

Bald Eagle Stick Nest Survey Report

***Merriam Junction Sands Project
Scott County, Minnesota***

***Prepared for
Hunt Global Resources, Inc.***

March 2012



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Table of Contents

1.0 Introduction.....	1
1.1 Study Area Description.....	1
1.3 Background Information.....	1
2.0 Field Survey Methods.....	3
3.0 Field Survey Results.....	4
3.1 Stick Nest Observations.....	4
3.1.1 Active Bald Eagle Nests.....	5
3.1.2 Other Stick Nests.....	5
3.2 Bald Eagle Observations.....	6
4.0 References.....	7

List of Tables

Table 1	Summary of Stick Nests Observed On or Near the Project Site
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List of Figures

Figure 1	Site Location Map
Figure 2	Stick Nest Survey Results

List of Appendices

Appendix A	Stick Nest Survey Photographs
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1.0 Introduction

Hunt Global Resources, Inc. (Hunt Global) is proposing to develop a silica sand mining and processing operation (referred to as the Merriam Junction Sands Project) in the Minnesota River valley in Louisville Township, Scott County Minnesota. As shown on Figure 1, the project site is located adjacent to the Louisville Swamp Unit of the National Wildlife Refuge (NWR) and the Minnesota Valley State Recreation Area (SRA). Because there are known records of nesting bald eagles (*Haliaeetus leucocephalus*) in this area, the United States Fish and Wildlife Service (USFWS) recommended that nest surveys be conducted to assess the potential for active bald eagle nests within or near the proposed project site. Hunt Global retained Barr Engineering Company (Barr) to complete a stick nest survey for eagles and other raptors based on the National Bald Eagle Management (NBEM) Guidelines.

1.1 Study Area Description

The project site generally parallels the floodplain of the Minnesota River and the northern portion is adjacent to Gifford Lake. Most of the site has been impacted by previous mining activities, horse training facilities, and festival grounds. To the west and south of the site are the undeveloped public lands of the NWR and SRA. North and east of the site, the land is developed with industrial facilities, active gravel pits, and residential properties.

The study area for the nest survey consisted primarily of the project site and a 0.5-mile-wide area to the north, west, and south of the site boundaries (Figure 2). This study area was defined based on the NBEM Guidelines, which recommend limitations for certain activities (e.g., blasting) within 0.5 mile of an active bald eagle nest. Because the area to the east is developed and further from the river, it is less likely to provide suitable habitat for nesting bald eagles. Therefore, survey activities in this area were limited to observations from public roads and highways.

1.3 Background Information

Prior to conducting the nest survey, the Minnesota Department of Natural Resources (MDNR) Natural Heritage Inventory System (NHIS) database was searched for known records of bald eagle nests within 1 mile of the project site. This search indicated that there are two recorded bald eagle nests within 1 mile of the site, one nest located about 0.7 mile west of the site and another nest located about 0.9 mile southwest of the site.

In the summer of 2011, wildlife, vegetation, and protected species surveys were conducted on the project site (Barr 2012a). The wildlife surveys focused on general wildlife presence and assessment of habitat for certain species. During field investigations in August 2011, one adult and three fledged juvenile bald eagles were observed within the floodplain forest along the eastern edge of Gifford Lake. These birds were observed within a large tree located directly over the lakeshore; however, no nests were observed in the vicinity of these birds. Additional raptors were observed on the site, including red-tailed hawks (*Buteo jamaicensis*) and sharp-shinned hawks (*Accipiter striatus*); however, no nests were found on the project site for these species during the 2011 survey.

2.0 Field Survey Methods

Survey methods are described in the *Stick Nest Survey Plan* (Barr 2012b), which was provided to the USFWS in February 2012. In an email dated February 29, 2012, Andrew Horton of the USFWS provided comments on this work plan, including providing clarification on the definition of active nests and recommending noting of disturbance-related activities near any identified nests (USFWS 2012b). Vehicular and pedestrian surveys were completed on March 14 to 16 and March 23, 2012 by Barr biologists with experience surveying for and monitoring bald eagles. A permit was granted by the USFWS to allow access to the NWR for the surveys. As discussed previously, the area east of Highway 169 was surveyed where accessible from public roads.

Canopy trees within the study area were visually inspected for the presence of large stick nests. Most of the identified stick nests were photographed and marked with GPS. A few of the nest locations outside of the study area were estimated based on nearby positions and directional information. Biologists remained more than 330 feet from active bald eagle nests, so location information is approximate.

3.0 Field Survey Results

In general, bald eagle habitat on the project site is poor quality because most of the remaining trees are secondary growth and would not likely be selected by eagles for nesting. The most suitable habitat for bald eagle nesting occurs west and south of the project site near the Minnesota River, Gifford Lake, and Louisville Swamp. Forested areas near these waterbodies have stands of large silver maple (*Acer saccharinum*) and eastern cottonwood (*Populus deltoides*) trees.

3.1 Stick Nest Observations

Six stick nests were observed during the field investigations, three are active bald eagle nests and the other three stick nests are smaller non-eagle raptor nests that were inactive during field investigations (Figure 2). Two of the active bald eagle nests were observed outside the study area, greater than 2,640 feet (0.5 mile) from the project site, and the third active nest is located about 1,423 feet (0.3 mile) from the project site, but over 2,640 feet (0.5 mile) from any proposed blasting activity on the project site. A summary of each identified nest on or near the project site is provided in Table 1. Photographs of the nests are provided in Appendix A.

Table 1. Summary of stick nests observed on or near the Merriam Junction Sands Mine

Nest ID	Distance from Project Boundaries		Species	Nesting Activity	Nest Size (Diameter x Depth) and Construction	Existing Activities Nearby
	Feet	Miles				
1	1,423	0.3	Bald Eagle	Active	6 feet x 4 feet Medium branches to small sticks	Snowmobile/horse/hiking/bike trail; Hunting and other river/non-river recreational activities
2	On Site		Unknown raptor or large bird	Inactive	2 feet x 1 feet Small sticks	On-going mining activities; Horse/hiking trail; Hunting and other recreational activities
3	1,430	0.3	Unknown raptor or large bird	Inactive	2 feet x 2 feet Small sticks	Snowmobile trail; Farm activities
4	3,069	0.6	Bald Eagle	Active	8 feet x 6 feet Medium branches to small sticks	Minimal; Hunting, horseback riding, hiking, and other recreational activities
5*	3,521	0.7	Bald Eagle	Active	6 feet x 4 feet Medium branches to small sticks	Snowmobile/horse/hiking/bike trail; Hunting and other river/non-river recreational activities
6	1,868	0.4	Unknown raptor or large bird	Inactive	2 feet x 2 feet Small sticks	Minimal; Hunting, horseback riding, hiking, and other recreational activities

*Nest 5 is near the bald eagle nest previously documented in the Minnesota Natural Heritage Information System (NHIS) database.

3.1.1 Active Bald Eagle Nests

One previously unrecorded, active bald eagle nest (Nest 1) was found within the study area. One adult bald eagle was observed in the nest, with another perched in an adjacent tree and two juveniles in perches nearby. Nest 1 is located about 50 feet high in a large cottonwood tree on the NWR approximately 1,423 feet (0.3 mile) northwest of the property boundary, along the western bank of the Minnesota River. Across the river from the nest is a state trail used for snowmobiling, horseback riding, hiking, and hunting.

Nest 4 is located approximately 3,069 feet (0.6 mile) south of the property boundary on the NWR and was occupied by one adult bald eagle during the field visit. The nest was observed from the north side of Louisville Swamp and the tree species could not be determined from this distance (although it is likely a cottonwood). This nest is located within the Louisville Swamp on what appears to be an island during high waters (see Figure 2).

Nest 5 was observed approximately 3,521 feet (0.7 mile) west of the property boundary. This nest is also on NWR property and was occupied by one eagle at the time of the survey. This may be the same nest documented in the NHIS database. This nest was observed from within the study area using binoculars, so no photograph could be taken and the location is estimated. This nest is located next to a state trail with snowmobiling, biking, horseback riding, hiking, and hunting.

3.1.2 Other Stick Nests

Three stick nests were observed in the study area that are constructed of sticks but are likely used by other raptors or large birds. The locations of these nests are shown on Figure 2. These nests are likely used by red-tailed hawks or crows (*Corvus brachyrhynchos*). The nests are much smaller than eagle nests and are not immediately adjacent to water. There was no activity in any of these nests at the time of the survey. These nests include the following:

- Nest 2 is located on the project site in a cottonwood tree about 30 feet off the ground. The tree is on the eastern shore of Gifford Lake. The nest is about 2 feet in diameter and 1 foot deep.
- Nest 3 is located about 1,430 feet east of the property boundary and was observed from Highway 169 using binoculars. Due to the distance from the road, no photograph was taken. The nest is in an unidentified tree about 30 feet off the ground and just below a ridge line in a wooded area. The nest is about 2 feet in diameter by 2 feet deep.

- Nest 6 is located about 1,868 feet (0.4 mile) west of the property boundary in the floodplain along Sand Creek. The nest is about 60 feet high near the canopy of a silver maple tree. The nest is about 2 feet in diameter by 2 feet deep.

3.2 Bald Eagle Observations

During the site visits, biologists observed many adult and juvenile bald eagles throughout the study area. During March 14 and 16 about 100 to 200 eagles were observed perched on the frozen portions of Gifford Lake and in surrounding trees, and flying in the immediate vicinity of the lake (see photographs in Appendix A). According to anecdotal information from the property owner, the ice on the lake had just thawed to create some open water for the eagles, one of the first lakes in the area to thaw. The number of eagles drastically dropped throughout the survey period as ice went off other nearby lakes, with only one juvenile bald eagle observed near Gifford Lake on the last day of the survey (March 23).

4.0 References

Barr Engineering Company, 2012. *Vegetation, Wildlife, and Protected Species Report*. Prepared for Merriam Junction Sands Mine. January 2012a.

Barr Engineering Company, 2012b. *Stick Nest Survey Plan; Merriam Junction Sands Project, Scott County, Minnesota*. Prepared for Hunt Global Resources. February 2012.

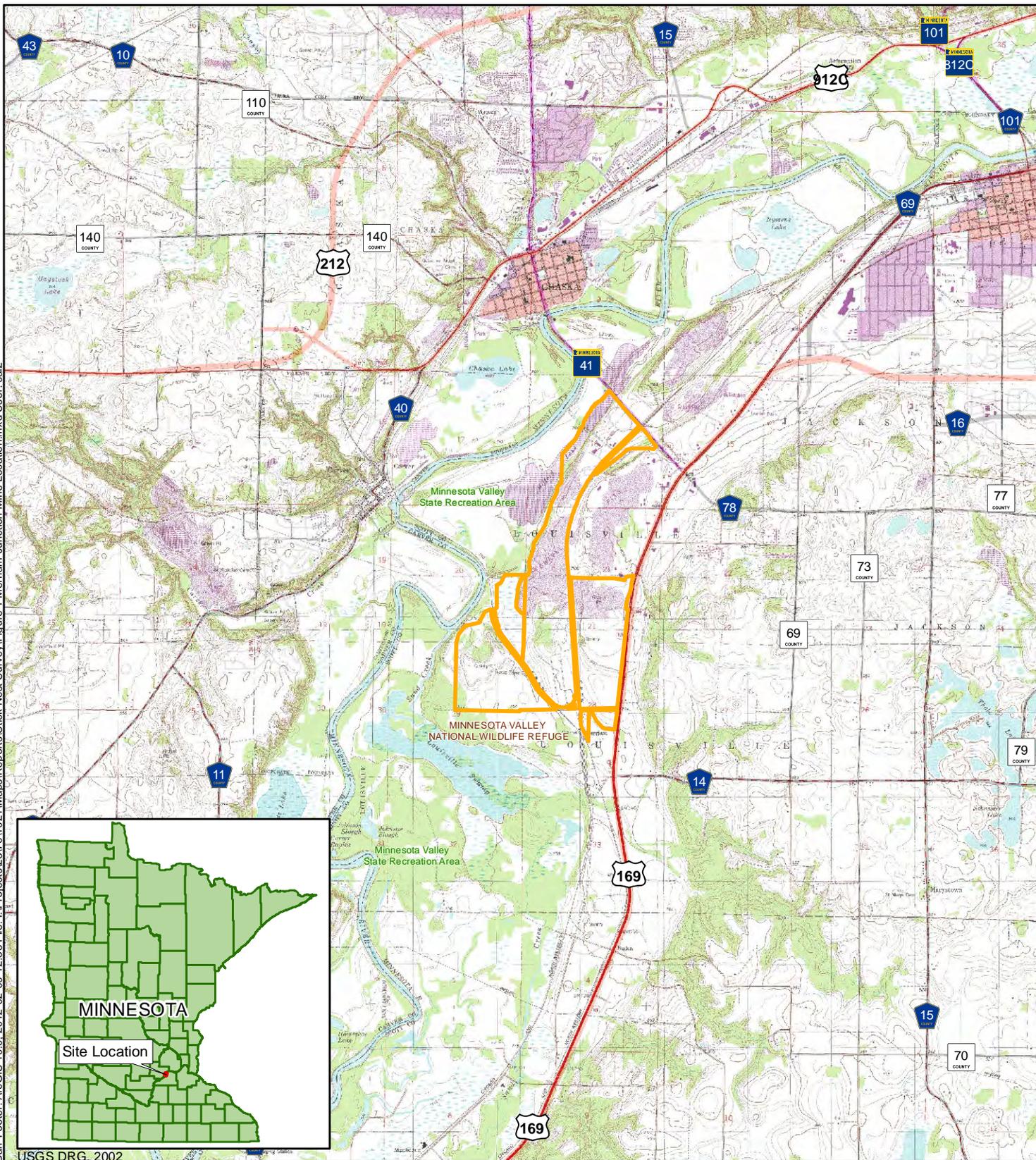
U.S. Fish and Wildlife Service, 2012a. *Identification Guide to Large Nests*. Provided by Margaret Rheude, January 19, 2012.

U.S. Fish and Wildlife Service, 2012b. *Re: FW: Merriam Junction sand mine nest survey plan*. Email from Andrew Horton (USFWS) to Daniel Tix (Barr). February 29, 2012.

U.S. Fish and Wildlife Service. *National Bald Eagle Management Guidelines*. May 2007. Available at URL: <http://www.fws.gov/midwest/eagle/guidelines/index.html>.

Figures

Barr Footer: ArcGIS 10.0, 2012-02-09 12:38 File: I:\Projects\237011021\Maps\Reports\Slick Nest Survey\Figure 1 Merriam Junction Mine Location.mxd User: salz



1 inch = 5,280 feet



Miles

0.5 0.25 0 0.5 1 1.5



Kilometers

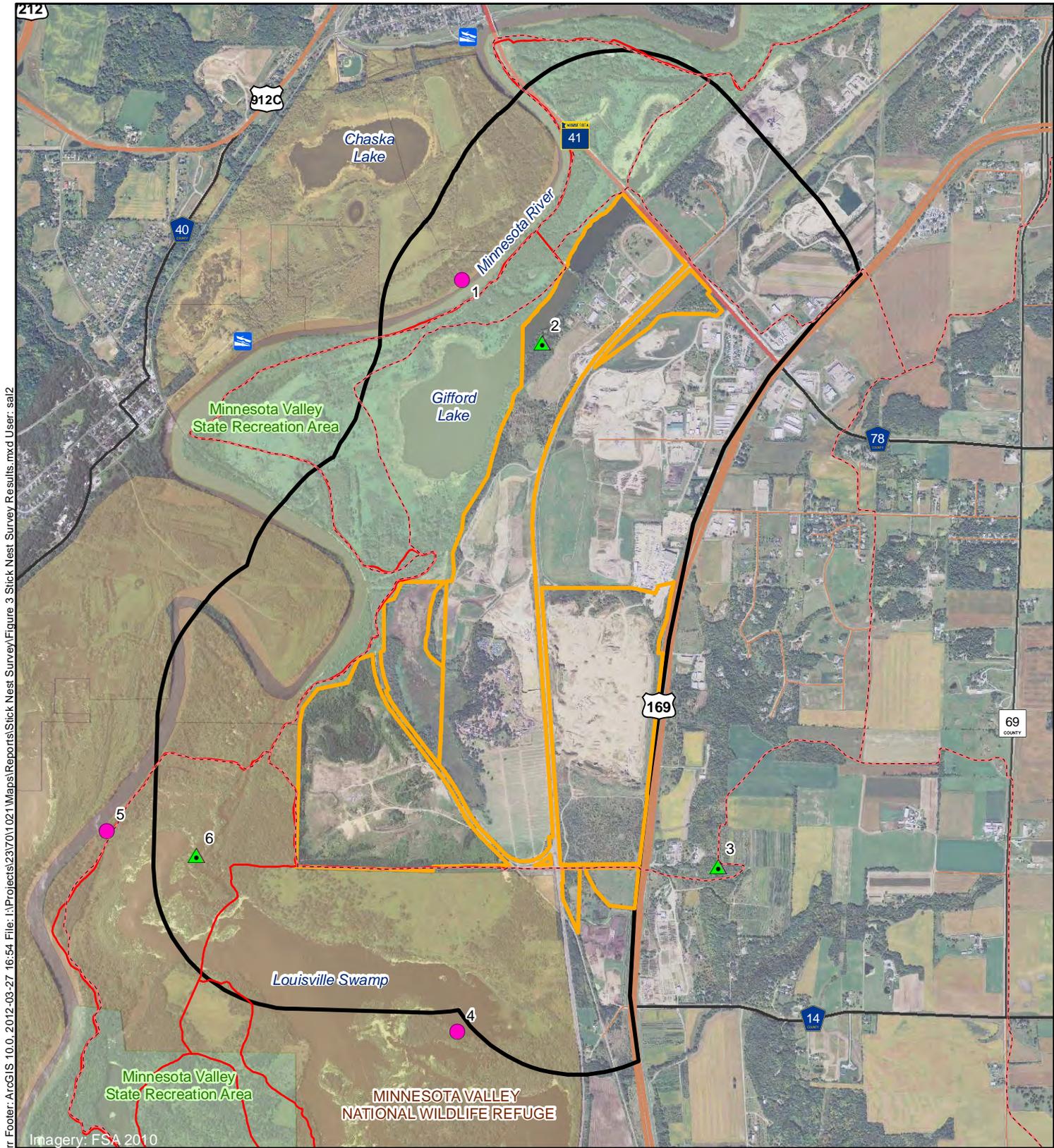
1 0.5 0 1 2



Figure 1

 Property Boundary

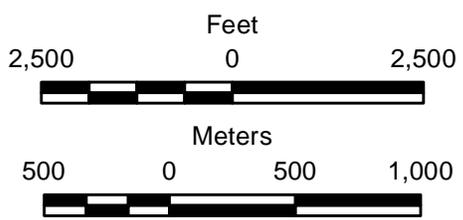
SITE LOCATION
Merriam Junction Sands
Hunt Global Resources, Inc.
Scott County, MN



Barr Footer: ArcGIS 10.0, 2012-03-27, 16:54 File: I:\Projects\23701\021\Maps\Reports\Stick Nest Survey\Figure 3 Stick Nest Survey Results.mxd User: sal2

- Eagle Stick Nest
- ▲ Unidentified stick nest
- Property Boundary
- Stick Nest Survey Extent
- MN State Park
- USFWS National Wildlife Refuge

- Snowmobile Trail
- State Park Trail
- Boat Launch



1 inch = 2,500 feet



Figure 2

**STICK NEST
SURVEY RESULTS**
Merriam Junction Sands
Hunt Global Resources, Inc.
Scott County, MN

Appendix A

Stick Nest Survey Photographs



Nest 1, active bald eagle nest documented 3-16-12 (nest and eagles circled in red)



Nest 1, active bald eagle nest documented 3-16-12



Nest 4, active bald eagle nest documented 3-16-12



Nest 4, active bald eagle nest documented 3-16-12



Nest 2, inactive nest of unidentified bird documented 3-14-12



Nest 6, inactive nest of unidentified bird documented 3-23-12



Bald Eagle Activity at Gifford Lake, documented 3-14-12 (individual eagles circled in red)



Bald Eagle Activity at Gifford Lake, documented 3-15-12 (individual eagles circled in red)