

Appendix L

Northern Harrier Surveys

**Summary of Northern Harrier Field Surveys at Northwest Ohio Wind Energy
Project
Spring 2010 and 2013
Paulding County, Ohio
Westwood Professional Services
May 23, 2013 Ref: 20101023.01**

Background

Westwood Professional Services (Westwood) was contracted by Northwest Ohio Wind Energy, LLC to conduct northern harrier field surveys at the Northwest Ohio Wind Energy Project in southern Paulding County of northwest Ohio. In January 2010, the Ohio Department of Natural Resources Division of Wildlife (DOW), in coordination with the U.S. Fish and Wildlife Service, prepared survey recommendations for the project area. The DOW determined that the proposed facility required the “minimum” level of sampling effort based upon the location and land-use practices of the site. “Over 95% of this project’s land is currently in active agriculture, and thus, not suitable habitat for most species of birds or bats. The DOW has no records of protected species of raptor (hawks, falcons and eagles) nesting or bat observations within 5-miles of the project site.” Additionally, the Division of Natural Areas and Preserves database was reviewed for the project site and “no records of rare or endangered species” were found. Further coordination, conducted on site in late April 2010 with representatives from the wildlife agencies and project development team, minimized the avian survey recommendations further to include only northern harrier monitoring (state-listed endangered) due to lack of suitable habitat for Ohio breeding birds, especially those with federal and/or state conservation status. Accordingly, breeding season northern harrier surveys were conducted in 2010.

After a two year dormancy period, the project was revitalized in late 2012. Westwood re-established contact with the wildlife agencies in March 2013 to assess the need for updated studies. The DOW recommended updated northern harrier surveys, which is consistent with the *On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio*. Northern harrier surveys were conducted in May 2013 to assess whether this species utilizes the project area for nesting.

Methods

Detection of ground-nesting northern harrier nests is much more difficult than locating a typical tree-nesting raptor stick nest because ground nests are much more concealed by terrain and vegetation. To locate potential northern harrier nests, every public road in the project area was surveyed twelve times during the breeding season, stopping every mile to scan with binoculars and a spotting scope for northern harriers. Surveys totaled 60-hours in 2010 and an additional 60 hours in 2013. Specific attention focused on stream and creek corridors that northern harriers typically prefer for hunting and nesting. If a harrier was observed, that bird was followed as long as possible and flight movements were mapped with notes on behavior, sex, and habitat. The compilation of mapped flight movements and behavioral cues highlighted potential nesting areas. A nesting location could then be determined to approximately 100 meter accuracy based on

habitat, repeated flight patterns, and behavioral cues such as material carries, food carries, aerial passes of food, and territory defenses.

It should be noted that the project area changed between 2010 and 2013. While there is substantial overlap between the two project areas, the 2013 extends further north and west than the 2010 boundary. The 2010 boundary extended south to the Van Wert County line, while the general south boundary of the 2013 boundary is State Highway 114. This project area change did not result in a significant change to the land use percentages of the overall project area.

Results 2010

Female northern harriers were detected on three survey days; however, none of these observations indicate use of the project area for breeding. A female was observed in the late afternoon of May 13, flying almost uncontrollably in the gusty south winds (approximately 35 mph) and being harassed by red-winged blackbirds in the south-central portion of the 2010 project area, but outside the 2013 project area. This bird was followed north for about a mile until she grounded herself in an agricultural stubble field and could not be relocated. Due to the winds, direction of flight, proximity to the southern project boundary, and lack of observations in the previous day and a half of any other harriers (female or male), it is likely this bird was in the project area as a result of the weather conditions and not because it breeds in the project area.

A female was again detected June 7 and 8 in the same location both days, but in a different location than the May 13 sighting; it cannot be determined if the birds were the same individual amongst May and June survey days (no harriers were detected during May 26 and 27 surveys). The more recent observations were of a female hunting just above the ground repeatedly flying over a north-south 2-track approximately ¼ mile west of County Road 137 and County Road 60. She was also observed preening between flights. Hunting behavior was observed for approximately 45 minutes during the mid-morning of both days before she made uncharacteristic high, straight-line flights to the west and out of sight (nearly two miles before she was out of sight through high powered optics). She was relocated a few times, once north of the project area hunting along Blue Creek, which is open in some places and fairly wooded in others; once soaring high and being harassed by blackbirds; and once again in the vicinity of the 2-track, flying high. These non-hunting flights are not typical of breeding season northern harrier behavior, especially for a female.

Results 2013

Female northern harriers were observed May 6 and 7 in similar locations. While it is likely that the same female was observed multiple times, this cannot be confirmed. A female was first observed hunting near County Road 48 and County Road 131 on the morning of May 6 and followed for about a half hour. She hunted the Hagerman Creek stream corridor and adjacent fields, generally making her way northeast before getting on a thermal and soaring high and further north out of sight. Later that afternoon, a female was spotted hunting in Section 10 of Township 1 North 3 East. She caught a snake, then flew west into a bare field in Section 9 and ate the snake. After eating and preening, she took off on a thermal to the east and flew out of sight.

Early on the early morning of May 7, a female was again observed eating. She was observed very near where the snake was eaten in Section 9, this time eating a small rodent. After eating and preening, she took off to the south for a half a mile, before getting on a thermal and moving east.

All three of these observations are indicative of a late-season migrating harrier, not breeding activities.

Discussion

No male Northern Harriers were observed in the project area in any of the surveys. During the breeding season, observations of male harriers are more indicative of successful nesting than females because females perform a very high percentage of nest activities (Macwhirter and Bildstein 1996). She does all of the incubation (typically 30-32 days) and broods the young day and night for approximately two weeks after they hatch. The male provides all food to the female during incubation and virtually all food until the nestlings are 10-14 days old. These incubation and brooding periods were concurrent with northern harrier surveys at Northwest Ohio Wind Energy Project. Therefore, harrier observations should have been of males, not females, if successful breeding was occurring in the project area.

The flights patterns and observations of the female harrier are also not likely to be “exercise” flights, being gone from the nest for less than a half hour in the nestling stage. Although she flew out of sight on several occasions, she was in sight longer than the duration of a typical “exercise” flight. Her behavior on these flights was also not consistent with breeding activities (i.e., food carries) (Macwhirter and Bildstein 1996).

Based on the observations of the female harriers and lack of male observations, it is clear harriers are not breeding in the project vicinity. The observed females are likely without a mate, as their behavior and flight patterns are not consistent with breeding season activities. A male would have been easily detected in the open landscape with the amount of hunting needed to feed himself, his mate during incubation, and additionally up to three nestlings after they hatch. The observed females were likely hunting in the area to fulfill their daily requirements. Breeding Bird Survey data show northern harriers on routes both east and west of the project area, indicating suitable breeding habitat for this species in the region¹.

Harriers’ characteristically low flight patterns make them less susceptible to turbine collisions. Based on publically available data from post-construction monitoring across the county, only three northern harrier fatalities at existing wind energy facilities have been reported, despite the fact that they are commonly observed during pre-construction surveys at these projects (Erickson 2001). Two of the fatalities occurred at Altamont Pass, California in the early 1990s and the other at Foote Creek Rim Phase 1 in Carbon County, Wyoming in 1999. Because harriers often

¹The BBS, conducted by the U.S. Geological Survey’s Patuxent Wildlife Research Center, provides a long-term database for monitoring bird populations. Roadside survey routes are covered during June of each year, using methodology similar to our study (each route is 24.5 miles long, with stops at 0.5-mile intervals for auditory and visual counts within a 0.25-mile radius). Harriers have been recorded on the Berne Route approximately 9 miles southwest of the project area (Adams and Allen Counties, Indiana) and Napoleon Route approximately 19 miles northeast of the project area (Putnam and Henry Counties, Ohio).

hunt close to the ground and below the rotor swept zone, risk of collision with turbine blades is considered low for this species. The combination of low northern harrier abundance in northwest Ohio and their typical flight patterns below the rotor-swept zone make the potential for direct impacts to this species low at Northwest Ohio Wind Energy Project.

Literature Cited

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