BIOREGIONAL MONITORING FIELD SURVEYS FOR NORTHERN GOSHAWKS IN THE WESTERN GREAT LAKES

Project Start Date: February 1, 2008 **Project End Date:** March 31, 2009

Project Description
This work plan covers the cooperative effort to monitor Northern Goshawks (*Accipiter gentilis*) across selected ecological landscapes in Wisconsin, Michigan, and Minnesota during the 2008 nesting season. We will use a peer-reviewed and pilot study-tested design and survey protocol for the field surveys. Our goal is to produce an estimate of goshawk presence within the study area.

Project Need
Goshawks have attracted substantial interest over the last two decades because management activities like timber harvesting and corridor construction for roads and utilities have the potential to negatively affect nesting habitat and ultimately population levels of this species. Goshawks generally nest in mature forests types in the Great Lakes region, building large stick nests that are used by the territorial pair for many years. A variety of forest types and structural stages are used as foraging habitat, but the role of mature forests as long-term nesting sites has placed considerable attention on the goshawk. This project will provide data needed to assess if concerns about forest management and fragmentation are warranted in the western Great Lakes.

In the western Great Lakes, goshawks are designated as a species of special concern in Wisconsin and Michigan, and are presently up for listing in Minnesota. Also, they are listed as sensitive species in all six National Forests in the region. Although the goshawk has special status throughout the area, little baseline information exists (e.g., population abundance, trends, habitat availability) that would allow a defensible status assessment to be completed. To assess a goshawk population trend, species experts recommended a monitoring approach that (1) addresses a defined target population, (2) has an appropriate response variable, (3) includes a probability of detection, and (4) has an adequate sample size to detect change. This project meets all four criteria and will use a peer-reviewed protocol. Additionally, because this is a regional project with many partners, our efforts will be leveraging resources and funding provided by at least 10 different organizations from across the region.

Project Objectives
- Coordinate field surveys using the bioregional monitoring protocol for goshawks within 100 sampling units selected across the study area.
- Analyze data collected from field surveys, write project report, and develop manuscript for publication.

Deliverables
1. Presence/absence results of field surveys by selected cell - provided to partners by August 31, 2008.
2. Final project report – provided by March 31, 2009.
3. Communication of project activities and other pertinent information through a project web site - web site operating by May 1, 2008.

Sampling Scheme
The 100 Primary Sampling Units (PSUs) selected for surveying are distributed as follows: Michigan—26, Minnesota—47, Wisconsin—27. The number of PSUs that are located on National Forest lands is provided in Table 1 for each state. The distribution of the 100 PSUs throughout the western Great Lakes bioregion is provided in Figure 1. For Michigan, the distribution of PSUs is provided in Figures 2 and 3.

The distribution of PSUs for Minnesota is depicted in Figure 4. For Wisconsin, the distribution of PSUs is shown in Figure 5.

State	National Forest PSUs	Non-National Forest PSUs	Total Number of PSUs
Michigan	14	12	26
Minnesota	18	29	47
Wisconsin	7	20	27

Table 1. The allocation of Primary Sampling Units (PSUs) between National Forest and non-National Forest lands for Michigan, Minnesota, and Wisconsin.

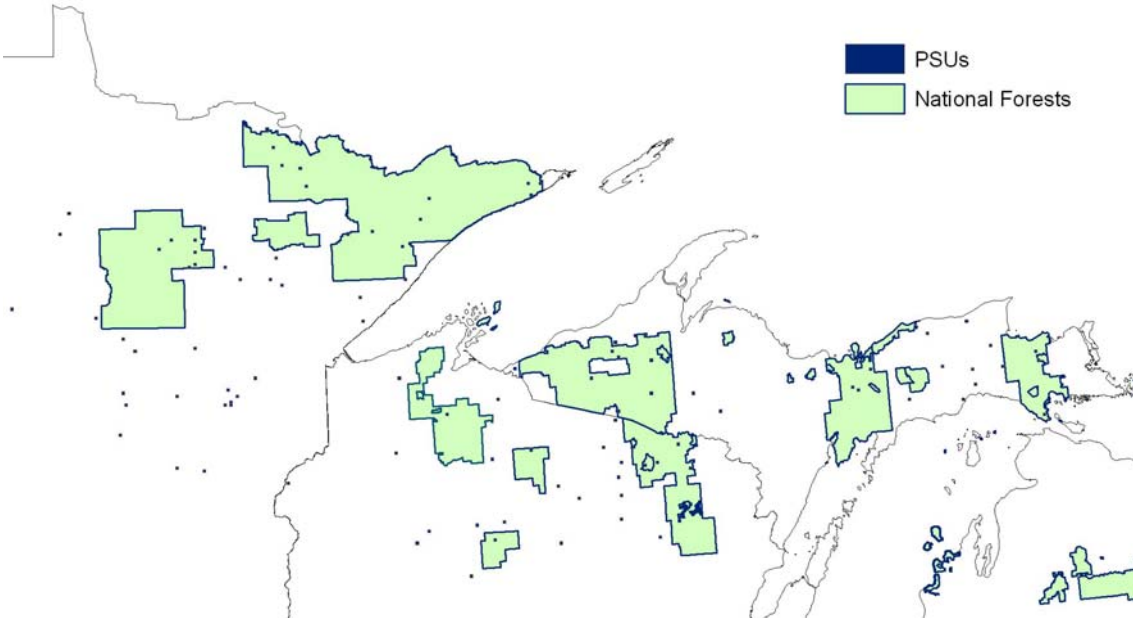

Figure 1. The distribution of the 100 Primary Sampling Units (PSUs) to be sampled in the western Great Lakes bioregion.

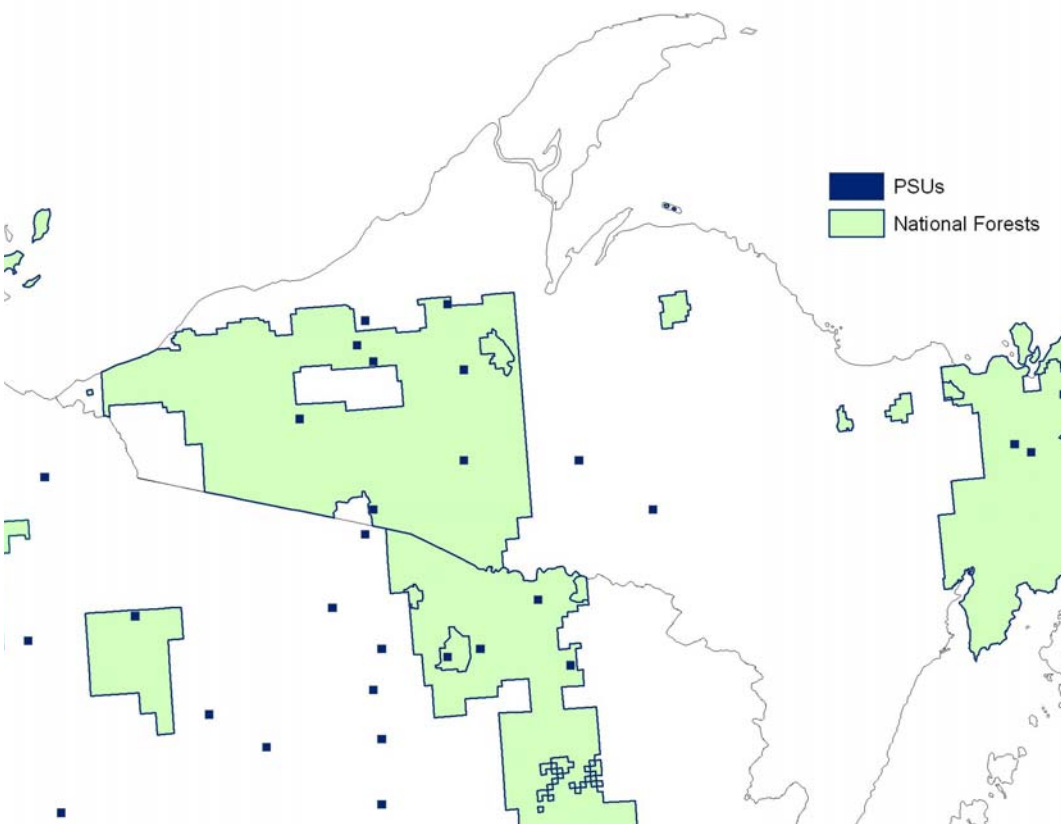

Figure 2. The distribution of Primary Sampling Units (PSUs) to be sampled for Michigan in the Ottawa National Forest region.

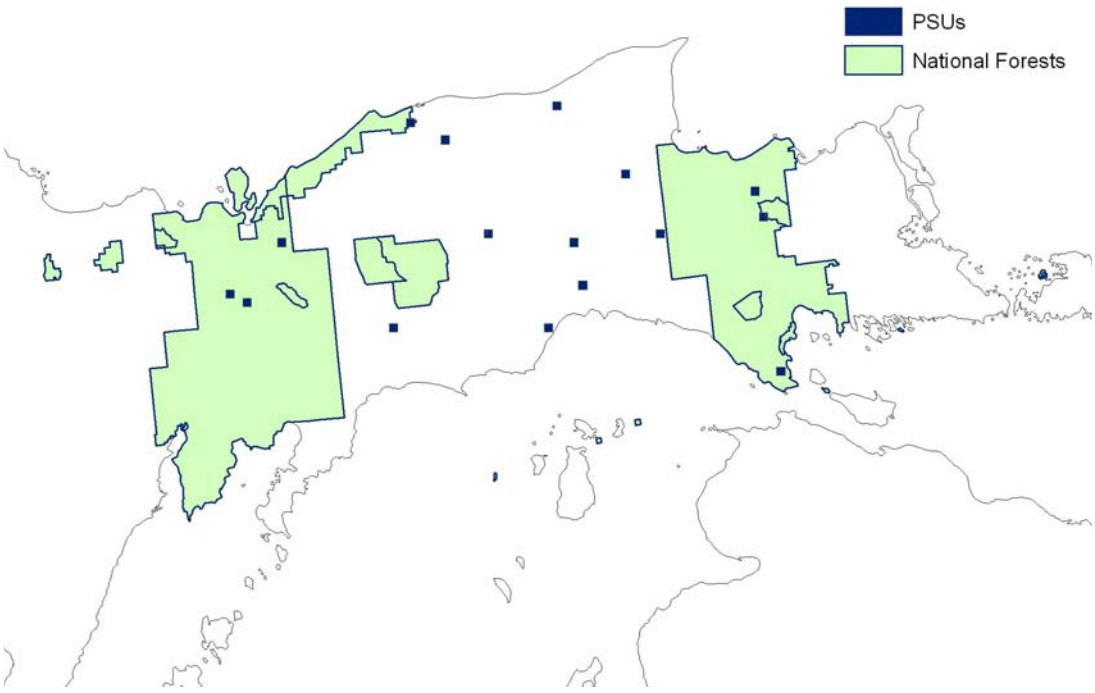

Figure 3. The distribution of Primary Sampling Units (PSUs) to be sampled for Michigan in the Hiawatha National Forest region.

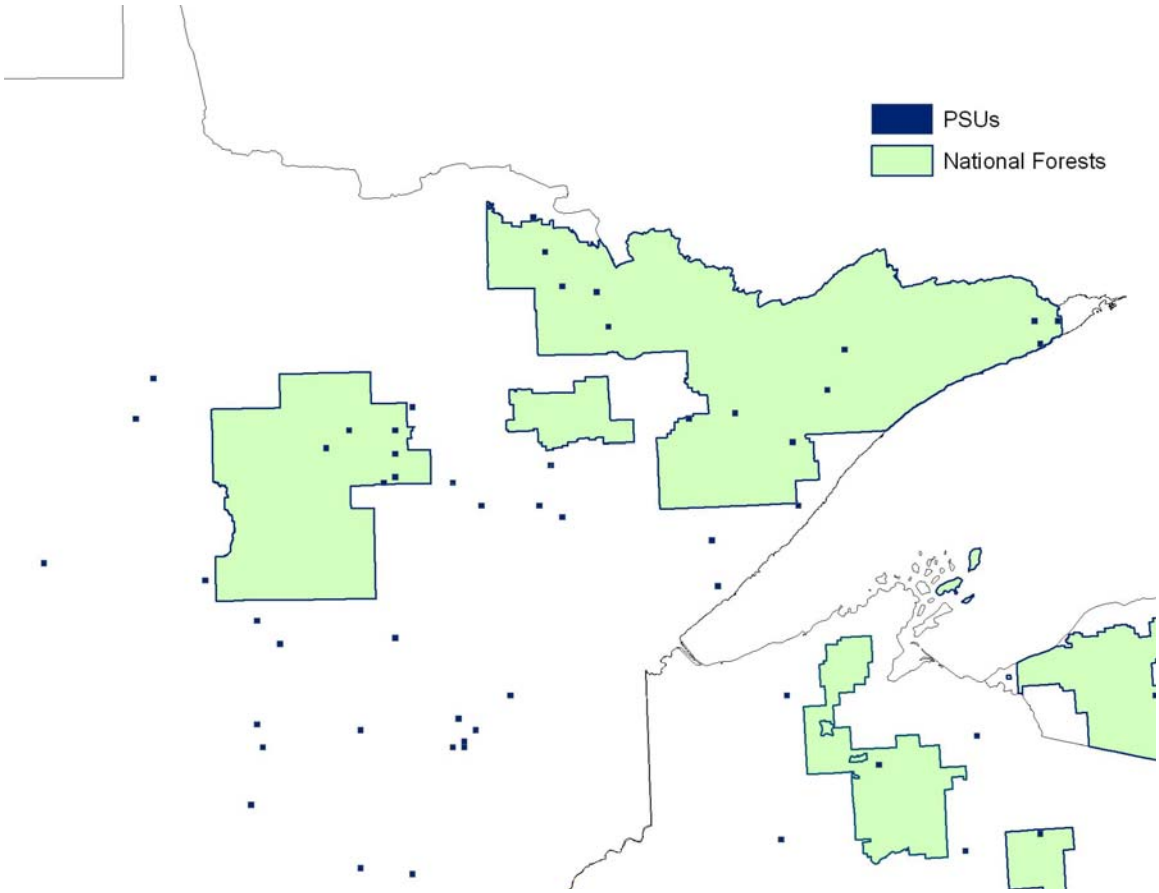

Figure 4. The distribution of Primary Sampling Units (PSUs) to be sampled for Minnesota.

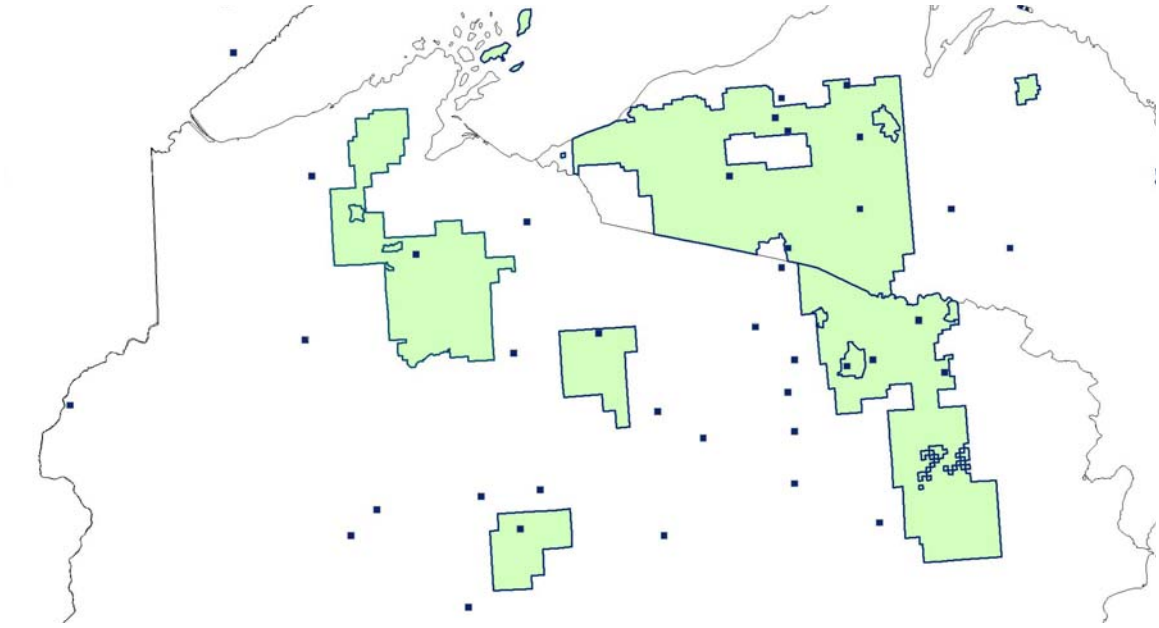
Figure 5. The distribution of Primary Sampling Units (PSUs) to be sampled for Wisconsin.