

## **2011 Project Abstract**

For the Period Ending June 30, 2014

**PROJECT TITLE: Golden Eagle Survey Project**

**PROJECT MANAGER: Scott Mehus**

**AFFILIATION: National Eagle Center**

**MAILING ADDRESS: 50 Pembroke Ave**

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**FUNDING SOURCE: Environment and Natural Resources Trust Fund**

**LEGAL CITATION: M.L. 2011, First Special Session, Chp. 2, Art.3, Sec. 2, Subd. 03e**

**APPROPRIATION AMOUNT: \$60,000**

### **Overall Project Outcome and Results**

The Golden Eagle Survey Project represents groundbreaking research on a bird that was previously not thought to be a regular inhabitant of Minnesota. Through field observations and telemetry, the Golden Eagle Survey Project is expanding the understanding of population, distribution, habitats, habitat use, migration routes, breeding areas, and management needs of the population of golden eagles that winter in Minnesota.

Annual surveys coordinated by the Golden Eagle Survey Project have documented a regular migratory population using the bluffland subsection of the Paleozoic Plateau in southeast Minnesota in winter. During annual winter surveys in 2012-2014, an average of 36 golden eagles have been observed in Minnesota's blufflands.

Using satellite telemetry to track golden eagles, the Project is expanding the world's knowledge of the range, location of breeding territories, and migration routes of this previously unstudied population. One golden eagle, #46, was released in January 2011 with a GPS satellite-linked transmitter. The Project tracked #46 for more than 950 days, from his release in Wabasha County and his migrations to Nunavut, Canada and back to wintering range in southeast Minnesota. Data collected on golden eagle habitat use, preferred prey, and range will be used to ensure appropriate management and conservation action to protect critical wintering habitat for golden eagles in Minnesota.

Thousands of people have learned about the presence of golden eagles in Minnesota through the Golden Eagle Survey Project's outreach to landowners, wildlife managers and the general public. In programs at the National Eagle Center and throughout the state, the Golden Eagle Project increased awareness and understanding of golden eagles as regular winter inhabitants of the blufflands region. The Project's outreach to conservation professionals and the general public continues to broaden awareness of this unique species in Minnesota.

### **Project Results Use and Dissemination**

Golden Eagle Survey Project data are publicly available on the National Eagle Center's website. Since January, 2012, the National Eagle Center's website has seen nearly 30,000 unique visits to the Golden Eagle Survey Project information pages. Here visitors learn about the presence of golden eagles in Minnesota, view data and project maps, and learn how they can get involved in efforts to understand

and conserve golden eagles in Minnesota. In addition, updates on golden eagle tracking are posted on social media outlets, reaching an audience of more than 10,000 followers.

Detailed data from field observations, Annual Wintering Golden Eagle Surveys, and telemetry are made available to researchers and others upon request. Thus far, we have shared this data with at least one utility seeking information on golden eagle migration and habitat use in siting transmission lines.

The Golden Eagle Survey Project has been regularly featured in regional news media throughout the Project's duration. An attached list highlights some of the regional news stories about the Golden Eagle Survey Project. Links to the story are provided where available. In 2013, the Golden Eagle Project shared in the US Forest Service's Wings Across America award for work as part of the Eastern Golden Eagle Working Group. In January 2014, Minnesota DNR's monthly magazine *Conservation Volunteer* featured a cover story about the Golden Eagle Survey Project's work and golden eagles in Minnesota.



# Environment and Natural Resources Trust Fund (ENRTF) M.L. 2011 Work Plan Final Report

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**Date of Status Update:** 6/26/2014  
**Date of Next Status Update:** Final Report  
**Date of Work Plan Approval:** 6/23/2011  
**Project Completion Date:** 6/30/2014 **Is this an amendment request?** No

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**Project Title:** Golden Eagle Survey

**Project Manager:** Scott Mehus

**Affiliation:** National Eagle Center

**Address:** 50 Pembroke Ave

**City:** Wabasha **State:** MN **Zipcode:** 55981

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**Location:**

**Counties Impacted:** Goodhue, Houston, Olmsted, Wabasha, Winona, Fillmore

**Ecological Section Impacted:** Paleozoic Plateau (222L)

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<b>Total ENRTF Project Budget:</b>	<b>ENRTF Appropriation \$:</b>	60,000
	<b>Amount Spent \$:</b>	<u>54,020.60</u>
	<b>Balance \$:</b>	5,979.40

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**Legal Citation:** M.L. 2011, First Special Session, Chp. 2, Art.3, Sec. 2, Subd. 03e

**Appropriation Language:**

\$30,000 the first year and \$30,000 the second year are from the trust fund to the commissioner of natural resources for an agreement with the National Eagle Center to increase the understanding of golden eagles in Minnesota through surveys and education. This appropriation is available until June 30, 2014, by which time the project must be completed and final products delivered.

## **I. PROJECT TITLE: Golden Eagle Survey Project**

### **II. FINAL PROJECT STATEMENT:**

The Golden Eagle Survey Project represents groundbreaking research on a bird that was previously not thought to be a regular inhabitant of Minnesota. Through field observations and telemetry, the Golden Eagle Survey Project is expanding the understanding of population, distribution, habitats, habitat use, migration routes, breeding areas, and management needs of the population of golden eagles that winter in Minnesota.

Annual surveys coordinated by the Golden Eagle Survey Project have documented a regular migratory population using the bluffland subsection of the Paleozoic Plateau in southeast Minnesota in winter. During annual winter surveys in 2012-2014, an average of 36 golden eagles have been observed in Minnesota's blufflands.

Using satellite telemetry to track golden eagles, the Project is expanding the world's knowledge of the range, location of breeding territories, and migration routes of this previously unstudied population. One golden eagle, #46, was released in January 2011 with a GPS satellite-linked transmitter. The Project tracked #46 for more than 950 days, from his release in Wabasha County and his migrations to Nunavut, Canada and back to wintering range in southeast Minnesota. Data collected on golden eagle habitat use, preferred prey, and range will be used to ensure appropriate management and conservation action to protect critical wintering habitat for golden eagles in Minnesota.

Thousands of people have learned about the presence of golden eagles in Minnesota through the Golden Eagle Survey Project's outreach to landowners, wildlife managers and the general public. In programs at the National Eagle Center and throughout the state, the Golden Eagle Project increased awareness and understanding of golden eagles as regular winter inhabitants of the blufflands region. The Project's outreach to conservation professionals and the general public continues to broaden awareness of this unique species in Minnesota.

#### **Project Results Use and Dissemination**

Golden Eagle Survey Project data are publicly available on the National Eagle Center's website. Since January, 2012, the National Eagle Center's website has seen nearly 30,000 unique visits to the Golden Eagle Survey Project information pages. Here visitors learn about the presence of golden eagles in Minnesota, view data and project maps, and learn how they can get involved in efforts to understand and conserve golden eagles in Minnesota. In addition, updates on golden eagle tracking are posted on social media outlets, reaching an audience of more than 10,000 followers.

Detailed data from field observations, Annual Wintering Golden Eagle Surveys, and telemetry are made available to researchers and others upon request. Thus far, we have shared this data with at least one utility seeking information on golden eagle migration and habitat use in siting transmission lines.

The Golden Eagle Survey Project has been regularly featured in regional news media throughout the Project's duration. An attached list highlights some of the regional news stories about the Golden Eagle Survey Project. Links to the story are provided where available. In 2013, the Golden Eagle Project shared in the US Forest Service's Wings Across America award for work as part of the Eastern Golden Eagle Working Group. In January 2014, Minnesota DNR's monthly magazine *Conservation Volunteer* featured a cover story about the Golden Eagle Survey Project's work and golden eagles in Minnesota.

### **III. PROJECT STATUS UPDATES:**

**Project Summary as of 10/03/2011:  
Amendment Approved (10/20/2011):**

The Golden Eagle Survey Project requests a change in budget and work plan to reflect changes in partner organizations' ability to contribute in-kind to the Project. The Project will not be receiving contribution of labor from Minnesota Conservation Corp, which had been anticipated as a significant part of our trapping labor. As a consequence, we have also reduced the Equipment budget, as we will have decreased ability to utilize certain trap styles. Another partner, Audubon Minnesota reduced their in-kind donation in the form of data handling, and the amended budget reflects a contract with Audubon Minnesota for that service. A further amendment is reflected in the Contracts budget. What was initially anticipated in the form of a service contract for trapping labor, will be filled by a National Eagle Center staff member, and is now reflected in the Personnel budget item.

### **Project Status as of January 2012:**

Golden eagle habitat areas in Wabasha, Goodhue and Houston counties were explored for inclusion in the Annual Survey. The 8<sup>th</sup> Annual Wintering Golden Eagle Survey involved more than 100 volunteer observers and recorded the presence of at least 30 golden eagles in southeast Minnesota. The Project continues to collect GPS data from golden eagle #46 who is currently wintering in southeast Minnesota. Golden eagle seminars held at the National Eagle Center and conducted by Project Manager Scott Mehus have involved 143 people since November, 2011. Another golden eagle seminar is planned for February, 2012. The Golden Eagle Survey Project continues to make information and data about golden eagles in Minnesota available via the website and regional media outlets.

### **Amendment Approved (6/1/2012)**

The Golden Eagle Project is requesting an amendment to the budget to reflect a change in needs. We were unable to continue to use the eagle traps from previous years and unexpectedly needed to purchase two bow nets in order to carry out trapping activities this winter. Additionally, our prey animal expenses and field data collection device needs were lower than anticipated. We would like to shift retroactively budgeted monies in the Equipment and Supplies area from these items to a new budget line, Eagle Traps.

### **Project Status as of June 2012:**

The Project continues to educate about golden eagles in Minnesota through public programs at the National Eagle Center, as well as track golden eagles using satellite telemetry. The project is currently tracking two golden eagles, including, #45, which was released in February, 2012. Field observations of golden eagles in southeast Minnesota continued, including a sighting of #46 in Winona County in March, 2012 just prior to his departure on spring migration.

### **Amendment Approved (1/14/2013):**

The Project is seeking changes in two budget items to reflect staffing changes at the National Eagle Center (NEC) and to enlist the services of a trapping professional. The Golden Eagle Survey is requesting a transfer of funds from the Personnel budget item to a Service contract item in Activity 2: Trapping and Tracking.

We are seeking to reduce funds for staff trapping technician, Joe Krumrie, and move those funds to a service contract with Frank Nicolletti. Krumrie has reduced availability due to being in school. Frank Nicolletti is a trapping professional and is the Master Bander at Hawk Ridge Bird Observatory in Duluth, MN. In addition to significant experience trapping thousands of raptors at Hawk Ridge, Nicolletti has worked with a team of golden eagle researchers in the eastern U.S. trapping wintering golden eagles. We would like to be able to take advantage of his unique experience and expertise by contracting with Nicolletti for his time engaged in trapping attempts in southeast Minnesota this winter.

We are also seeking to move funds allocated to Personnel: Eileen Hanson to a service contract with Audubon Minnesota in Activity 2: Trapping and Tracking. Hanson has responsibilities for creating interactive ArcGIS mapping based on survey and tracking data from the Project. Hanson has taken another position within the National Eagle Center and is no longer available for this work. Instead, we believe the most efficient use of resources would be to shift the funds to a service contract with Audubon Minnesota, who have staff trained and ready to create the interactive ArcGIS maps.

Due to the need to replace a trail camera that was found to be non-functional at the beginning of this season, we are also requesting an amendment in the budget creating a line item for trail camera and supplies. These funds can be shifted from other items in the Equipment and Supplies budget item in Activity 2: Tracking and Trapping without impacting Project needs in other Equipment line items.

**Project Status as of January 2013:**

The Golden Eagle Project continues to expand our understanding of golden eagles in southeast Minnesota. We are preparing for the 9<sup>th</sup> Annual Wintering Golden Eagle survey, which will include parts of five counties in southeast Minnesota.

The Project continues to track three golden eagles using satellite telemetry and hopes to have interactive ArcGIS maps available soon by working with Audubon Minnesota, partner in the Golden Eagle Survey Project. Golden eagle #46 is once again spending much of the winter in Winona County, in and around the Whitewater Management Area and Whitewater State Park.

The Project recently added another golden eagle to the tracking project; an adult male golden eagle released on November 12, 2012 in Duluth, MN. The bird was captured at Hawk Ridge Nature Reserve as part of the Hawk Ridge Bird Observatory's on-going raptor banding efforts. Through collaboration with colleagues at Hawk Ridge, the Project was able to fit the bird with a satellite transmitter prior to release. This golden eagle bears transmitter #53 and is already offering new and important data on the migration habits and wintering range of golden eagles. While #53 has not remained in Minnesota as a wintering range, what we are learning about migration habits from other birds in the tracking project is that this golden eagle and others likely use a migration path through Minnesota regularly. Understanding the habitat use in Minnesota for golden eagles in migration will impact the education and conservation efforts of the Project.

The release of a golden eagle captured during migration offers the opportunity to understand how the wintering population observed in southeast Minnesota relates to the migrants observed at Hawk Ridge Bird Observatory each fall. Golden eagle #42 migrated past Hawk Ridge in March 2010 after spending several weeks in southeast Minnesota. Since much of the migration is not observed, combining tracking data with observational data from Hawk Ridge Bird Observatory allows much broader understanding of golden eagle migration in Minnesota.

The Project has expanded the survey area to include a portion of Fillmore County that includes likely golden eagle habitat.

**Amendment Approved (6/21/2013):**

We are seeking to revise the Golden Eagle Survey Project budget to reflect changes in trapping methodology, revised estimates of personnel time and changes in personnel responsibilities.

The amended budget reflects shifting \$1,680 from Personnel in Activity 2 Trapping and Tracking and \$2,720 from Personnel Activity 3 Public Education and Outreach to Personnel in Activity 1 Wintering Survey. Following the 9<sup>th</sup> Annual Wintering Golden Eagle survey, the Project recognized a deficit of knowledge about golden eagle habitat in the more distant portions of the survey area. Project Manager Scott Mehus invested significant time scouting golden eagle habitat in Minnesota and expanding the survey area. This coming season, Mehus plans to increase time spent scouting various parts of the survey area in order to maximize the knowledge and understanding of the entire survey area. Additional funds in this activity are necessary to carry out the 10<sup>th</sup> Annual Wintering Golden Eagle Survey and continue to expand the survey area in southeast Minnesota.

The trapping plan for this upcoming season calls for the services of trapping contractor Frank Nicoletti. The amended budget reflects an additional \$3,200 in this service contract. \$3,000 was moved from the Personnel line of Activity 2 Trapping and Tracking and \$200 from the remainder of the budget from the Capital Equipment line item in Activity 2 Trapping and Tracking.

Personnel time for Trapping and Tracking activity has been reduced since Trapping Technician Joe Krumrie is no longer on staff and the Project estimates reduced need for Trapping Technician Bryan to assist with field work this season.

Since the trapping methodology this season will utilize carcasses rather than live animal bait, the Project does not anticipate need for the Prey Animal Needs line item. The amended budget shifts the remaining \$910 from Prey Animal Needs (Activity 2 Trapping and Tracking) adding \$455 to Eagle Traps and Supplies (Activity 2 Trapping and Tracking) and \$455 to Trail Cameras (Activity 2 Trapping and Tracking) line items to purchase additional trail cameras and repair and replace eagle trapping equipment.

The Project is also adding Katie Rymer, a naturalist with the National Eagle Center to the Personnel budget item. Rymer's primary responsibilities will be in the Public Outreach and Education activity and include preparation of printed material and travel display for the Project. The \$1,600 personnel budget for Rymer will be shifted within the Personnel line item in Activity 3 Public Education and Outreach from Assistant Project Manager Eileen Hanson. Hanson's responsibilities have been reduced to coordinating Project communications and assisting with overall project management.

### **Project Status as of June 2013:**

The 9<sup>th</sup> annual golden eagle survey documented the presence of 39 golden eagles in southeast Minnesota, including two in the recently expanded survey area in Fillmore County. Survey data has been entered into mapping software and data from 2009-2013 is now available on an interactive online map at the National Eagle Center's website ([www.nationaleaglecenter.org](http://www.nationaleaglecenter.org))

The Project continues to track to the location of three golden eagles fitted with GPS satellite transmitters. All three are now in northern Canada, where this population of golden eagles is presumed to breed.

Project Manager Scott Mehus offered field trips and programs throughout the winter, educating the general public and naturalist colleagues about golden eagles in Minnesota. The Golden Eagle Survey Project shared in the Wings Across the Americas award from the US Forest Service that was awarded to the Eastern Golden Eagle Working Group.

The Project now has interactive maps with migration data available online to the general public, as well as colleagues and researchers at [www.nationaleaglecenter.org](http://www.nationaleaglecenter.org).

### **Project Status as of January 2014:**

Currently, the Project is preparing for the 10<sup>th</sup> Annual Wintering Golden Eagle Survey. More than 150 volunteer observers will be engaged to look for golden eagles throughout the survey area. The survey is documenting a regular wintering presence of a bird that was at one time thought to be a rare or occasional visitor to Minnesota. Project Manager Scott Mehus is offering survey training for volunteer observers, as well as doing preliminary scouting of many of the survey areas in order to get the most complete count of golden eagles in southeast Minnesota on the survey day, January 18<sup>th</sup>, 2014.

Efforts to capture a golden eagle in order to attach a GPS satellite-linked transmitter continue this winter. The Project hopes to add one more golden eagle that uses Minnesota to the tracking data already gathered to better understand the migration patterns and breeding origins of these golden eagles.

Project Manager Scott Mehus has been active in offering programs about golden eagles to audiences around the state and in Wabasha at the National Eagle Center. Education and Outreach Assistant Katie Rymer is creating a brochure to convey some of what the Project has learned about golden eagles in the last three years.

**Amendment Request (06/06/14)**  
**Approved by the LCCMR June 26, 2014**

The Project is seeking an amendment to revise the budgets for Activities 1 and 3, Wintering Survey and Public Education and Outreach. We are seeking to shift \$1,250 retroactively from the personnel line item in Activity 1, Wintering Survey, to the personnel line item in Activity 3, Public Education and Outreach. Due to higher than anticipated demand for public programs on the Golden Eagle Survey Project, more personnel time was needed to offer education about golden eagles in Minnesota. Remaining personnel time originally budgeted for the Wintering Survey can be shifted to Public Outreach and Education to cover these unanticipated costs.

**Project Status as of June 2014:**

The Golden Eagle Survey Project has completed an annual survey of golden eagles wintering in the blufflands region, including the Paleozoic Plateau of southern Minnesota. This survey data has been instrumental in confirming a regular wintering population of golden eagles in Minnesota. This data establishes a reference point for future study and a basis for habitat management decisions to ensure conservation of golden eagles in Minnesota.

The Golden Eagle Survey Project also carried out extensive field observations, investigating areas with suitable golden eagle habitat and expanding the annual survey area in southeast Minnesota. The survey now includes parts of six counties in southeast Minnesota's Paleozoic Plateau.

The Golden Eagle Survey Project has been actively tracking migratory golden eagles that use habitats in Minnesota in winter and during migration. In order to track these golden eagles, the Project first had to capture an eagle and fit it with a satellite transmitter.

The Project focused its efforts to trap golden eagles in southeast Minnesota, where golden eagles are regularly observed in winter. One golden eagle, #46, was captured in January 2011. This juvenile male golden eagle was released with a GPS satellite-linked transmitter, allowing the Project to gather location data from the bird throughout the year, for three to five years. The Project tracked #46 for more than 950 days, from his release in Wabasha County and his migrations to Nunavut, Canada and back to wintering range in southeast Minnesota.

Efforts to trap additional golden eagles and equip them with satellite transmitters in Minnesota's Paleozoic Plateau have proved difficult and resource intensive over the course of the Project. Fortunately in 2012, Hawk Ridge Observatory in Duluth, MN was able to successfully capture a golden eagle during migration through northeast Minnesota. The Golden Eagle Survey Project was able to attach a transmitter and release this adult male golden eagle, #53. The Project has tracked #53 on his migrations to and from far northern Canada since November 2012. Unlike #46, this golden eagle has not been observed to winter in southeast Minnesota. Instead in the fall of both 2012 and 2013 he migrated much farther south, wintering in Missouri. This has provided valuable new data about golden eagles that migrate through Minnesota.

Due to the difficulties of luring a golden eagle in the 2013-2014 season, the Project was unable to get the last satellite transmitter fitted to a golden eagle. The Golden Eagle Survey Project plans to continue efforts to capture a golden eagle in order to get this transmitter in use gathering data on golden eagles in the blufflands.

From the beginning, the Golden Eagle Survey Project has been focused on the importance of education the public about golden eagles in Minnesota. Since 2011, more than 175,000 people have had the opportunity to learn about golden eagles in Minnesota through the National Eagle Center's daily educational programming at the interpretive center in Wabasha, MN.

Additionally, the Golden Eagle Survey Project has reached more than 1,000 people through golden eagle focused field trips and other outreach programming. Through winter field trips, the Project has offered opportunities for the public to learn more about golden eagles in Minnesota, how to identify them, and understand the habitats on which they depend. Since 2011, golden eagle field trips at the National Eagle Center, led by Golden Eagle



Survey Project Manager Scott Mehus have engaged nearly 400 people. Hundreds more have learned about the Golden Eagle Survey Project and golden eagles in Minnesota through programs presented to audiences around the state.

The Golden Eagle Survey Project has been regularly featured in regional news media, expanding our reach far beyond those involved in specific programs about golden eagles offered by the Project. Maps developed using data from Wintering Golden Eagle Surveys are available to the general public online ([www.nationaleaglecenter.org](http://www.nationaleaglecenter.org)). Specific detailed survey data is made available by request to researchers, wildlife conservation professionals and other interested parties.

Golden Eagle Survey Project data and information about golden eagles in Minnesota are publicly available on the National Eagle Center’s website. Since January, 2012, [www.nationaleaglecenter.org](http://www.nationaleaglecenter.org) has seen nearly 30,000 unique visits to the Golden Eagle Survey Project pages. Here visitors learn about the presence of golden eagles in Minnesota, view data and Project maps and learn how they can get involved in efforts to understand and conserve golden eagles in Minnesota.

**IV. PROJECT ACTIVITIES AND OUTCOMES:**

**ACTIVITY 1: Wintering Golden Eagle Survey**

**Description:**

The Golden Eagle Survey Project will conduct a Wintering Golden Eagle Survey each January. Since 2004, the Golden Eagle Survey Project has recorded the consistent presence of golden eagles in Minnesota’s bluffland region. Volunteer observers log thousands of miles each year to document the presence of golden eagles in the blufflands in areas outlined by the Project as likely habitat. Coordinating the survey and collecting the data involved staff time, as well as travel to investigate potential survey areas and habitats.

The Project will continue this survey and expand the coverage area to include areas adjacent to the current survey area (see attached map) and cover more completely the likely habitat of Minnesota’s wintering golden eagles. (The attached map outlines current survey areas and some potential survey areas.)

**Summary Budget Information for Wintering Golden Eagle Survey:**

**ENRTF Budget: \$ 8,750**  
**Amount Spent: \$ 8,146.04**  
**Balance: \$ 603.96**

**Activity Completion Date: March, 2014**

<b>Outcome</b>	<b>Completion Date</b>	<b>Budget</b>
1. Collect population data on golden eagles in Minnesota’s bluffland subsection by coordinating annual winter surveys and conducting field observations	March 2014	\$5,000
2. Expand golden eagle survey area to include likely habitat in in southeast Minnesota and ensure more complete coverage of likely golden eagle habitat in the state.	June 2014	\$3,750

**Activity Status as of January, 2012:**

Project Manager Scott Mehus explored potential golden eagle survey areas in Wabasha, Goodhue and Houston counties. The Wintering Golden Eagle Survey took place on January 21<sup>st</sup>, 2012. More than 100 people participated throughout the survey area and observed 30 golden eagles in Minnesota.

**Activity Status as of June, 2012:**

Field observations of golden eagles in southeast Minnesota continued through March, 2012.

### **Activity Status as of January, 2013:**

The 9<sup>th</sup> Annual Wintering Golden Eagle Survey will take place on January 19<sup>th</sup>, 2013. Project Manager Scott Mehus has held three survey training sessions this winter to ensure that volunteer observers are ready for the survey. The Project has expanded the survey area to include a portion of Fillmore County that includes likely golden eagle habitat.

### **Activity Status as of June, 2013:**

The 9<sup>th</sup> annual golden eagle survey documented the presence of 39 golden eagles in southeast Minnesota, including two in the recently expanded survey area in Fillmore County. On the survey day, Project Manager Scott Mehus surveyed an area in the far southeast corner of the state (Route MN 11) which had yielded 0 golden eagles in previous years' surveys. Through Mehus's expert knowledge of the habitat and behavior of golden eagles, he was able to identify 16 golden eagles in the survey area that day.

Survey data has been entered into mapping software. Survey data from 2009-2013 is now available on an interactive online map at the National Eagle Center's website ([www.nationaleaglecenter.org](http://www.nationaleaglecenter.org))

### **Activity Status as of January, 2014:**

The 10<sup>th</sup> Annual Wintering Golden Eagle Survey will take place on January 18<sup>th</sup>, 2014. Project Manager Scott Mehus and Assistant Project Manager Eileen Hanson are recruiting volunteers for the upcoming survey. Three survey training sessions are planned for mid-January to prepare volunteer observers for the survey. On January 11<sup>th</sup>, More than 60 people attended a survey training workshop hosted at Whitewater State Park in Winona County, MN.

Mehus has also spent time scouting some of the survey areas in Fillmore County and elsewhere, to prepare volunteer observers with tips on where to look for golden eagles on the survey day.

### **Final Report Summary:**

The Golden Eagle Project has completed an annual survey of golden eagles wintering in the blufflands region, including the Paleozoic Plateau of southern Minnesota. This survey data has been instrumental in confirming a regular wintering population of golden eagles in Minnesota. Maps developed using data from Wintering Golden Eagle Surveys are available online ([www.nationaleaglecenter.org](http://www.nationaleaglecenter.org)) This data establishes a reference point for future study and a basis for habitat management decisions to ensure conservation of golden eagles in Minnesota. Detailed survey data is made available by request to researchers, wildlife conservation professionals and other interested parties.

In addition to the annual Wintering Golden Eagle Surveys, the Project carried out extensive field observations, investigating areas with suitable golden eagle habitat and expanding the annual survey area in southeast Minnesota. The survey now includes parts of six counties in southeast Minnesota's Paleozoic Plateau.

On January 18, 2014, the Golden Eagle Project conducted the 10<sup>th</sup> Annual Wintering Golden Eagle Survey. 171 trained volunteer observers counted 112 golden eagles throughout the survey area. Of the 36 golden eagles observed in Minnesota, just three were juveniles, a much smaller proportion than had been observed in previous years. In previous years' surveys, juvenile golden eagles made up 25%-30% of birds observed. This is one example of how the Project is contributing much needed population data on migratory golden eagles in Minnesota. By continuing the annual Wintering Golden Eagle Survey, the Project can detect issues of concern with the population and help to safeguard its future in the state.

## **ACTIVITY 2: Trapping and Tracking**

### **Description:**

The Golden Eagle Survey project will continue to track golden eagles #42 and #46, who were released in previous years with GPS linked-satellite transmitters. Inputting GPS data into ArcGIS software will create a fuller picture of the range, habitat type, migration routes and timing of golden eagles that winter in the bluffs. The project will purchase additional GPS transmitters to track more golden eagles. These transmitters will provide data 365 days/year from anywhere on the globe, for up to seven years. Data collected from these golden eagles will contribute to a better understanding of the range, habitat use, migration patterns and management needs of golden eagles in Minnesota.

In order to track additional golden eagles known to use Minnesota’s bluffs as winter habitat, individuals or teams will lure golden eagles, using traps that protect the health and safety of the bird, and attach a GPS satellite transmitter. We will also collaborate with banders and rehabilitators in Minnesota in case a suitable golden eagle candidate for tracking would become available for release with a satellite transmitter. Trapping involves significant preparation, equipment and driving time and requires items such as rocket nets, bow nets, other eagle traps, and field equipment. Compensation for time, mileage and equipment is a significant part of the budget for this activity.

<b>Summary Budget Information for Trapping and Tracking:</b>	<b>ENRTF Budget:</b>	<b>\$33,320</b>
	<b>Amount Spent:</b>	<b>\$ 29,501.08</b>
	<b>Balance:</b>	<b>\$ 3,818.92</b>

**Activity Completion Date: March, 2013**

Outcome	Completion Date	Budget
1. Collect GPS tracking data and create interactive map in ArcGIS system that will visually represent the population and geographic data collected from annual surveys, field observations and tracking of golden eagles with satellite transmitters.	June 2014	\$10,400
2. Trap a golden eagle that uses Minnesota’s Paleozoic Plateau bluffland subsection as part of winter range	March 2014	\$14,820
3. Release and track up to two golden eagles with GPS satellite transmitters	March 2014	\$8,100

**Activity Status as of January, 2012:**

The Project continues to track golden eagle #46. Unfortunately golden eagle #42 is no longer transmitting data. We have been unable to determine the outcome because of #42’s remote location at the time of last transmission. Golden eagle #42 is presumed dead. Golden eagle #46 continues to transmit data and has returned to southeast Minnesota. December 2011 location data indicated #46 in and around the Whitewater Management Area in Winona County.

**Activity Status as of June, 2012:**

In February 2012 the Project successfully trapped and released an adult female golden eagle, #45. The Project is tracking golden eagles #46 and #45. Both #45 and #46 are currently in northern Canada, west of Hudson Bay. Data indicates that #45 is nesting in northwestern Nunavut.

**Activity Status as of January, 2013:**

In November 2012 the Project added another golden eagle to the tracking project. We are now actively tracking three golden eagles.

#46 has returned to Minnesota after spending the summer in northern Canada. #46 has spent much of the winter so far in Winona County, near the Whitewater Management Area and Whitewater State Park.

#45, an adult female golden eagle, is currently wintering in central Wisconsin, in an area she was known to use in previous years.

#53, the migrating golden eagle captured and released in Duluth in November 2012, continued moving south and was most recently located in Missouri. This is the farthest south the Project has tracked any of the birds, so we continue to learn new things about migration routes and wintering range.

### **Activity Status as of June, 2013:**

The Project continues to track the location of three golden eagles fitted with GPS satellite transmitters.

#46 spent much of the winter in Winona County, MN. This subadult male began moving north at the end of March and took a path almost directly north, taking him near Duluth, MN on his migration.

#45 began moving north at the beginning of April and headed directly for the location in northern Canada where it is believed that she nested last summer.

#53 started his spring migration in mid-March and passed just south and west of Duluth, MN around March 22<sup>nd</sup>. He is now in far northern Canada, presumably on a breeding territory for the summer.

Tracking data has been entered into mapping software and interactive maps produced. Interactive ArcGIS maps showing migration paths for all three golden eagles are now available to the public on the National Eagle Center's website ([www.nationaleaglecenter.org](http://www.nationaleaglecenter.org)).

### **Activity Status as of January, 2014:**

The Project continues to track three golden eagle using satellite linked GPS transmitters, two of which were released in Minnesota. #53, who was released at Hawk Ridge Bird Observatory in Duluth, MN in 2012, once again migrated through Minnesota and is currently in Missouri. After his arrival in northern Ontario last spring, we have had some difficulty with the signal from #46, who was released in Wabasha County in 2011. We received the last regular signals from the western side of Hudson's Bay in early summer, and a couple of intermittent signals from the same area in September and November of 2013. It is unclear whether the transmitter is malfunctioning or whether the bird has been injured or died.

In November, the Project placed deer carcasses with a trail camera in rural Wabasha County, where golden eagles have been sighted regularly. Trapping Technician Bryan Hall continues to check the camera and keep the site baited to attract golden eagles to feed. If and when golden eagles are seen feeding at the site, active trapping efforts will begin at the sites.

### **Final Report Summary:**

The Golden Eagle Survey Project has been actively tracking migratory golden eagles that use habitats in Minnesota for some part of the year. Golden eagles are not known to breed in Minnesota and are typically only found in here during fall and spring migration or during the winter months. The Project focused efforts to trap a golden eagle in southeast Minnesota, where golden eagles are regularly observed in winter. One golden eagle, #46, was captured in January 2011. This juvenile male golden eagle was released with a GPS satellite linked transmitter, allowing the Project to gather location data from the bird throughout the year, for three to five years.

Golden eagle #46 was found to migrate between a summer range in far northern Canada and a regular winter range in Winona County near the Whitewater Management Area. The Project tracked #46 for more than 950 days, from his release in Wabasha County and his migrations from Nunavut, Canada to southeast Minnesota. Unfortunately, #46's transmitter stopped giving a reliable signal in 2013. The last known transmissions from September 2013 indicated a location west of Hudson Bay on a southward migratory path, toward southeast Minnesota. These final transmissions were from a remote area of Canada where it is not feasible to recover the transmitter. It is unknown whether the transmitter has failed or the bird died. In any case, valuable new migration data was gathered from this bird's transmissions from January 2011 to September 2013.

Efforts to trap additional golden eagles in Minnesota's Paleozoic Plateau have proved difficult and resource intensive over the course of the Project. First, suitable habitat had to be found that was accessible for trappers and trapping equipment. Second, a golden eagle had to be successfully lured to a baited trap site. And finally, in order to engage tracking equipment, the golden eagle must be captured, fitted with the transmitter and released back to the wild.

Fortunately in 2012, Hawk Ridge Observatory in Duluth, MN was able to successfully capture a golden eagle during migration through northeast Minnesota. The Golden Eagle Survey Project was able to attach a transmitter and release this adult male golden eagle, #53. The Project has tracked #53 on his migrations from far northern Canada since November 2012. Unlike #46, this golden eagle has not been observed to winter in southeast Minnesota. Instead in the fall of both 2012 and 2013 he migrated much farther south and spent the winter in Missouri.

The Golden Eagle Survey Project continues to collect location data from golden eagles #53 and #45. These migratory golden eagles have used Minnesota as part of their migratory path from breeding territories in northern Canada. This tracking data reveals groundbreaking new understanding of the winter range for golden eagles in the Midwest. Prior to this Project, little was known of the extent of the winter range or migratory paths of golden eagles that use Minnesota during migration. Tracking data is useful in making conservation and wildlife management decisions, as well as siting of commercial or public infrastructure. The Project has already provided satellite-tracking data to assist one utility seeking to locate transmission lines with limited disruption to migratory eagles.

In order to utilize trapping resources efficiently, each season the Project set up bait sites with trail cameras so that activity at the site could be monitored. Once golden eagle activity at a bait site was confirmed, active trapping efforts could be employed at the site. In the course of the Project, several different trapping methods were employed in an attempt to find a successful method.

In the 2010-2011 season, the Project employed bar traps, a method that has been used successfully by other large raptor trapping endeavors. A bar trap is a large pen (8'x8'x5') with just a few bars across the top opening. Utilizing the observed behavior of golden eagles in this area for seeking wild turkeys as prey items, the Project baited the bar traps with domestic turkey breeds that look very similar to their wild cousins. A golden eagle would be able to drop between the bars into the pen to seize the turkey, but would be unable to spread its wings to fly out. The golden eagle would be captured alive and unharmed in this process. The Project set up several bar traps in Wabasha County baited with live turkeys, in areas known to be utilized by golden eagles. However, these trapping attempts were unsuccessful and bar traps were not utilized in future seasons.

The Project also utilized bow nets and this is the method that resulted in the successful capture of #46 in January 2011. Bow nets are large, spring-loaded nets that can be placed on the ground with bait in the center of the net coverage area. When a golden eagle comes to feed on the bait, the bow net can be triggered remotely to capture the golden eagle unharmed. The Project continued to use bow nets in trapping efforts and this is the method employed by trapping contractor Frank Nicoletti in his attempts to capture a golden eagle in 2013 and 2014.

The 2013-2014 season's attempts to trap and release an additional golden eagle fitted with a satellite-linked transmitter were unsuccessful. In February 2014, Nicoletti set up trapping efforts at a location in Houston County. Although several golden eagles were observed in the area, and despite Nicoletti's experience and focused trapping activity, none were lured to the trap site and these efforts did not yield a golden eagle to be fitted with a transmitter.

Trapping technician, Bryan Hall, also set up deer carcasses in Wabasha County. Hall regularly monitored the carcasses using trail cameras to check for golden eagle activity. Since no additional golden eagle activity was

observed at the bait sites, the Project did not engage contracted trapper Nicoletti for the final week of estimated services and \$1,650 remains in this budget line item. An additional \$1,507 remains in the travel expenses line item as a consequence of this reduced trapping schedule.

Due to the difficulties of successfully capturing a golden eagle, the Golden Eagle Survey Project has been unable to get the last satellite transmitter fitted to a golden eagle. The Project plans to continue efforts to capture a golden eagle in order to get this transmitter in use gathering data on golden eagles in the bluffslands.

**ACTIVITY 3: Public Education and Outreach**

**Description:**

Education about the presence of golden eagles in Minnesota is a critical part of the Golden Eagle Survey Project. Now that the Project can confirm a regular winter population using Minnesota’s bluffland habitat, informing the public about the presence of these magnificent birds of prey may be critical to this population’s survival.

Through the National Eagle Center’s public programs, the Golden Eagle Survey Project can reach up to 100,000 annual visitors and share important information on golden eagles in Minnesota. Classes and field trips will be offered throughout the winter to help participants learn to identify a golden eagle and see them in their natural environment. The Golden Eagle Survey Project will continue to work with wildlife managers in the Minnesota Department of Natural Resources and area nature centers and parks in educating the general public. The Golden Eagle Survey Project will also create educational materials and A/V presentations about golden eagles to aid in outreach to landowners and the general public.

The Golden Eagle Survey Project encourages appropriate habitat conservation and restoration. The presence of remnant or restored bluff prairies is closely linked with the presence of wintering golden eagles in Minnesota. Conservation efforts related to bluff prairie habitat would have broad positive impacts for many of Minnesota’s rare, threatened and endangered species. The Golden Eagle Survey Project will collaborate with area landowners or wildlife managers on a habitat restoration project in one of Minnesota’s most threatened habitat types, the dry upland (or ‘goat’) prairie.

**Summary Budget Information for Public Education and Outreach:**

**ENRTF Budget: \$ 17,930.00**

**Amount Spent: \$ 16,373.48**

**Balance: \$ 1,556.52**

**Activity Completion Date: June, 2013**

<b>Outcome</b>	<b>Completion Date</b>	<b>Budget</b>
1. Educate the general public, landowners and wildlife professionals about golden eagles and their habitat needs through programs at the National Eagle Center, field trips and seminars, outreach programs and collaboration with landowners and wildlife managers on habitat restoration.	June 2014	\$10,830
2. Create educational materials and displays to further public understanding of golden eagles in Minnesota.	June 2014	\$7,100

**Activity Status as of January, 2012:**

Since November, 2011 143 people have participated in four Golden Eagle field trips and learned about golden eagles wintering in Minnesota’s bluffslands. Since July 2011, 39,876 people have visited the National Eagle Center. More than 80% of those visitors participated in an educational program that included information about the Golden Eagle Project and golden eagles in Minnesota.

**Activity Status as of June, 2012:**

Project Manager Scott Mehus conducted a field trip for the general public about golden eagles, and led a field trip for avian care specialists from around the US and the world.

**Activity Status as of January, 2013:**

Project Manager Scott Mehus has offered one field trip for the general public so far this winter, with two more planned for February. A field trip is an opportunity for people to learn about golden eagles and to observe them in the wild. 25 people participated in the December 2012 golden eagle field trip and already 40 are registered for the upcoming trips this winter.

In addition, Mehus has offered offsite programs at the Houston Nature Center (Houston County, MN) and at Whitewater State Park (Winona County, MN) for members of the general public to learn more about golden eagles in the blufflands. More than 60 participants learned more about golden eagles in the blufflands through these public outreach programs.

The National Eagle Center (NEC) continues to educate all visitors about golden eagles in the blufflands, and in 2012, more than 74,000 people visited the NEC.

**Activity Status as of June, 2013:**

More than 120 people participated in three golden eagle field trips led by Project Manager Scott Mehus. In addition, Mehus spoke to regional groups including Friends of the Upper Mississippi National Wildlife and Fish Refuge and about golden eagles in Minnesota.

The Golden Eagle Survey Project shared in the Wings Across the Americas award from the US Forest Service that was awarded to the Eastern Golden Eagle Working Group.

**Activity Status as of January, 2014:**

Project Manager Scott Mehus offered programs about golden eagles in the blufflands to a variety of audiences, both general public and to naturalist and wildlife conservation professionals. In September, Mehus spoke to an audience of US Forest Service professionals and others about golden eagles and their habitat needs in southeast Minnesota. In November, the Golden Eagle Project was a featured topic during the Minnesota Naturalists Association conference, held in Lanesboro, MN and attended by 150 naturalist educators from around the state. Approximately 25 naturalist educators participated in the Golden Eagle Survey Project workshop with Project Manager Mehus. In January, Mehus offered a program at Whitewater State Park about golden eagles that was attended by about 50 people.

Education and Outreach Assistant Katie Rymer is working on a tri-fold brochure about the Golden Eagle Survey Project and what has been learned about golden eagles wintering in Minnesota. This brochure will contain information about the habitat, range and migration patterns of golden eagles. The Project anticipates printing several thousand for distribution to conservation professionals, landowners and the general public.

The Golden Eagle Survey Project and golden eagles in Minnesota are topics of interest for regional birding clubs and festivals. Project Manager Scott Mehus spoke to the Red Wing Audubon club and will be speaking at the Sax-Zim Birding Festival in northern Minnesota in February. Thousands of visitors to the National Eagle Center continue to learn more about golden eagles in Minnesota through the daily educational programs offered here.

**Final Report Summary:**

Education about the presence of golden eagles in Minnesota is a critical part of the Golden Eagle Survey Project. In order to broadly engage the public, landowners and wildlife managers and ensure continued suitable habitat is available for golden eagles wintering in Minnesota, the Project has offered many opportunities for people to learn about golden eagles and the habitats on which they depend.

The National Eagle Center reaches an audience of nearly 75,000 people annually at our interpretive center in Wabasha, MN. More than 80% of these visitors attend a program during which they learn about the Golden Eagle Survey Project and the presence of golden eagles in Minnesota. Since 2011, more than 175,000 people have had the opportunity to learn about golden eagles in Minnesota through the National Eagle Center's daily educational programming.

Additionally, the Golden Eagle Survey Project has reached more than 1,000 people through golden eagle focused field trips and other outreach programming. Through winter field trips, the Project has offered opportunities for the public to learn more about golden eagles in Minnesota, how to identify them in the wild, and understand the habitats on which they depend. Since 2011, golden eagle field trips at the National Eagle Center, led by Golden Eagle Survey Project Manager Scott Mehus have engaged nearly 400 people.

Hundreds more have learned about golden eagles through programs offered by Project Manager Scott Mehus to audiences around the state. In 2013 and 2014 Mehus offered programs about golden eagles in Minnesota at Whitewater State Park (Winona County, MN) and the Houston Nature Center (Houston County, MN). These programs were very popular and reached approximately 200 people.

In March 2014 Project Manager Scott Mehus was invited to speak at a regional birding club about the Golden Eagle Project reaching an audience of about 50 people. Since June 2013, the Project has offered presentations at birding clubs and festivals reaching an additional 350+ people.

The Golden Eagle Survey Project has also been able to share information about golden eagles in Minnesota to wildlife and conservation professionals through the Minnesota Naturalists Association and Upper Mississippi National Wildlife and Fish Refuge, Minnesota Department of Natural Resources and Minnesota Ornithological Union. In May 2014, Mehus presented a program on golden eagles to the annual conference of the Minnesota Master Naturalists, a conference attended by 200 volunteer naturalists from around the state. By reaching bird and conservation professionals who in turn pass on knowledge about golden eagles in Minnesota to their own audiences, the Project extends its impact and grows awareness of this unique species in our state.

The Golden Eagle Survey Project has also produced materials to enhance our outreach and education efforts. A tri-fold brochure serves as primary collateral for the Project, outlining facts about golden eagles, as well as what the Project has learned about golden eagles in the blufflands region. A travel display including Project maps and images enhances the Project's visual appeal and educational engagement at outreach events and programs.

## **V. DISSEMINATION:**

### **Description:**

Interactive ArcGIS maps created from data collection through the surveys, field observations and tracking of golden eagles will be available to all partners in the Project. Maps showing migration routes and geographic location information on golden eagles being tracked by the Project will be available to the general public through the National Eagle Center's website ([www.nationaleaglecenter.org](http://www.nationaleaglecenter.org)) throughout the Project duration. Results of the Annual Survey will be publicly available each year through the website and regional media outlets.

Data collected throughout the Golden Eagle Survey project will be freely available to all partners in the Project. Additionally, some data and field observations may be shared with colleagues studying golden eagles in other regions of the US, and around the world.

As more data is gathered, the Project will look for opportunities to present the preliminary data and observations to interested organizations and at academic conferences.

### **Status as of January, 2012:**



In October 2011, The Golden Eagle Project presented a paper at the Raptor Research Foundation annual conference in Duluth, MN. Attendees included researchers who are investigating a population of golden eagles in the eastern United States.

In December 2011, The Golden Eagle Project offered information and materials about the Project at the Minnesota Ornithological Union conference. The conference was attended by research colleagues and the general public many of whom will continue to receive updates and more information about the Golden Eagle Project.

Tracking maps of golden eagles #42, #44 and #46 from 2009-2012 are available at [www.nationaleaglecenter.org](http://www.nationaleaglecenter.org).

Results of the 8<sup>th</sup> Annual Wintering Golden Eagle Survey were released to regional media outlets and made available on the internet at [www.nationaleaglecenter.org](http://www.nationaleaglecenter.org).

### **Status as of June, 2012:**

Updated GPS data maps that illustrate the migration of the Project's tracked golden eagles continue to be posted on our website ([www.nationaleaglecenter.org](http://www.nationaleaglecenter.org)).

### **Status as of January, 2013:**

The Project continues to post regular updates of the locations of all the birds we are tracking on our website ([www.nationaleaglecenter.org](http://www.nationaleaglecenter.org)) and now on our Facebook page ([www.facebook.com/TheNationalEagleCenter](http://www.facebook.com/TheNationalEagleCenter)). In addition, the Project was featured in the Duluth News Tribune (11/12/12) and on KARE 11 (11/14/12) following the release of golden eagle #53 in November. In December, Project Manager Scott Mehus attended the annual conference of the Minnesota Ornithological Union, offering information about the Project to 165 research colleagues and interested members of the public.

### **Status as of June, 2013:**

The Project now has interactive maps with survey and migration data available online at [www.nationaleaglecenter.org](http://www.nationaleaglecenter.org). These maps are available to the general public, as well as researchers and conservation colleagues.

In April 2013 Project Manager Scott Mehus was a featured speaker at the Minnesota Phenology conference where he shared information about golden eagles and the Project reaching an audience of more than 60 naturalists and educators from around the state. In May 2013, news of the Wings Across the Americas award and the Golden Eagle Survey Project's contributions to knowledge of golden eagles was publicized in regional media outlets.

### **Status as of January, 2014:**

The National Eagle Center continues to post regular updates on social media and our website on the migration of the golden eagles the Project is tracking. The Golden Eagle Project is featured in the January-February 2014 issue of Minnesota Conservation Volunteer Magazine. (<http://www.dnr.state.mn.us/volunteer/janfeb14/golden-eagles-overwinter-in-minnesota-blufflands.html>)

### **Final Report Summary:**

The Golden Eagle Survey Project has been regularly featured in regional news media throughout the Project's duration. An attached list highlights some of the regional news stories about the Golden Eagle Survey Project. Links to the story are provided where available. In 2013, the Golden Eagle Project shared in the US Forest Service's Wings Across America award for work as part of the Eastern Golden Eagle Working Group. In January 2014, Minnesota DNR's monthly magazine *Conservation Volunteer* featured a cover story about the Golden Eagle Survey Project's work and golden eagles in Minnesota.

In February, 2014 results of the 10<sup>th</sup> Annual Wintering Golden Eagle Survey were featured in regional media outlets. In addition, KTTC (Rochester, MN television) featured a story specifically about golden eagles in

Minnesota and the Golden Eagle Survey Project, interviewing Project Manager Scott Mehus. In January 2014 the Project's program on golden eagles at Whitewater State Park was featured in the Rochester Post-Bulletin (copy attached).

Golden Eagle Survey Project data are publicly available on the National Eagle Center's website. Since January, 2012, [www.nationaleaglecenter.org](http://www.nationaleaglecenter.org) has seen nearly 30,000 unique visits to the Golden Eagle Survey Project information pages. Here visitors learn about the presence of golden eagles in Minnesota, view data and Project maps and learn how they can get involved in efforts to understand and conserve golden eagles in Minnesota. In addition, updates on golden eagle tracking are posted on social media outlets, reaching an audience of more than 10,000 followers.

**VI. PROJECT BUDGET SUMMARY: JULY 2011-JUNE 2014**

**A. ENRTF Budget:**

<b>Budget Category</b>	<b>\$ Amount</b>	<b>Explanation</b>
Personnel:	\$23,680	Project Manager is responsible for overall project management, education and outreach, co-coordinating the annual survey and supervising trapping and field work. 49% FTE The Assistant Project Manager is responsible for coordinating Project outreach and communication. 10% FTE Trapping Technician will assist with field set-up, maintenance of traps, and care of prey animals. 5% FTE Outreach and Education Assistant is responsible for designs printed materials and travel display. 10%FTE
Service Contracts:	\$11,520	Audubon Minnesota will provide data handling services for GPS satellite data from golden eagle transmitters. Frank Nicolletti will provide trapping services. Audubon Minnesota will create interactive ArcGIS maps from survey and tracking data.
Equipment/Tools/Supplies:	\$4,500	Field data collection devices (e.g. digital cameras, trail camera, video camera, handheld GPS), eagle traps and supplies, walkie-talkies/2-way radios, and captured eagle supplies such as hoods, kennels and materials for attaching transmitters.
Capital Equipment over \$3,500	\$ 7,300	2 GPS satellite transmitters
Travel Expenses in MN:	\$ 7,500	Travel to and from existing and potential survey areas, trap sites, education and outreach opportunities and reimbursement for trapping contractors
Printing:	\$ 3,500	Brochures, educational materials
Other:	\$ 2,000	Purchase of travel display
<b>TOTAL ENRTF BUDGET:</b>	<b>\$60,000</b>	

**Explanation of Use of Classified Staff:** N/A

**Explanation of Capital Expenditures Greater Than \$3,500:** The Project will purchase two GPS satellite transmitters to track additional golden eagles. The current estimated cost of the transmitters is \$3,750 per transmitter.

**Number of Full-time Equivalent (FTE) funded with this ENRTF appropriation: 0.84 FTE**

**Number of Full-time Equivalent (FTE) estimated to be funded through contracts with this ENRTF appropriation: 0.11 FTE**

**B. Other Funds:**

Source of Funds	\$ Amount Proposed	\$ Amount Spent	Use of Other Funds
<b>Non-state</b>			
Audubon Minnesota	\$20,000	\$	In-kind donation of satellite data fees
<b>State</b>			
Minnesota DNR	\$1,680	\$1,680	In-kind donation of field work crew
<b>TOTAL OTHER FUNDS:</b>	<b>\$21,680</b>	<b>\$1,680</b>	

\*MN DNR funded a MN Conservation Corps work crew to assist with trapping and field work for the Project.

**VII. PROJECT STRATEGY:**

**A. Project Partners:** National Eagle Center, Audubon Minnesota, Minnesota DNR Non-Game Wildlife Program and Minnesota Conservation Corps. All ENRTF dollars will go to National Eagle Center.

**B. Project Impact and Long-term Strategy:**

Golden Eagles in North America are primarily found in the western United States and Canadian Provinces. There have been occasional reports of golden eagles from most counties in Minnesota, and Hawk Ridge Bird Observatory in Duluth, Minnesota annually reports fall migration counts between 115 – 200 birds. In recent years, the Golden Eagle Survey Project has been able to document a regular winter population of golden eagles using the bluffland habitat of Minnesota’s Paleozoic Plateau.

A regular winter population of golden eagles in Minnesota raises new and important management questions. Because these birds were not previously thought to be regular residents, very little is known about their habitat needs and range in Minnesota. The Golden Eagle Survey Project aims to better understand golden eagles in the blufflands, in order to protect them and the habitat they require.

Knowing the breeding origin (or origins) of these birds is of high importance. Our preliminary data shows that golden eagles using Minnesota’s blufflands in winter, spending the summer breeding months in northern Ontario and Quebec, where they are considered threatened and endangered. More data collected by the Project will show more clearly the breeding origin(s), migration patterns, habitat use and range of these birds.

Minnesota’s blufflands provide critical wintering habitat for these golden eagles. Just as we are concerned about habitat loss in Central and South America for many of Minnesota’s migratory songbirds, we should also be concerned about the winter habitat here in Minnesota for a species that many believe is in decline across North America.

The habitat type most closely associated with Minnesota’s wintering golden eagles is itself a critically endangered habitat. The dry, upland prairie, known locally as a ‘goat prairie’, is home to several of Minnesota’s threatened and endangered species. As the Project works to inform the public about the presence of golden eagles, and the need to conserve and restore this habitat type, many other less charismatic species will likely benefit.

Golden eagles moving from western breeding areas could be seriously impacted by wind generation projects proposed for the Great Plains and western Minnesota. Data from the Golden Eagle Survey Project will provide a better understanding of migration routes and habitat use which can inform planning for wind generation and power transmission projects for the benefit of all concerned.

The education and outreach efforts of the Project are integral to ensuring a stable future for golden eagles in Minnesota. Most of the habitat in which golden eagles have been documented is privately owned or under multiple agency jurisdictions. It will be critical to broadly inform and engage the public, landowners and wildlife managers about golden eagles in Minnesota in order to protect and preserve this magnificent species in the state.

**C. Spending History:**

<b>Funding Source</b>	<b>M.L. 2005 or FY 2006-07</b>	<b>M.L. 2007 or FY 2008</b>	<b>M.L. 2008 or FY 2009</b>	<b>M.L. 2009 or FY 2010</b>	<b>M.L. 2010 or FY 2011</b>
National Eagle Center		\$10,000	\$10,000	\$17,300	
Audubon Minnesota				\$11,285	
MN Department of Natural Resources				\$5,450	
US Fish and Wildlife Service				\$3,650	

**VIII. ACQUISITION/RESTORATION LIST:**

**IX. MAP(S):** See attachments: MN Wintering Golden Eagle Survey Routes and golden eagle migration

**X. RESEARCH ADDENDUM: N/A**

**XI. REPORTING REQUIREMENTS:**

Periodic work plan status update reports will be submitted not later than January 2012, June 2012, January 2013, June 2013, January 2014, June 2014. A final report and associated products will be submitted between June 30 and August 1, 2014 as requested by the LCCMR.

Final Attachment A: Budget Detail for M.L. 2011 (FY 2012-13) Environment and Natural Resources Trust Fund Projects											
Project Title: Golden Eagle Survey Project											
Legal Citation:											
Project Manager: Scott Mehus											
M.L. 2011 (FY 2012-13) ENRTF Appropriation: \$ 60,000											
Project Length and Completion Date: 3 years, June 2014											
Date of Update: January 2014											
ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Activity 1 Budget	Amount Spent	Balance	Activity 2 budget	Amount Spent	Balance	Activity 3 Budget	Amount Spent	Balance	TOTAL BUDGET	TOTAL BALANCE
<b>BUDGET ITEM</b>											
<b>Personnel (Wages and Benefits)</b>	\$6,750.00	\$6,516.54	\$233.46	\$7,000.00	\$6,603.63	\$396.37	\$9,930.00	\$9,881.09	\$48.91	<b>\$23,680.00</b>	<b>\$678.74</b>
Scott Mehus, Project Manager: \$17,330 (100% salary) Responsible for overall project management, education and outreach programs, co-coordinating the annual survey and supervising trapping and field work. 49% FTE		\$6,160.98			\$4,242.27			\$7,713.28			
Eileen Hanson, Assistant Project Manager: \$2,300 (100% salary) Responsible for co-coordinating project outreach and communications and assisting with project management. 10% FTE		\$355.56			\$0.00			\$1,848.29			
Joe Krumrie, Trapper: \$1,550 (100% salary) for setting and monitoring traps, trap maintenance and field work. 11% FTE		\$0.00			\$1,530.00			\$20.00			
Bryan Hall, Trapping Technician: \$900 (100% salary) Assist with field set-up, maintenance of traps, and care of prey animals. 5%FTE		\$0.00			\$831.36			\$0.00			
Katie Rymer, Education and Outreach Assistant; \$1,600 (100% salary) for assiting with outreach and education efforts, including designing travel display and printed		\$0.00			\$0.00			\$299.52			
<b>Service contracts</b>										<b>\$11,520.00</b>	<b>\$1,750.33</b>
Audubon Minnesota: GPS Data handling and satellite fees				\$5,000.00	\$4,999.67	\$0.33					
Frank Nicoletti: Trapper - To be paid a daily rate of \$250 for days spent actively attempting to trap a golden eagle in SE MN,				\$4,800.00	\$3,150.00	\$1,650.00					
Audubon Minnesota: Create ArcGIS maps of survey and tracking data (\$40/hour, not to exceed 43 hours)				\$1,720.00	\$1,620.00	\$100.00					
<b>Equipment/Tools/Supplies</b>										<b>\$4,500.00</b>	<b>\$165.22</b>
Eagle traps and supplies				\$2,832.77	\$2,685.72	\$147.05					
Trail cameras, batteries and memory cards for use in trapping				\$655.00	\$655.00	(\$0.00)					
Field Communication devices - 2 way radios/walkie-talkies				\$473.00	\$472.67	\$0.33					
Prey animal needs - food, bedding, kennels				\$289.23	\$289.23	\$0.00					
Captured eagle needs - hoods, kenels, materials to attach transmitter				\$250.00	\$232.16	\$17.84					
<b>Capital equipment over \$3,500</b>											
GPS satellite transmitter (2 @ estimated \$3,750 each)				\$7,300.00	\$7,300.00	\$0.00				<b>\$7,300.00</b>	<b>\$0.00</b>
<b>Printing</b>							\$3,500.00	\$3,500.00	\$0.00	<b>\$3,500.00</b>	<b>\$0.00</b>
<b>Travel expenses in Minnesota</b>	\$2,000.00	\$1,629.50	\$370.50	\$3,000.00	\$1,493.00	\$1,507.00	\$2,500.00	\$1,090.50	\$1,409.50	<b>\$7,500.00</b>	<b>\$3,287.00</b>
Mileage for travel to and from survey areas, trap sites and outreach programs, includes travel for contracted trapper (up to 2 round trips from Duluth to Wabasha)											
<b>Other</b>											
Travel display							\$2,000.00	\$1,901.89	\$98.11	<b>\$2,000.00</b>	<b>\$98.11</b>
<b>COLUMN TOTAL</b>	<b>\$8,750.00</b>	<b>\$8,146.04</b>	<b>\$603.96</b>	<b>\$33,320.00</b>	<b>\$29,501.08</b>	<b>\$3,818.92</b>	<b>\$17,930.00</b>	<b>\$16,373.48</b>	<b>\$1,556.52</b>	<b>\$60,000.00</b>	<b>\$5,979.40</b>