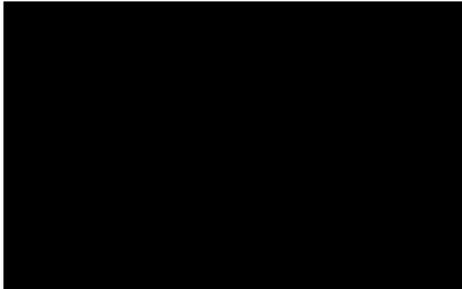


[REDACTED] SURVEY, [REDACTED] SURVEY AND [REDACTED]
[REDACTED] NESTING HABITAT EVALUATION FOR THE KOHLER COMPANY IN
SHEBOYGAN COUNTY WISCONSIN



Prepared by:

Eugene A. Jacobs
[REDACTED] Specialist
[REDACTED] Services, LLC
1601 Brown Deer Lane
Stevens Point, WI 54481

Prepared for:

Tetra Tech, Inc.
Dave Richardson
Senior Fluvial Geomorphologist
630 Riverfront Drive, Suite 100
Sheboygan, WI 53081

May 2012

INTRODUCTION

The Kohler Company has requested surveys to be conducted for three avian species on their property located along Lake Michigan in Sheboygan County, Wisconsin. Tetra Tech Inc. is providing environmental consulting services and has requested [REDACTED] Services, LLC conduct surveys for three species: The [REDACTED] a state Threatened Species, the [REDACTED] and a habitat evaluation for the [REDACTED] a state listed Endangered Species. This report summarizes my findings regarding surveys for these species.

STUDY AREA AND METHODS

The study area is located along western shoreline of Lake Michigan immediately north of the Kohler-Andre State Park and south of the city of Sheboygan in Sheboygan County, Wisconsin (Fig 1).

[REDACTED]
The [REDACTED] is found throughout Wisconsin nesting in mature stands of hardwood and hardwood-conifer forests usually associated with water (Jacobs and Jacobs 2002).

Two survey methods were used: An intensive foot search of all forested areas during the non-nesting season, (after leaf-off) to search for historical [REDACTED] nests. Line transects were used to search forested areas for large stick-nests after the leaves had fallen. This time frame ensured a higher degree of nest detection since visual inspection would be hampered by leafy vegetation obstructing the investigator's view. Spacing of transects were based on the density of vegetation and how far the investigator could visually detect [REDACTED] sized nests. Results from a pilot study revealed that a distance of 164 ft. (50 m) on each side of transect lines was an appropriate distance. Thus, transect lines were spaced 325 ft. (100 m) apart. All stick structures were monitored the following spring to determine occupancy. During the spring of 2012 two rounds of broadcast call surveys were conducted at 12 locations (Fig. 2) during early stages of the nesting cycle (late March). These broadcast surveys are most effective when completed prior to May 1 and are effective in soliciting a response up to 1312 ft (400 m). Survey methods followed those described by Ryan Brady (unpublished, WDNR 2011). These broadcast surveys consisted of broadcasting a series of conspecific calls (volume of 100 db at 3.3 feet, Mosher et al. 1990) followed by periods of silence to listen for responses for a total of 10

minutes at each location during acceptable weather conditions (winds ≤ 12 mph with no precipitation).

██████████
Lake Superior and Lake Michigan shorelines that consist of sand or gravel offer potential nesting habitat for ██████████ (Matteson and Strand 1988). A point count survey was conducted along the Lake Michigan shoreline at 11 locations within the project area (Fig. 2). Point survey locations were monitored for ██████████ for a five minute period and spaced every 450 feet (137 meters). At each point location, the width of the beach was measured from the water's edge to the vegetation line. Beach width has been used to identify potential nesting habitat (Matteson and Strand 1988) and was used in this study quantify the likelihood of ██████████ nesting on the project area.

██████████
The ██████████ prefer to nest on cliffs and rock ledges with water nearby (Palmer 1988) as well as ██████████ (Johnsgard 1990). In Wisconsin, ██████████ have been reported nesting in various areas throughout the state including along Lake Michigan (Septon 2009, unpublished report). This evaluation included walking the entire project area and visually searching for any structure (e.g., rock cliffs, ██████████) that would support a ██████████ nest.

RESULTS AND DISCUSSION

██████████
No ██████████ or historical nest sites were detected during the fall nest searches or during the spring broadcast call surveys. On 31 October 2011 an intensive search for historical nests of ██████████ was conducted throughout the entire project area and produced two stick nest structures (Fig. 2). Subsequent visits on 20 and 31 of March 2012 proved these nests to be inactive and nest characteristics suggested these nests were more likely historical Crow (*Corvus brachyrhynchos*) nests.

A broadcast call survey was conducted on 20 March 2012 and a second round at the same locations (Fig. 2) on 31 March of 2012. ██████████ were not detected during the broadcast call surveys.

Even though the western half of the property consists of potential nesting habitat (i.e. mature forest with wetlands along the Black River), no evidence of ██████████ nesting

activities past or present were detected.

No [REDACTED] were detected during the point count survey conducted on 17 June 2011. Our average beach measurement of 38 feet (11.6 meters) was much narrower than the 174 feet (53 meters) Matteson and Strand (1988) found at active nest sites in Wisconsin. These results suggest the shoreline habitat is not likely nesting habitat for [REDACTED]

An on-site [REDACTED] nesting habitat evaluation was performed on 17 June 2011, with the interior portion of the project area being completed on 31 October 2011. No nesting habitat (i.e. cliffs, rock ledges, or [REDACTED]) were detected. This area does not appear to offer any suitable nesting structures for [REDACTED]

CONCLUSIONS

I found no evidence of past or present nesting of [REDACTED] on or near the project area at this time.

Other [REDACTED]

Three other species of [REDACTED] were detected on the project area. A Great Horned Owl (*Bubo virginianus*) and a Barred Owl (*Strix varia*) were observed during the fall historical nest search on 31 October 2011. A Barred Owl was also observed during the spring survey on 20 March 2012 (Fig. 2). Three [REDACTED] were observed flying over the State of Wisconsin property (Fig.2) during the first round of the broadcast call survey on 20 March 2012, but were not seen during the second round of surveys (31 March 2012). These [REDACTED] were flying high and drifted off to the northwest, out of sight. This behavior is more consistent with migrating birds and may have been [REDACTED] that were moving through the area. According to Wisconsin State records the nearest known [REDACTED] nest is located approximately 1.25 miles north of the project area (pers. comm. S. Easterly, WDNR).

LITERATURE CITED

Brady, R., 2011. [REDACTED] Survey Instructions Booklet 2011. Wisconsin DNR Unpublished Report.

Jacobs, J.P., and E.A. Jacobs. 2002. Conservation assessment for [REDACTED] national forests of north central states. USDA, Forest Service, Eastern Region.

[REDACTED]
Johnsgard, P. A., 1990. [REDACTED] of North America. Smithsonian Institution Press. 303pp.

Matteson, S.W., and F.C. Strand. 1988. [REDACTED]
[REDACTED]

Mosher, J. A., M.R. Fuller, and M. R. Kopeny. 1990. [REDACTED]
[REDACTED]

Palmer, R. S., 1988. Handbook of North American Birds. Yale University, New Haven and London. Vol. 4. 417pp.

Septon, G., 2009. Wisconsin [REDACTED] 2009 Nesting Season Report. Unpublished Report.

One figure page was redacted since it contained information on species tracked by Wisconsin's Natural Heritage Inventory (NHI) program. This information is considered sensitive and is not subject to Wisconsin's Open Records Law (per s. 23.27, Wis. Stats.)