

Final Report
SWG Project T-35-P-001
August 2011

PROJECT NUMBER: T-35-P-001

OVERALL PROJECT TITLE: A Plan for the Recovery of the Endangered Barn Owl (*Tyto alba*) in Illinois.

TOTAL PROJECT EFFECTIVE DATES: Objectives 1-4 constitute Segment 1
Segment 1 effective dates as per Amend. #1= 12/30/06 – 06/30/11

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EXECUTIVE SUMMARY

Segment 1 of the “Plan for the Recovery of the Endangered Barn Owl (*Tyto alba*) in Illinois” State Wildlife Grant project T-35-P-1 was conducted from January 2006 – June 2011 and all project objectives were completed. During this time, a recovery team made up of representatives from the Illinois Department of Natural Resources (IDNR), Illinois Endangered Species Protection Board (ESPB), The Nature Conservancy in Illinois, and Illinois Natural History Survey, was convened; a recovery plan was drafted and approved by the IDNR and the ESPB; and, implementation of the plan began. Implementation efforts so far have included evaluation and identification of suitable and priority habitat areas, protection of at least 200 acres of grassland habitat, enhancement/restoration of several thousand acres of grassland habitat, placement of 75 new nest boxes, monitoring of 135 nest boxes, and reporting of 48 new nesting occurrences. Outreach about the project has included posting to the ESPB’s webpage a copy of the recovery plan and an informational brochure entitled “Help Bring Back the Barn Owl”, publishing an article in the IDNR’s *OutdoorIllinois* magazine, and recovery team members presenting talks at meetings of scientific organizations and interest groups and making contact with individual landowners and conservation organizations. These efforts have resulted in support and coordination of activities with the Illinois Audubon Society, the Clifftop Alliance in southwestern Illinois, a volunteer group in central Illinois led by researchers from Illinois Wesleyan University and Illinois State University, and the placement of 25 nest boxes on private properties where suitable habitat exists and landowners are willing to manage it in a manner that is compatible for the barn owl. Beyond the timeframe of the SWG project, the recovery plan calls for a first year and then biennial reviews of accomplishments where the recovery team will produce and post to the ESPB’s webpage progress reports relative to the Prioritized Recovery Strategies identified in the recovery plan. The barn owl has been listed as Illinois-endangered since 1977. The recovery plan recommends that the ESPB evaluate the status of the barn owl and consider a change in status from *Endangered* to *Threatened* when 40 active nest sites distributed among at least 15 counties are reported within a 5-year period. A change in status from *Threatened* to recovered should be considered when 80 active nest sites distributed among at least 30 counties are reported in a 5-year period, and other threats to the population are low. The ESPB reviews the *Illinois List of Endangered and Threatened Species* at least every five years and the next scheduled review will end in 2014.

ACCOMPLISHMENTS

Accomplishment reporting is inserted under each objective or task below through page 5. Also, for this final report, in addition to the SWG grant required reporting items, included at the very end (pages 6-9) is performance reporting of prioritized recovery strategies outputs identified in the *Illinois Barn Owl (Tyto alba) Recovery Plan (2010)*. The following attachments are appended to the report: (1) brochure “Help Bring Back the Barn Owl”; (2) *OutdoorIllinois* article “A Brighter Future for a Bird of the Night”; and, (3) the *Illinois Barn Owl (Tyto alba) Recovery Plan (2010)*.

OBJECTIVES (Objectives 1-4):

1. **Status Assessment/Recovery Planning:** Preparation and completion of a formal statewide Illinois recovery plan incorporating components of the draft recovery strategy for the barn owl previously prepared by various IDNR staff. A contractor will be hired to prepare this document and will be asked to use the IDNR plan for the recovery of the Greater Prairie Chicken (*Tympanuchus cupido pinnatus*) as a template.
2. **Status Assessment:** Identify and document all known barn owl nesting attempts, observations, and reports in the last 10 years.
3. **Status Assessment:** Identify large grassland complex's, counties with significant amounts of CRP grasslands, large concentrations of pasture-lands, large reclaimed strip-mine lands, and other potential habitats in Illinois. Identify focus grassland areas where potential barn owl habitat currently exists.
4. **Recovery:** Implement a barn owl nest box program, concentrating on areas with known breeding pairs, areas with documented observations of barn owls and identified priority large grassland habitats.

APPROACH:

In order to recover this species in Illinois and have a significant impact on its population in the Midwestern United States, a nest box placement and monitoring program; grassland conservation and restoration (including continued management/development of grassland reserves such as: Goose Lake Prairie, Midewin National Tallgrass Prairie, and the Des Plaines Conservation Area); development of working partnerships with farmers and rural landowners to learn and practice more sustainable land stewardship; and public awareness and volunteerism will be the main focus/approach of this project. This "big picture" approach can only benefit the long-term goals of restoring barn owls in Illinois and create important positive "spin-offs" for other grassland species and biodiversity in general.

OBJECTIVE 1. Task is to hire an independent contractor to write a formal statewide recovery plan, incorporating components of the draft recovery strategy for the barn owl previously prepared by various IDNR staff. The contractor will be asked to use the IDNR plan for the recovery of the Greater Prairie Chicken as a template.

Objective 1 Accomplishments:

COMPLETED. The "Illinois Barn Owl Recovery Plan" became final in November 2010 and, as per grant requirement, was posted to the Illinois Endangered Species Protection Board's (ESPB) webpage (<http://www.dnr.state.il.us/ESPB/recovery.html>) of the IDNR's website in December 2010. The plan was actually completed in July 2010 (shortly after the June 30, 2010 closing of the planning phase), but it took a few months to secure required signatures largely because the ESPB only meets quarterly. A copy of the plan was submitted as an attachment to the 2010 annual report and for ease of reference a copy is also included with this final report.

OBJECTIVE 2. Identify and document all known barn owl nesting attempts, observations, and reports in the last 10 years.

Task 1. Utilizing the Natural Heritage Biotics 4 Database, National Audubon's Spring and Christmas Bird Count Data and other various sources develop a database that will provide an accurate distribution map of breeding pairs and observed individuals in Illinois.

Objective 2, Task 1, Accomplishments:

COMPLETED. As part of the data compilation for writing the plan, multiple sources were queried for barn owl nesting data. All of this data was entered into the Natural Heritage Biotics 4 Database. A distribution map of historic and recent breeding occurrences and individuals was included in the plan

(see Figures 4 and 5 in the *Illinois Barn Owl Recovery Plan. November 2010.*). NOTE - This data and future occurrence data will continue to be maintained by this same database.

Task 2. Conduct site visits to all locations where barn owls have been observed within the past 10 years to document presence or absence. Documentation may include; observations of individuals, nesting birds, pellet groups, feathers, whitewash, or other evidence.

Objective 2, Task 2, Accomplishments:

COMPLETED. Many locations were checked by contacting landowners and did not/will not require site visits. In 2009 and 2010, the team checked over 59 nesting occurrences/boxes and placed 42 new boxes. Surveys during 2010 resulted in documenting 21 active nests in 17 counties. Surveys through June 2011, checked 75 box locations and nesting occurrences, 32 new boxes were placed, and 19 active nesting records (14 in nest boxes) in at least 11 counties were documented.

Task 3. Implement a public information request program to attempt to locate additional nesting pairs or individuals. Conduct follow-up of reliable reports.

Objective 2, Task 3, Accomplishments:

COMPLETED. The recovery team published the article “A Brighter Future for a Bird of the Night” about the project and recovery activities for the species in the June 2011 IDNR magazine *Outdoor Illinois* and posted to the IL Endangered Species Protection Board’s webpage (<http://www.dnr.state.il.us/ESPB/recovery.html>) a brochure entitled “Help Bring Back the Barn Owl” that advises what to do and who to contact if landowners have questions about the recovery plan and activities, reporting barn owl occurrences, placing barn owl boxes, and reporting injured barn owls. Copies of both items are included with this final report. The recovery team has also confirmed support from and coordination of activities with the Illinois Audubon Society, the Clifftop Alliance volunteer group in southwestern Illinois, and another volunteer group in central Illinois led by researchers from Illinois Wesleyan University and Illinois State University.

Task 4. Utilizing available databases, surveys, site visits and other reports or sources, complete Objective 2 and develop a database.

Objective 2, Task 4, Accomplishments:

COMPLETED. This task has been completed via the Natural Heritage Biotics 4 database. The Natural Heritage Biotics 4 Database already tracks this information. All occurrence data collected by this project will be maintained by this same database. Additionally, the barn owl recovery team also developed and is maintaining a database of all nest boxes. NOTE - This data and future occurrence data will continue to be maintained by the same databases.

OBJECTIVE 3. Identify large grassland complexes, counties with significant amounts of CRP grasslands, large concentrations of pasture-lands, large reclaimed strip-mine lands, and other potential habitats in Illinois. Identify focus grassland areas where potential barn owl habitat currently exists.

Task 5. Identify focus areas, where potential barn owl habitats currently exists or could be developed.

Objective 3, Task 5, Accomplishments:

COMPLETED. (See Figures 8 and A2 in the *Illinois Barn Owl Recovery Plan. November 2010.*) As part of the data compilation for writing the plan, GIS analysis of landcover data, known barn owl nesting

occurrences, and seasonal climate data, was performed. These analyses were included in the recovery plan and Appendix II of the recovery plan provides guidance for evaluating habitats and sites (page 67;

Guidance and suggested scoring of various factors affecting the feasibility and probability of success of barn owl conservation. Conservation actions in areas scoring ≥ 7 are most likely to benefit barn owls.)

Task 6. Utilizing available databases and published reports, complete Objective 3 and develop a database.

Objective 3, Task 6, Accomplishments:

COMPLETED. As part of the data compilation for writing the plan, GIS analysis of landcover data, known barn owl nesting occurrences, and seasonal climate data, was performed. These analyses were included in the recovery plan and the data will be maintained by the Natural Heritage Biotics 4.

NOTE - This data and future occurrence data will continue to be maintained by this same database.

OBJECTIVE 4. Implement a barn owl nest box program, concentrating on areas with known breeding pairs, areas with documented observations of barn owls and identified priority large grassland habitats. Progress on Objective 4 can only be made after Objective 2 and Objective 3 is met by completing Tasks 1 through 6.

Task 7. Conduct a site visit to all known previous nest box locations to assess location and condition of the existing nest box.

Objective 4, Task 7, Accomplishments:

COMPLETED. Many locations were checked by contacting landowners and did not/will not require site visits. In 2009 and 2010, the team checked over 59 nesting occurrences/boxes and placed 42 new boxes.

Surveys during 2010 resulted in documenting 21 active nests in 17 counties. Surveys through June 2011, checked 75 box locations and nesting occurrences, 32 new boxes were placed, and 19 active nesting records (14 in nest boxes) in at least 11 counties were documented.

Task 8. Implement a barn owl nest box program, concentrate the placement of nest boxes in areas with known breeding pairs, observed birds or in priority grassland areas with free standing structures.

Objective 4, Task 8, Accomplishments:

COMPLETED. The recovery plan calls for placement of 25 boxes/year and checking those boxes as well as 25 existing boxes/year. The team used Appendix II in the recovery plan (Page 67; *Guidance and suggested scoring of various factors affecting the feasibility and probability of success of barn owl conservation. Conservation actions in areas scoring ≥ 7 are most likely to benefit barn owls.*) in identifying areas for box placement. For this recovery plan objective, the team exceeded the prescription in 2010 by placing 1.5 times the annually required number of boxes, and also in 2011 by placing 1.3 times the annually required number of boxes through June. Additionally, the barn owl recovery team developed and is maintaining a database of all nest boxes that includes field for location and condition of boxes.

Task 9. Implement a barn owl nest box program on large grasslands where there are no structures available, utilizing free-standing (pole mounted) nest box structures: available nest box designs may need to be modified.

Objective 4, Task 9, Accomplishments:

COMPLETED. In 2010, the Illinois Audubon Society donated 10 pole mounted boxes and the IDNR purchased 10 pole mounted boxes, which the team placed and monitoring in 2011 documented nesting

attempts in 6 of those structures. In 2011, the team did not have funds sufficient to buy many more pole mounted boxes and was only able to place one additional pole mounted. We plan to purchase and use more of this nest box design during future years of implementing the recovery plan to maximize nesting opportunities in grassland areas that are void of structures or trees.

Task 10. Monitor nest boxes 1-2 times per year to determine presence or absence and perform maintenance on nest boxes.

Objective 4, Task 10, Accomplishments:

COMPLETED. During the 2010 field season, 42 boxes were monitored and through June 2011, 70 boxes were monitored. Many locations were and will be checked by contacting landowners.

End SWG T-35-P-001 Accomplishment Reporting

Performance Reporting of Prioritized Recovery Strategies Outputs Identified in the Illinois Barn Owl (*Tyto alba*) Recovery Plan (2010). Note – Most reporting is for the first year of recovery plan implementation (2011), but some reporting includes measures from years prior to completion of the plan.

Prioritized Recovery Strategies

1. Deploy and monitor nest boxes within plausible nesting areas.
2. Do not interfere with young barn owls during fledging.
3. Expand dedicated grassland conservation areas.
4. Encourage land use practices that support populations of voles (*Microtus* spp.) and other small mammals.
5. Build public awareness of barn owls & support for barn owl conservation.
6. Research of barn owl ecology & behavior

Recovery Strategy 1: Deploy and monitor nest boxes within plausible nesting areas. The near-term objective of this strategy is to increase the number of known barn owl nests in Illinois. Longer-term, monitoring nest boxes will serve as a proxy for monitoring barn owl population changes.

Outputs:

a. Install at least 25 new nest boxes per year in plausible nesting areas (Years 1-5). Focus the deployment of additional nest boxes in the vicinity of occupied nest boxes or incidentally-discovered barn owl nests to help define the extent of local populations. Nest box locations scoring >7 on factors described in Appendix II are most likely to benefit barn owls.

Performance Reporting

Prior to 2009 – IDNR had placed 107 boxes in 16 counties.

2009 – The barn owl recovery team placed one new box in one county.

2010 – The barn owl recovery team placed 42 new boxes (20 of which were free-standing) in 13 counties, bringing the total number of counties with boxes to 19.

2011 (through June) – Appendix II of the recovery plan provides guidance for evaluating habitats and sites (page 67; *Guidance and suggested scoring of various factors affecting the feasibility and probability of success of barn owl conservation. Conservation actions in areas scoring ≥ 7 are most likely to benefit barn owls.*) The barn owl recovery team, IDNR staff, and volunteers, used this guidance in placing 32 new boxes. Two new counties were added and historic boxes were relocated for a previously unrecorded county, bringing the total number of counties with boxes to 22.

b. Revisit an additional 25 nest boxes (deployed prior to 2009) to find evidence of use (pellets, feathers), determine nest box condition, and replace if damaged/destroyed as appropriate, based on local conditions (Years 1-5).

Performance Reporting

Prior to 2009 – IDNR had placed 107 boxes in 16 counties. There is no record of systematic box monitoring prior to 2009.

2009 – The barn owl recovery team monitored 14 existing boxes for activity.

2010 – The barn owl recovery team monitored 51 existing boxes for activity.

2011 (through June) – The barn owl recovery team, IDNR staff, and volunteers, monitored 70 existing boxes for activity.

c. Monitor nest boxes considered in (a) and (b) above annually (50 boxes in Year 2 and an additional 50 boxes/year until 250 boxes are monitored annually in Year 6 and after).

Performance Reporting

Prior to 2009 – There is no record of systematic box monitoring prior to 2009.

2009 – The barn owl recovery team monitored 14 boxes for activity.

2010 – The barn owl recovery team monitored 51 existing boxes for activity.

2011 (through June) – The barn owl recovery team, IDNR staff, and volunteers, monitored 70 existing boxes for activity.

d. Report evidence of barn owl nesting in nest boxes and other situations to the Illinois Department of Natural Resources Biotics 4 database (Annual).

Performance Reporting

Prior to 2009 – For the period of 1990-2009, there were 38 barn owl nesting records from 31 counties.

2009 – Initial monitoring efforts by the recovery team documented 8 nesting records in 5 counties.

2010 – The barn owl recovery team documented 21 nesting records in 17 counties.

2011 (through June) – The barn owl recovery team, IDNR staff, and volunteers, documented 19 nesting records in at least 11 counties.

Recovery Strategy 2: Do not interfere with young barn owls during fledging.

Output:

a. Communicate to field biologists in the Illinois Department of Natural Resources, county forest preserve districts, other agencies or organizations, and to wildlife rehabilitators on the appropriate handling of situations when nestling or fledgling barn owls are discovered (Year 1). Recommend that not interfering with nesting or fledging is the best option, that barn owls only be captured when they are in immediate danger and moved to the nearest safe location, and that only injured barn owls are taken to wildlife rehabilitators. Biologists should give the same advice to persons discovering nestling or fledgling barn owls. Any barn owl brought to a wildlife rehabilitator should be reported to the Illinois Department of Natural Resources. Any injured barn owl that is rehabilitated should be released near the site where it was initially found.

Performance Reporting

In 2011, the recovery team published to the Illinois Endangered Species Protection Board's webpage a brochure entitled "Help Bring Back the Barn Owl" that advises what to do and who to contact if landowners have questions about the recovery plan and activities, reporting barn owl occurrences, placing barn owl boxes, and reporting injured barn owls.

Recovery Strategy 3: Expand dedicated grassland conservation areas.

Outputs:

a. Protect additional areas (and restore to grassland habitat if necessary) at dedicated grassland conservation areas, as opportunities become available, averaging 200 acres protected per year (Years 1-5). Protection may include acquisition, permanent easement, or dedication as a Nature Preserve or Land & Water Reserve.

Performance Reporting

In 2011, the Illinois Audubon Society acquired the 200-acre Maxine Loy Estate, which provides special protection to additional grassland habitat associated with the existing 12- Mile Prairie Natural Area Inventory Site. Three barn owl nest boxes were placed in existing barns on this property in 2011. The IDNR also approved a FY2012 \$7,000 Wildlife Preservation Fund grant for habitat restoration of the property.

- b. Install additional barn owl nest boxes at grassland conservation areas (Annual).

Performance Reporting

In 2010, 26 barn owl nest boxes were placed at IDNR and partner grassland conservation areas. Through June 2011, nine barn owl nest boxes were placed at IDNR and partner grassland conservation areas.

- c. Monitor barn owl nest boxes at grassland conservation areas (Annual).

Performance Reporting

In 2010, four barn owl nest boxes were monitored at IDNR and partner grassland conservation areas. Through June 2011, 34 barn owl nest boxes were monitored at IDNR and partner grassland conservation areas.

- d. Report evidence of barn owl nesting in nest boxes at grassland conservation areas to the Illinois Department of Natural Resources Biotics 4 database (Annual).

Performance Reporting

Barn owl recovery team members and IDNR staff assisting with the project, as well as cooperating partner and volunteer groups, are reporting to the IDNR Biotics 4 database evidence of barn owl nesting from all locations, including at IDNR and partner grassland conservation areas.

Recovery Strategy 4: Encourage land use practices that support populations of voles (*Microtus spp.*) and other small mammals.

Outputs:

- a. Establish or enhance (through prescribed fire, re-seeding, invasive species control, improved grazing practices, or mechanical disturbance) 2,000 acres of grassland on private lands each year (Years 1-5). Acreages established to grasslands through Farm Bill programs (e.g., Conservation Reserve Program) may greatly exceed this objective, but should be focused in areas most likely to benefit barn owls (i.e., locations scoring >7 on factors described in Appendix II).

Performance Reporting

IDNR administered contracts for grassland habitat enhancement work on private lands totaling approximately 8,800 acres in the USDA Conservation Stewardship Program (from 2008 – 2010) and 670 acres in the USDA Landowner Incentive Program (from 2007 – 2010). Through 2010, the IDNR also assisted with enrolling approximately 5,880 acres across 21 counties of the Grand Prairie Project Area and approximately 640 acres 7 counties of the Southern Till Plain Project Area in the USDA State Acres for Wildlife Enhancement program. This program establishes new grassland and enhances existing grassland habitat.

- b. Enhance (through prescribed fire, re-seeding, invasive species control, improved grazing practices, or mechanical disturbance) 1,000 acres of grassland on public lands each year (Years 1-5). Habitat enhancement in locations scoring >7 on factors described in Appendix II are most likely to benefit barn owls.

Performance Reporting

2011 – IDNR conducted 1,100 acres of grassland prescribed burns on IDNR properties in Region 5 during 2011.

Recovery Strategy 5: Build Public Awareness of Barn Owls & Support for Barn Owl Conservation.

Outputs:

- a. Develop an informational brochure on barn owls and barn owl conservation in Illinois for distribution to the public (Year 1). A print version could be available for venues such as the Illinois State Fair and the U. S. Department of Agriculture's county Service Centers. Post an electronic version on the Illinois Department of Natural Resources' and Illinois Endangered Species Protection Board's websites.

Performance Reporting

2011 – The recovery team published to the Illinois Endangered Species Protection Board's webpage a brochure entitled "Help Bring Back the Barn Owl" that advises what to do and who to contact if landowners have questions about the recovery plan and activities, reporting barn owl occurrences, placing barn owl boxes, and reporting injured barn owls. Additionally, Dr. Jeff Walk, the primary author of the recovery plan, gave a presentation about the recovery plan and efforts to the Illinois Chapter of the Wildlife Society in the spring of 2011.

- b. Publish biennial reports on barn owl recovery progress on the Illinois Department of Natural Resources' and Illinois Endangered Species Protection Board's websites (Years 1, 3, 5).

Performance Reporting

2011 – The recovery team is in the process of developing its first-year report that will be published to the ESPB webpage sometime near the end of calendar year 2011.

- c. Publish an article on barn owls and barn owl conservation in Illinois through a popular outlet, such as *OutdoorIllinois* (Year 2).

Performance Reporting

2011 – The barn owl recovery team published the article "A Brighter Future for a Bird of the Night" in the June, 2011, IDNR *OutdoorIllinois* magazine.

Recovery Strategy 6: Research of Barn Owl Ecology & Behavior.

Outputs:

- a. Evaluate the effectiveness of playback recordings to attract barn owls to unoccupied nest boxes (Year 1-3). Attempt at >1 site per year.

Performance Reporting

In the spring of 2011, an Illinois Audubon Society contract employee working at IDNR's Prairie Ridge State Natural Area, conducted some playback recording surveys with no success at several barns in Edwards County, including one barn where an owl had been observed. A more robust effort is planned in upcoming years.

- b. Solicit volunteers from at least 10 MOON routes in the southern ½ of Illinois (where barn owls are most likely to be encountered) to add barn owl vocalizations to the protocol (Years 1-5). If detections exceed >1 barn owl/10 routes/year, expand the protocol to include barn owls on other routes.

Performance Reporting

There are no accomplishments toward this output to date.