a recent Michigan study, both species tended to be associated with clearcut forest areas, especially for foraging activities (Barton 2007). Both insectivores, these species forage for aerial insects occasionally using concentrations of insects found in proximity to anthropogenic light sources. Population declines are thought to be related to habitat loss as previously clearcut areas regenerate into mature forests; thereby, eliminating foraging sites (Poulin et al. 1996, Cink 2002). Because neither of these species are listed as threatened or endangered, MNFI does not track them in their database. Barton (2007) reported their presence in the state from her 2005-2007 Nightjar survey effort (Figs. 3 and 4).

Methods

Nocturnal bird surveys were conducted at the WPWRA in early June 2009. These surveys were conducted along the proposed development corridors (Fig. 5) at 800-m intervals and protocols were based on the United States Nightjar Survey Network Protocol (CCB 2004) and the Guidelines for Nocturnal Owl Monitoring in North America (Takats et al. 2001). Surveys were initiated approximately 30 minutes after sunset and ended 30 minutes before sunrise. Each survey consisted of 6 minutes of silence at each broadcast location, followed by 2 minutes of broadcasted Northern Saw-whet Owl calls and 2 minutes of broadcasted Long-eared Owl calls, followed by 2 minutes of silent listening. According to the protocol, environmental conditions were monitored throughout the survey nights to avoid surveying during periods of rain, cloud cover of more than 50% and winds were greater than 24 km per hour.

Results and Conclusions

Five nocturnal bird surveys were conducted in WPWRA. Neither of the target owl species were detected. However, four survey points had Whip-poor-will responses ranging from 1-2 individual birds detected (Fig. 5) for a total of 5 Whip-poor-wills. No Common Nighthawks were detected.

Northern Goshawk and Red-Shouldered Hawk

Natural History

The Red-shouldered Hawk (*Buteo lineatus*) is considered a threatened species in Michigan and the Northern Goshawk (*Accipiter gentilis*) is listed as a species of special concern. Both raptors

inhabit mature forested areas with the Red-shouldered Hawk demonstrating a greater propensity for forested wetland areas (Cooper 1999a and b). The Red-shouldered Hawk eats a diversity of prey including small mammals, amphibians, reptiles, birds, and invertebrates. The Northern Goshawk preys on many bird species, including Ruffed Grouse (*Bonasa umbellus*), but also forages on small and medium mammals. Both species are thought to be declining as a result of habitat loss due to timber harvest and wetland elimination (Cooper 1999a and b).

A query of Michigan Natural Features Inventory's NatureServe database for Element Occurrences found records for both Red-shouldered Hawk and Northern Goshawk. Records for animal Element Occurrences require that birds show evidence of breeding at the location. The Northern Goshawk record was located in the southern portion of the WPWRA; however, the Red-shouldered Hawk record was more than 1700 m south of the project. Given the habitat preferences mentioned previously, both of these species are likely to occur in the WPWRA, with at least one known nesting attempt by the Red-shouldered Hawk in 2008. Buffering nest areas from timber harvest and temporally planning disturbance activities around nesting season are believed to be some of the most important variables to consider when preventing further population decline (Cooper 1999a and b).

Methods

Broadcast call surveys for both Red-shouldered Hawks and Northern Goshawks were conducted twice along the development corridors between May and early-July 2009 (Fig. 6). Surveys were conducted after sunrise and before sunset. Broadcast survey points were set up approximately every 300 m within the development corridors following the Huron-Manistee protocol provided by Chris Schumacher (USFS). At each broadcast survey point, hawk vocalizations were broadcast for 10 seconds, followed by 30 seconds of silence during which the observer listened and watched for responses by raptors, followed by another 10 second broadcast and 30 seconds of listening and watching. Each sequence of broadcast hawk calls were played to the right, to the left, and to the front of the observer at each broadcast survey point as the observer progressed down the development corridor. Surveys for both hawk species were conducted at all points within 800 m of forested areas > 40 years old and within 800 m of wetland areas. Only Northern Goshawk calls were broadcast from survey points that were within 800 m of forested areas but farther than 800 m from wetland areas. Similar to other survey protocols, surveys were discontinued when winds were greater than 24 km per hour or if there was medium to heavy precipitation.

Results and Conclusions

Twenty-five survey points were surveyed for raptors in the WPWRA. Six survey points detected a total of eight Red-shouldered Hawks during the first visit (Fig. 6) and one survey point detected one individuals of this species during the second visit (Fig. 7). The survey point where the Red-shouldered Hawk were detected during the second visit was the only survey point where Red-shouldered Hawks were detected during both visits. Red-shouldered Hawks tend to be very vocal during the breeding season suggesting that this species was potentially responding to the broadcast caller some distance away from their nests. Two of the Red-shouldered Hawk responses were consistent an active nest within the development corridor (i.e., strong responses indicating an active nest typically include two hawks vocalizing in close proximity to the observer). These two sites are identified in Fig. 6 as a 2-bird response. However, no nest

structures were detected by botanists and other researchers during their data collection in the WPWRA. The general locations of the Red-shouldered Hawk responses are consistent with their habitat preferences for forested wetlands (Figs. 6 and 7). No Northern Goshawks were detected during the surveys. Based on the lack of strong territorial responses by Red-shouldered Hawks or Northern Goshawks, it is highly unlikely there were nests within or in close proximity to the majority of the facility corridors. Additional nests searches should take place near the two areas with strong Red-shouldered Hawk responses before construction is initiated. A non-target hawk species, the Red-tailed Hawk (*Buteo jamaicensis*), was observed during the first visit to a survey point (Fig. 8). The Red-tailed Hawk did not vocalize or display any otherwise defensive behavior.

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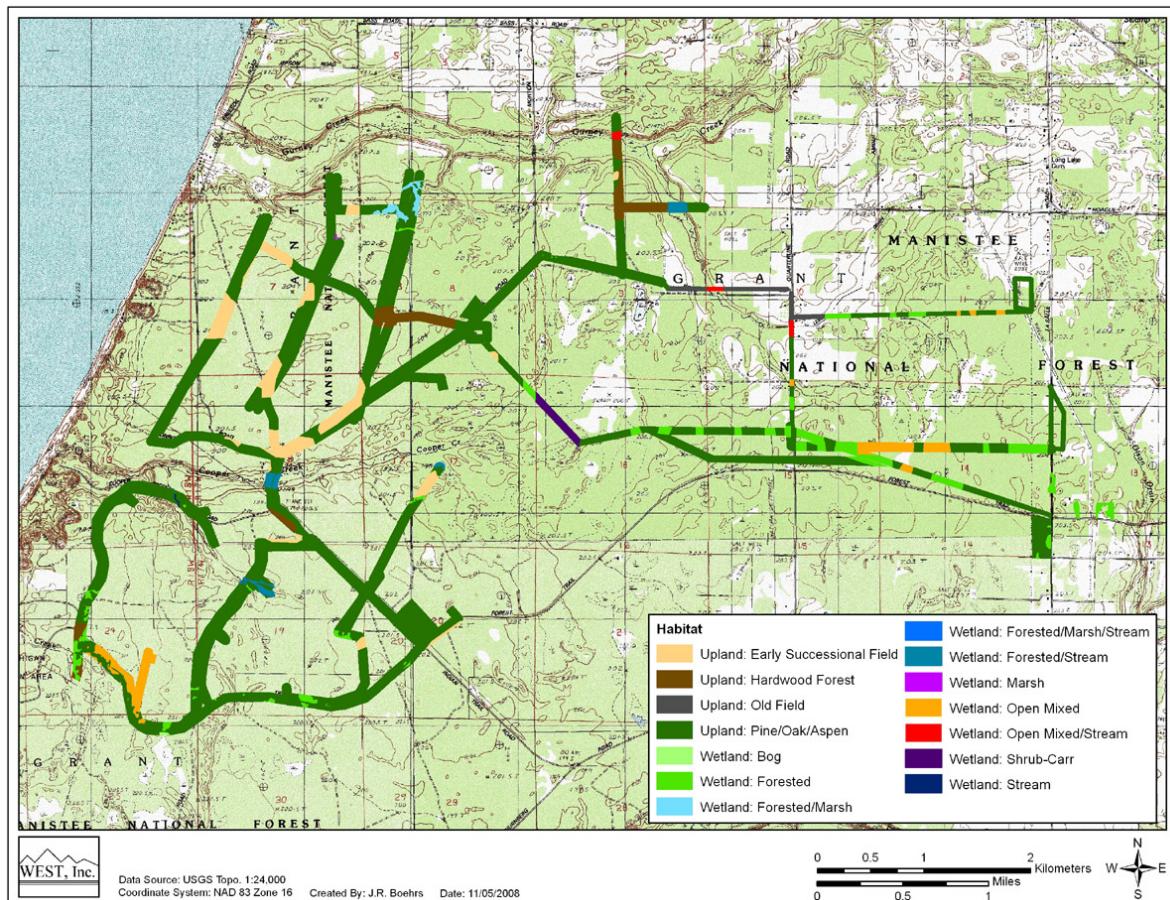


Figure 1. White Pines Wind Resource Area in the Huron-Manistee National Forest in the Lower Peninsula of Michigan along the eastern shore of Lake Michigan. Habitat types are delineated for turbines, access roads, and transmission lines.

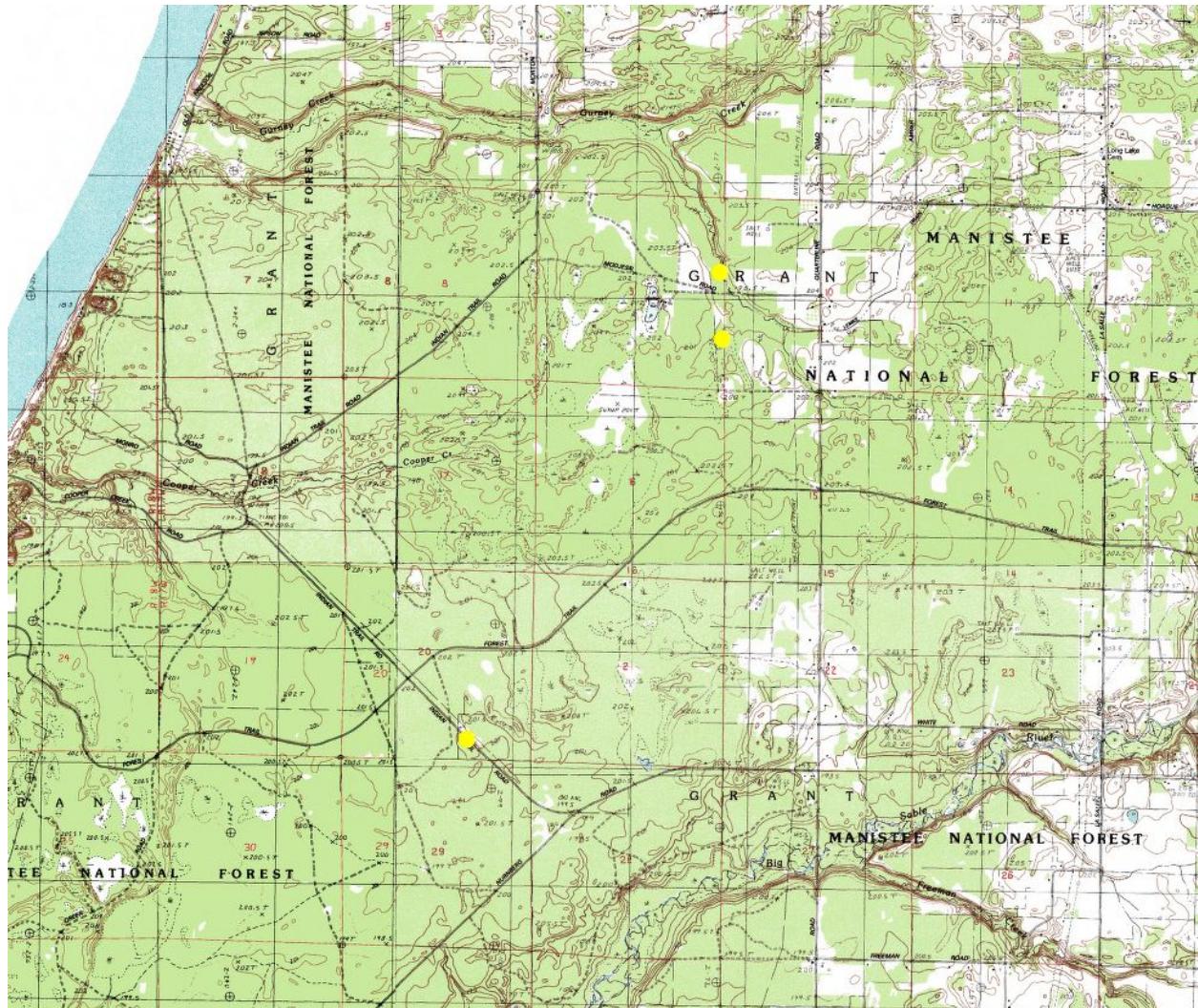


Figure 2. Survey points for King Rails were established in wetland habitats along the proposed development corridors for the Wind Pines Wind Resource Area, Michigan. No King Rails were detected in the spring of 2009.

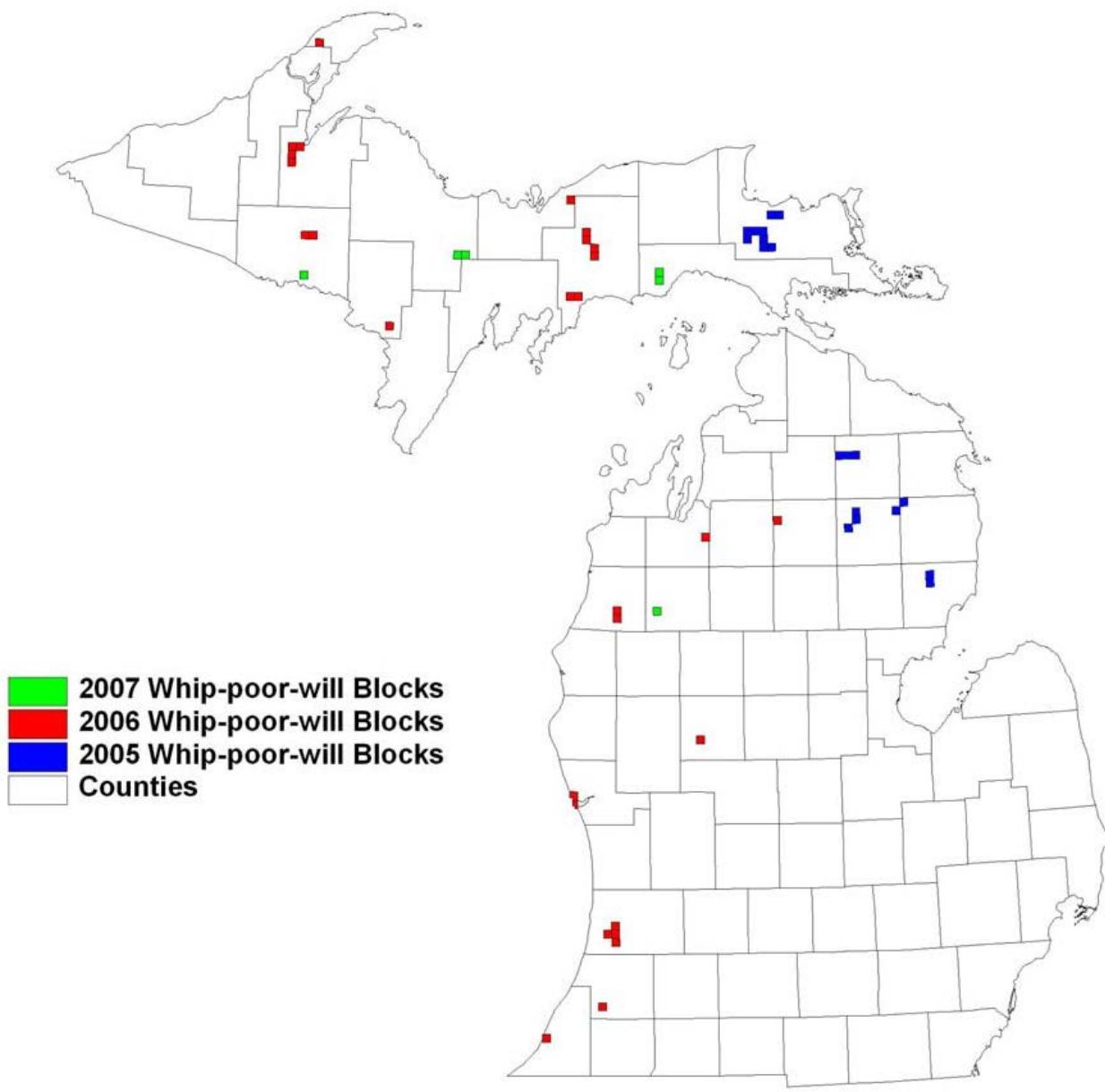


Figure 3. Michigan Breeding Bird Atlas II survey blocks with Whip-poor-will detections in 2005-2007 (figure from Barton 2007).

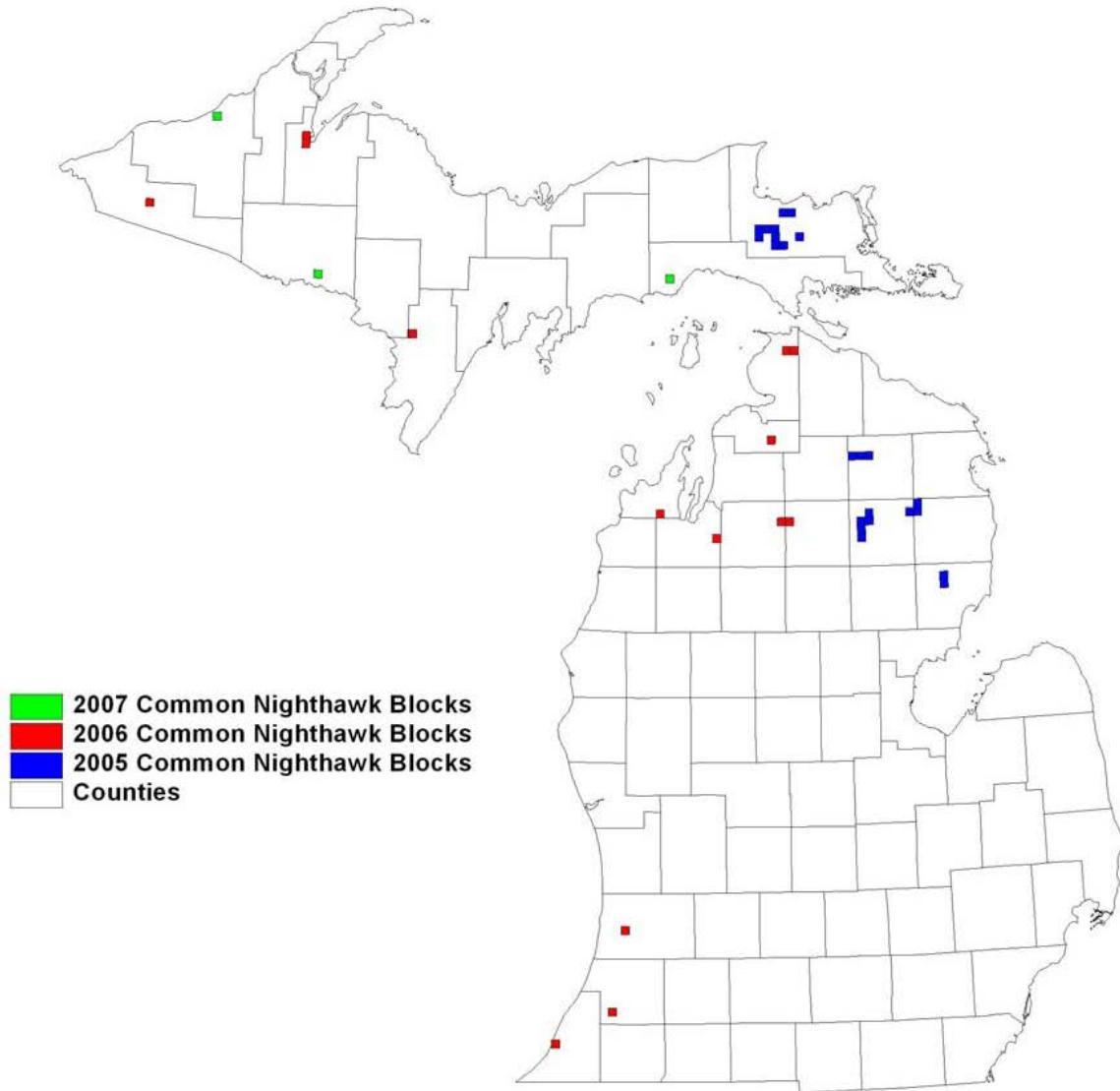


Figure 4. Michigan Breeding Bird Atlas II survey blocks with Common Nighthawk detections in 2005-2007 (figure from Barton 2007).

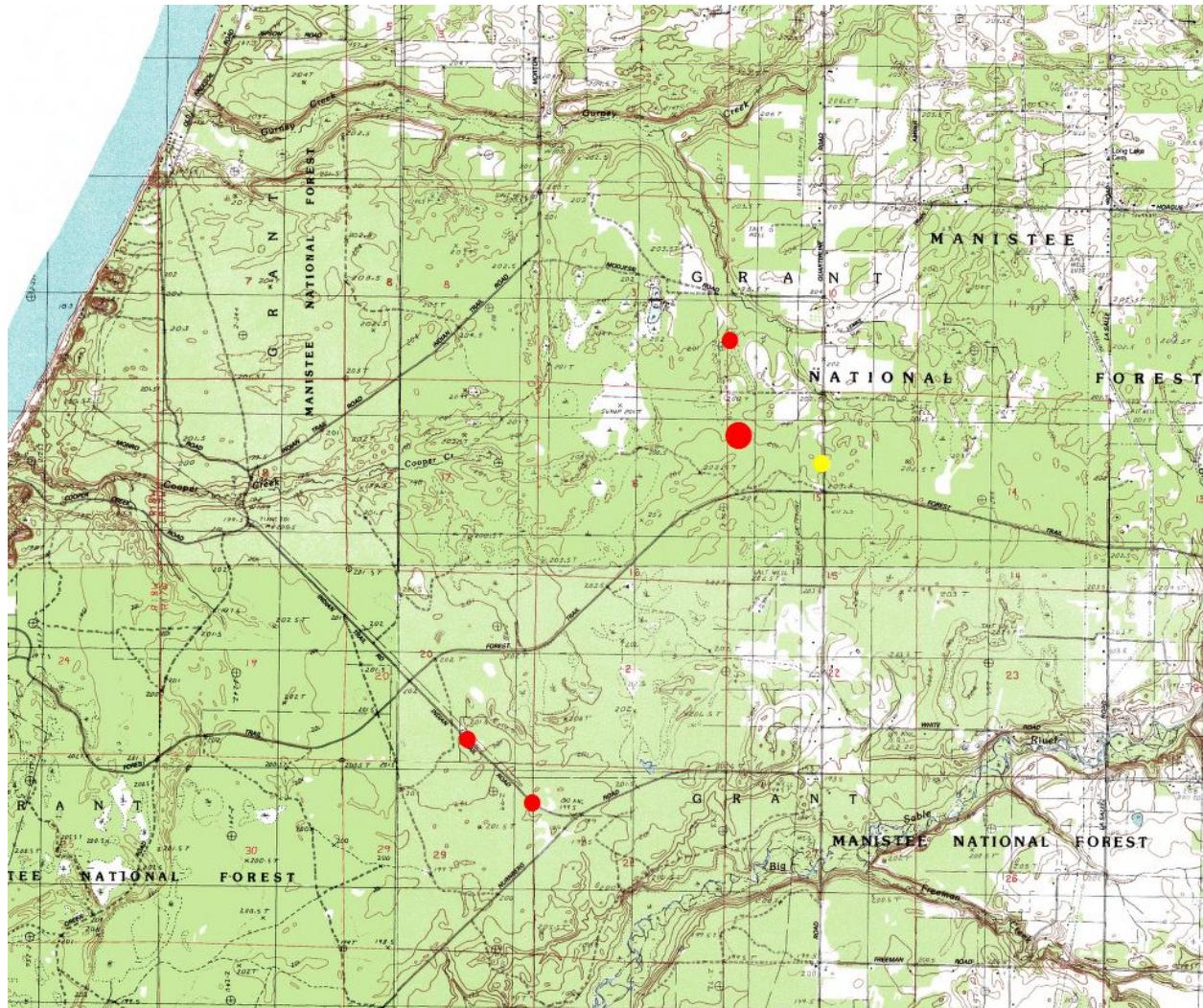


Figure 5. Survey points were established at 800-m intervals along the proposed development corridors for the Wind Pines Wind Resource Area, Michigan. These sites were surveyed in early June 2009. Whip-poor-will responses are shown in red with larger circles representing the detection of two individuals and smaller circles representing one individual.

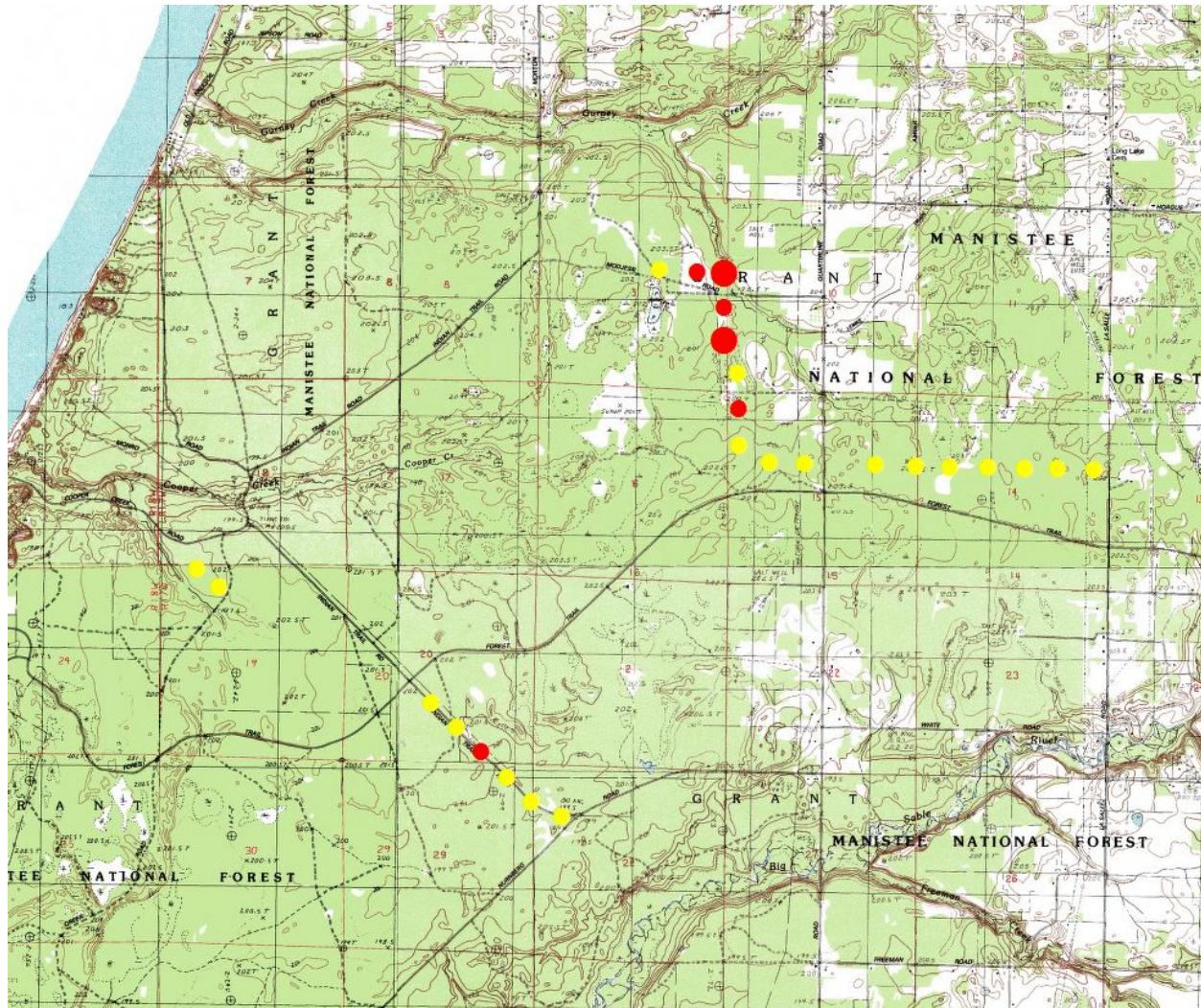


Figure 6. Survey points were established at 300-m intervals along the proposed development corridors for the Wind Pines Wind Resource Area, Michigan. These sites were surveyed two times between May and early-July 2009. Red-shouldered Hawk responses during the first visit are shown in red with larger circles representing the detection of two individuals and smaller circles representing one individual.

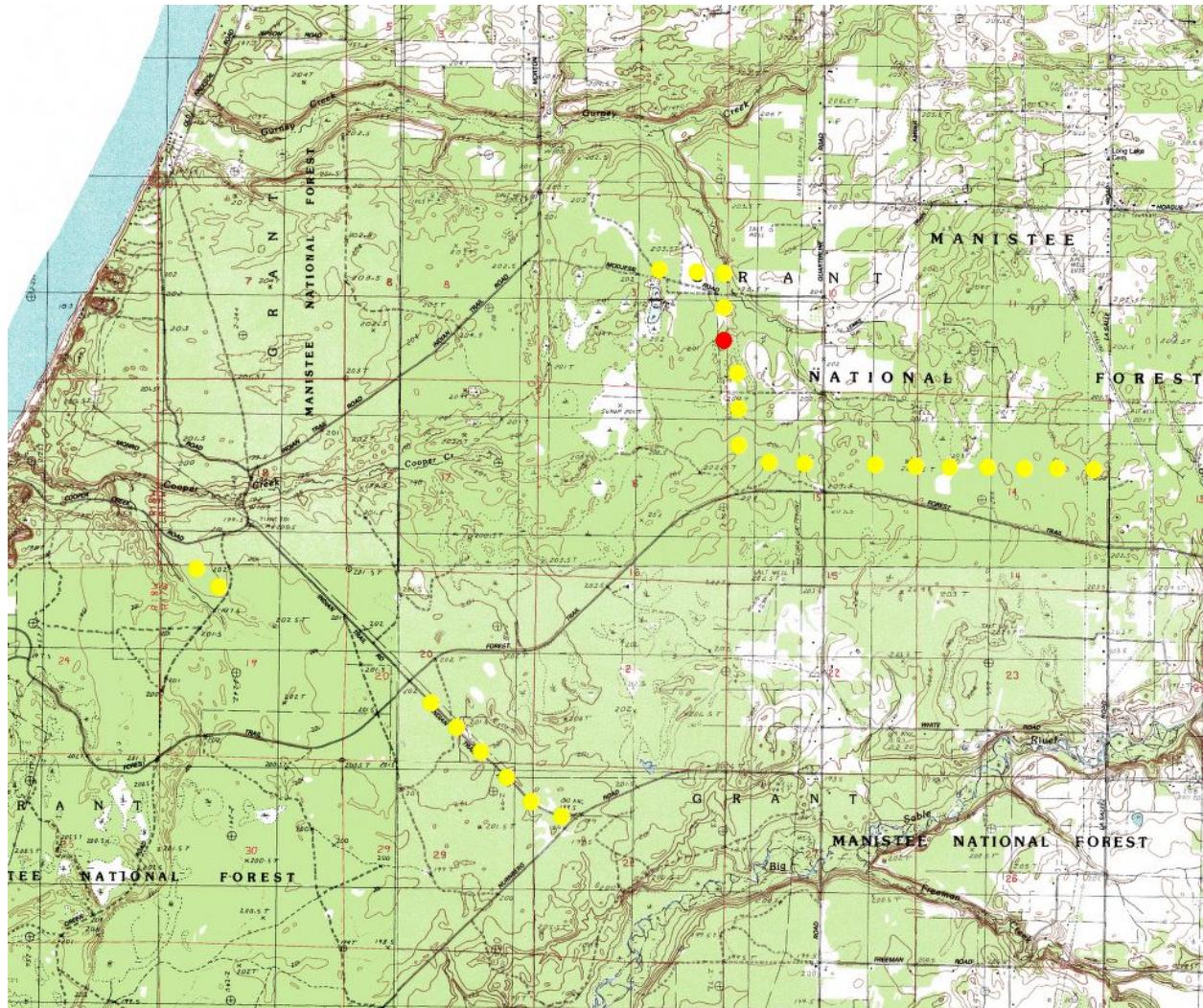


Figure 7. Survey points were established at 300-m intervals along the proposed development corridors for the Wind Pines Wind Resource Area, Michigan. These sites were surveyed two times between May and early-July 2009. Red-shouldered Hawk responses during the second visit are shown in red (one individual present).

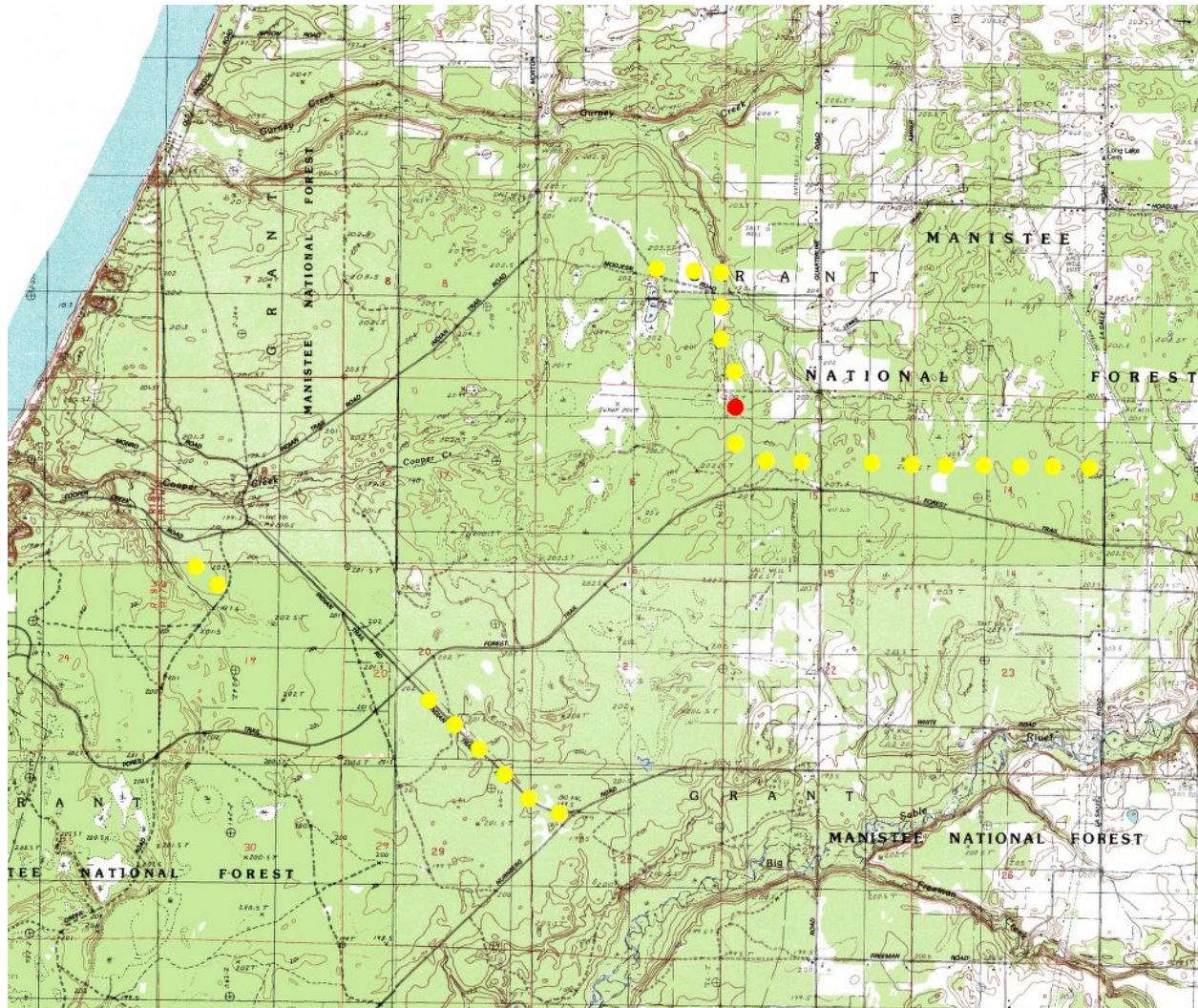


Figure 8. Survey points were established at 300-m intervals along the proposed development corridors for the Wind Pines Wind Resource Area, Michigan. These sites were surveyed two times between May and early-July 2009. The one Red-tailed Hawk response is shown in red.