

ILLINOIS LIST OF ENDANGERED AND THREATENED ANIMAL SPECIES

5-YEAR REVIEW AND REVISION ENDING IN 2014

Public Hearing Documents: Individual species reviews and select Board discussion and determinations for species with ESPB preliminary approval for changes in listing status, addition to, or removal from, the Illinois List.

Public Hearing Documents:

Individual species reviews and select Board discussion and determinations for species with ESPB preliminary approval for changes in listing status, addition to, or removal from, the Illinois List - Animals.

Preliminary approval confirmed at the 161st meeting, 02/21/2014

Presented in alphabetical order, by genus and species, in the following taxonomic groups:

Fish
Amphibians
Reptiles
Birds
Mammals
Invertebrates

Production Note: This document was produced partly using “screen grab” of sections from cited ESPB meeting minutes in order to retain section-specific formatting and reduce formatting complications that can result from using “cut-and-paste”. The production value of “screen grab” varies in quality; readers can refer to cited ESPB meeting minutes (accessible on the ESPB’s website at <http://www.dnr.illinois.gov/ESPB/Pages/MeetingAgendaMinutes.aspx>) to view the original, higher-quality, respective sections.



ILLINOIS ENDANGERED SPECIES PROTECTION BOARD

One Natural Resources Way, Springfield, IL 62702 - 1271, (217) 785-8687; FAX (217) 785-2438; www.dnr.illinois.gov/esp/

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Presented by taxonomic group and then in alphabetical order, by genus and species

Scientific Name	Common Name	Begins Page
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<i>Crystallaria asprella</i>	Crystal Darter	9
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<i>Lethenteron appendix</i>	American Brook Lamprey	23
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none		
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Fish

Anguilla rostrata (American Eel) - Proposed Action: add as threatened

Reviewed at: 157th meeting, 02/08/2013; data confirmation at 161st meeting, 02/21/2014; meeting minutes may contain additional information and discussion

Illinois Endangered Species Protection Board (ESPB) required 5-year review of the Illinois List of Endangered and Threatened Species (Illinois List) ending in 2014:

Form for ESPB Technical Expert Consultant (ESPB TEC) recommendation for adding a species to the Illinois List of Endangered and Threatened Species

Prepared by:
Anne Mankowski, Director
Illinois Endangered Species Protection Board
One Natural Resources Way
Springfield, IL 62702-1271
Office phone: 217-785-8687
Email: anne.mankowski@illinois.gov
March 2012

Complete one form for each species nomination. Fill-in all sections to the best of your ability with available information. Return the form and copies of attachments to Anne Mankowski.

A.

Date: 30 November 2012

B. Proposer Information

Name: Leon C. Hinz Jr.

Address: One Natural Resources Way, Springfield, IL 62702-1271

Phone number: (217) 785-8297

Email address: leon.hinz@illinois.gov

Title: Stream Ecologist

Institution/Organization affiliation: University of Illinois/ Prairie Research Institute/ Illinois Natural History Survey

C. The scientific and common name, including nomenclature citation, of any species involved (the ESPB may elect to use the common name identified by NatureServe).

Scientific Name: *Anguilla rostrata* (Lesueur, 1821)

Common Name: American Eel

Nomenclature Citation:



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D. Identification of the specific listing status recommended – endangered or threatened – and reference to specific ESPB listing criteria that are affecting the species, including where these factors are acting upon the species, the magnitude and imminence of these factors, and whether, either singly or acting in combination, these factors may cause the species to be an endangered or threatened species (endangered = at risk of extinction in the wild in Illinois; **threatened = likely to become endangered in the wild in Illinois within the foreseeable future**).

Recommend listing as endangered _____

Recommend listing as threatened X

Identify which ESPB listing criteria are affecting the species and for which your proposal provides supporting evidence: **Statewide distribution of American Eel has declined greatly over the past decade. The American Eel is currently being evaluated for Federal listing.**

1. Species or subspecies designated as federally endangered or threatened.
2. Species proposed for Federal Endangered or Threatened status that occurs in Illinois.
3. **Species which formerly were more widespread in Illinois but have shown significant declines which may lead to extirpation from the State due to habitat destruction, collecting, or other pressures resulting from the development of Illinois. This includes species which:**
 - a. are experiencing reproductive impairment;
 - b. **have experienced a range reduction;**
 - c. occur in reduced numbers even though range or number of populations remains steady.
4. **Species which are low in numbers and for which known or potential threats are likely to cause significant declines, including:**
 - a. species which exhibit very restricted geographic ranges, of which Illinois is a part;
 - b. **species which exhibit restricted habitats or low populations in Illinois;**
 - c. species which are significant disjuncts in Illinois, i.e., the Illinois population is far removed from the rest of the species' range.

E. Biological information on the species (including habitat and life-history traits) that is relevant to determining whether a species may be endangered or threatened.

American Eel (*Anguilla rostrata*) ... American eel are associated with deep pools and backwater habitats with mud bottoms generally from large rivers and have a complex life history that includes a marine and freshwater phases and a long spawning migration to the Sargasso Sea in the western Atlantic Ocean. Some larvae develop in estuaries but others move into freshwaters where they reside for years prior to maturation and migration. In freshwaters eels associate with cover during daylight hours and are known to borrow into mud and silt making them difficult to collect using standard fisheries sampling techniques. The American Eel has a NatureServe Conservation Status ranking in Illinois of G4S2 indicating that their assessment ranks the species as Imperiled in the State of Illinois (Young 2011; NatureServe 2012, Jeannie Barnes personal communication).

F. A detailed narrative justification for the recommended measure, describing, based on available information, past and present numbers and distribution of the species involved (location information should include lat/long coordinates and other information necessary to add a record to the Natural Heritage (Biotics 4) Database) and any threats faced by the species; it is most helpful if this narrative contains an analysis of the information presented.



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The State Wildlife Grant program recently funded a project to revise and update the Illinois list of fish species in greatest need of conservation. The study combined information on fish location from seven separate databases including collections data from INHS (Illinois Natural History Survey Fisheries Collection) and UMMZ (University of Michigan Museum of Zoology), and monitoring data from IDNR Fisheries Division (FAS Streams, FAS Lakes), LTEF (Long term Electrofishing), LTRMP (Long term Resource Monitoring Program), and the IDNR BIOTICs databases. This justification is based on the results of that study (Metzke et al. 2012).

Our analysis suggests that the distribution of the American Eel has declined greatly in the past ten years. Records from the Illinois Department of Natural Resources fisheries database (Illinois Fisheries Analysis System or FAS) contained only 3 locations where American Eel were collected during sampling efforts between 2000-2010 while the species was observed at 62 locations during 1977-1999 sampling efforts. Our analysis using statewide data found a >70% reduction in the number of HUC8 watersheds where the American Eel was found when comparing recent records (2000-2010, 7 HUC8 watersheds) and earlier records (1977-1999, 25 HUC8 watersheds). While it is still found in parts of the major rivers bordering Illinois it has not been recorded in other parts of the Illinois River System (including tributaries), the Kaskaskia River, the Rock River, the Little Wabash River, or the Embarras River systems in the past 10+ years (Metzke et al. 2012).

The major threat to the American Eel in Illinois is barriers to migration. The American eel was petitioned for listing as a threatened species under the Endangered Species Act in 2010 (American_eel_petition_100430). The result of the 90 day review indicated that the "petition presents substantial scientific or commercial information indicating that listing this species may be warranted" initiating further review of the species status (American_eel_2011-25084). This process is ongoing. Before the conclusion of the project all available records were provided to Tara Kieninger (IDNR, Natural Heritage Biotics database manager) and added to the database.

G. Information on regulatory protections and conservation activities initiated or currently in place that may or may not protect the species or its habitat.

American Eel is a Species in greatest need of conservation in Illinois (IDNR 2005).

H. Information regarding the status of the species over all or a significant portion of its range.

NatureServe rank for American Eel in Illinois is G4S2 and similarly ranked in Wisconsin, Indiana, Ohio, West Virginia (NatureServe2012_American_Eel.pdf). The American Eel is state threatened in Ohio and threatened in Ontario, Canada.

I. Supporting documentation in the form of copies of reprints of pertinent publications, data, reports or letters from authorities, and maps.

The ESPB may consult information already in our files for a subject species, but will only conduct additional research as time and resources allow when evaluating whether a listing recommendation presents substantial information indicating listing may be warranted. Therefore, to ensure that we will consider any supporting documentation you reference, you should provide either electronic or hard copies of any supporting materials cited in the recommendation, or valid links to public websites where the cited materials can be accessed; these materials should be in English. If you do not, we may at our option contact you to obtain supporting documentation. However, if you do not provide the supporting documentation, and it is not otherwise readily available in our files, we will be unable to consider this information in making our finding. In addition, we request that you provide literature citations that are specific enough to allow us to easily locate within the documentation the particular information cited in the petition, including page numbers or chapters, as applicable.



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Supporting documentation on American Eel has been provided to Anne Mankowski.

Provide specific citations here:

American_eel_petition_100430. Petition to list the American Eel (*Anguilla rostrata*) as a threatened species under the endangered species act. Submitted by: Council for Endangered Species Act Reliability, April 30, 2010.
American_eel_2011-25084. Endangered and Threatened Wildlife and Plants: 90-Day finding on a Petition to List the American Eel as Threatened. 50 CFR Part 17 [Docket No. FWS-R5_ES-2011-0067; 92210-0-0008-B2].
IDNR. 2005. The Illinois Comprehensive Wildlife Conservation Plan & Strategy. Version 1.0. Illinois Department of Natural Resources, Springfield, IL. 353pp.
Metzke, B.A. L. C. Hinz Jr, and A. C. Hulfin. 2012. Status Revision and Update for Illinois' Fish Species in Greatest Need of Conservation. Final Report to the Illinois Department of Natural Resources. Illinois Natural History Survey Technical Report 2012/19.
Young, B. 2011. Patterns and Trends in State Designation of SGNC Species. Technical report prepared by NatureServe for the United States Geological Survey Biological Informatics Program. 25p.

General information concerning the life history and habitat is available here:

Hubbs, C.L. and K.F. Lagler. 2004. Fishes of the Great Lakes Region. Revised Edition. (Revised by G.R. Smith). The University of Michigan Press, Ann Arbor. 276pp., 32 color plates.
Scott, W.B. and E.J. Crossman. 1973. Freshwater Fishes of Canada. Bulletin 184, Fisheries Research Board of Canada, Ottawa. 966 pp.
Smith, P.W. 1979. The Fishes of Illinois. University of Illinois Press, Urbana and Chicago. 314pp.

Provide a list of attachments here:

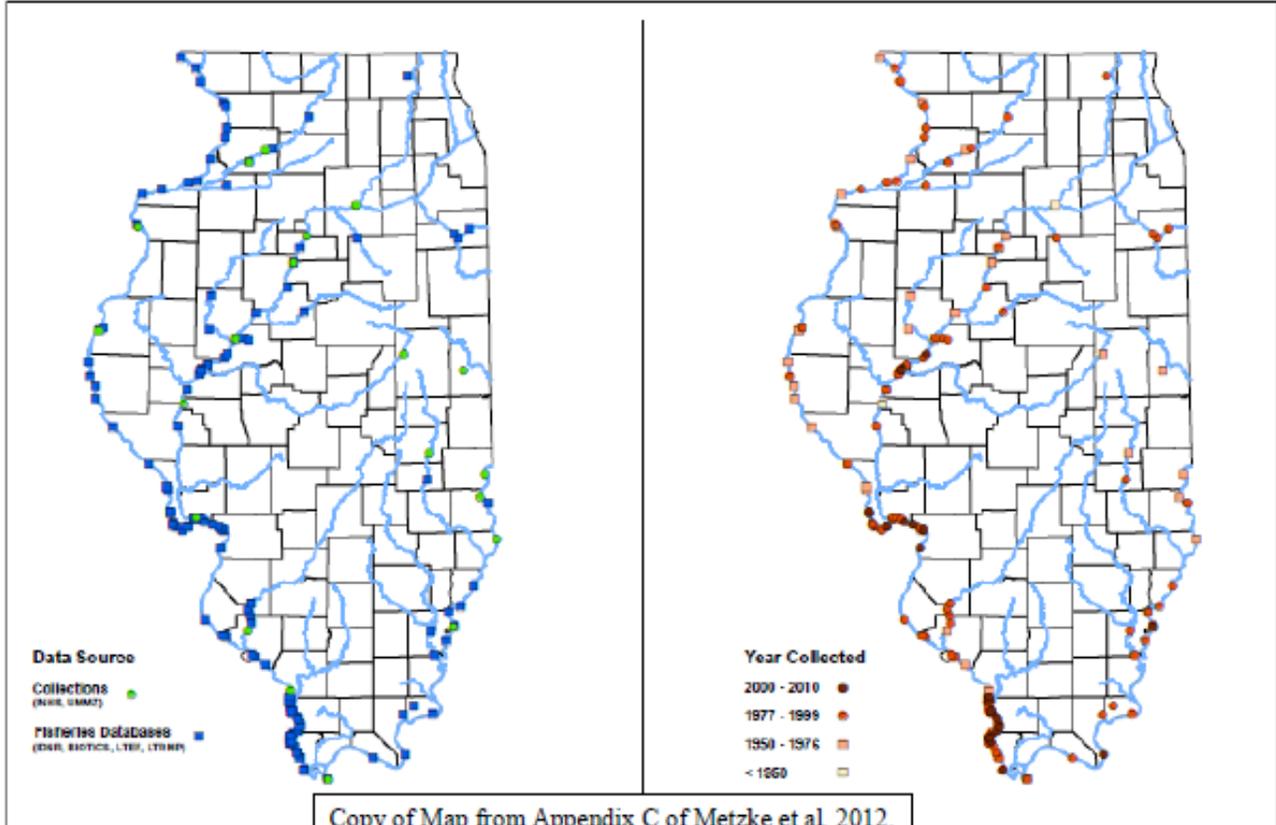
American_eel_petition_100430. Petition to list the American Eel (*Anguilla rostrata*) as a threatened species under the endangered species act. Submitted by: Council for Endangered Species Act Reliability, April 30, 2010.
American_eel_2011-25084. Endangered and Threatened Wildlife and Plants: 90-Day finding on a Petition to List the American Eel as Threatened. 50 CFR Part 17 [Docket No. FWS-R5_ES-2011-0067; 92210-0-0008-B2].
MAP_AmericanEel2012.pdf ... Copy of Map from Appendix C of Metzke et al. 2012.
Metzke, B.A. L. C. Hinz Jr, and A. C. Hulfin. 2012. Status Revision and Update for Illinois' Fish Species in Greatest Need of Conservation. Final Report to the Illinois Department of Natural Resources. Illinois Natural History Survey Technical Report 2012/19.
NatureServe 2012. NatureServe Explorer Summary Species Factsheet on *Anguilla rostrata* (DeKay, 1842).
Young, B. 2011. Patterns and Trends in State Designation of SGNC Species. Technical report prepared by NatureServe for the United States Geological Survey Biological Informatics Program. 25p.



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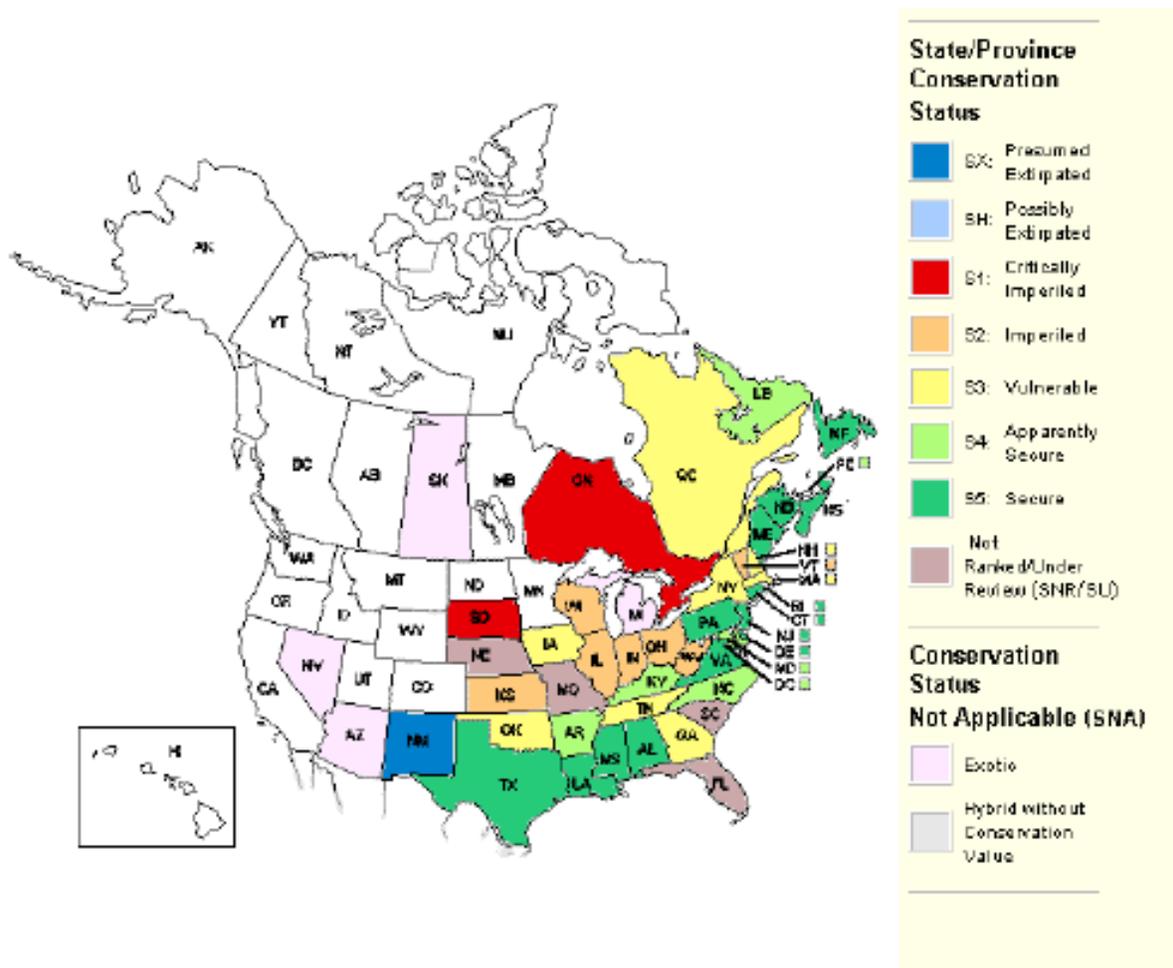
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 **American eel (*Anguilla rostrata*)** 



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NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed date unknown, 2012).

Preliminary listing decision summary from agenda item 11 of the 157th meeting, 02/08/2013

In the review of multiple species' recommendations during the agenda item discussion, Ms. Mankowski made recommendation for adding *Anquillera rostrata* (American Eel) as an Illinois Threatened species. Dr. Walk **moved** to approve the recommendation, Ms. Ross seconded the motion, and it was **approved** unanimously.



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Crystallaria asprella (Crystal Darter) - Proposed Action: add as threatened

Reviewed at: 161st meeting, 02/21/2014; meeting minutes may contain additional information and discussion

**Illinois Endangered Species Protection Board (ESPB) required 5-year review of the
Illinois List of Endangered and Threatened Species (Illinois List) ending in 2014:**

**Nomination Form for recommending addition of a species to the Illinois List of Endangered and Threatened
Species**

Form prepared by:
Anne Mankowski, Director
Illinois Endangered Species Protection Board
One Natural Resources Way
Springfield, IL 62702-1271
Office phone: 217-785-8687
Email: anne.mankowski@illinois.gov
March 2012

Complete one form for each species nomination. Fill-in all sections to the best of your ability with available information. Return the form and copies of attachments to Anne Mankowski.

A.

Date: 8 January 2014

B. Proposer Information

Name: Christopher A. Taylor

Address: 1816 S. Oak, Champaign, IL 61820

Phone number: 217-244-2153

Email address: ctaylor@inhs.illinois.edu

Title: Curator of Fishes, Senior Research Scientist

Institution/Organization affiliation: Illinois Natural History Survey, University of Illinois Urbana-Champaign

C. The scientific and common name, including nomenclature citation, of any species involved (the ESPB may elect to use the common name identified by NatureServe).

Scientific Name: *Crystallaria asprella*

Common Name: Crystal Darter

Nomenclature Citation: Jordan, D. S. 1878. A catalogue of the fishes of Illinois. Illinois State Laboratory of Natural History Bulletin 1(2): 37-70.



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D. Identification of the specific listing status recommended – endangered or threatened – and reference to specific ESPB listing criteria that are affecting the species, including where these factors are acting upon the species, the magnitude and imminence of these factors, and whether, either singly or acting in combination, these factors may cause the species to be an endangered or threatened species [endangered = at risk of extinction in the wild in Illinois; threatened = likely to become endangered in the wild in Illinois within the foreseeable future].

Recommend listing as endangered X

Recommend listing as threatened

Identify which ESPB listing criteria are affecting the species and for which your proposal provides supporting evidence:

- 3. Species which formerly were more widespread in Illinois but have shown significant declines which may lead to extirpation from the State due to habitat destruction, collecting, or other pressures resulting from the development of Illinois. This includes species which:
 - b. have experienced a range reduction;
- 4. Species which are low in numbers and for which known or potential threats are likely to cause significant declines, including:
 - b. species which exhibit restricted habitats or low populations in Illinois;

E. Biological information on the species [including habitat and life-history traits] that is relevant to determining whether a species may be endangered or threatened.

The Crystal Darter is known to occur in runs and riffles of large creeks and rivers with substrates of clean sand or gravel. Water depths at which the species has been encountered is not available. Reproductive activities of the species have not been recorded in Illinois waters. In Alabama, spawning occurs from late February to mid-April in water temperatures of 12 to 15° C (Boschung and Mayden 2004). A gravid female Crystal Darter was collected in Wisconsin in June. Spawning in Alabama occurs when females move into shallower (60 – 90 cm) side channels of rivers. Males spawn with females while they are partially buried in the sand. The fertilized eggs are adhesive and become attached to sand and gravel. Boschung and Mayden (2004) report that Crystal Darters occupy deeper water during the day and move into shallower water at night to feed on drifting aquatic insects.

F. A detailed narrative justification for the recommended measure, describing, based on available information, past and present numbers and distribution of the species involved (location information should include lat/long coordinates and other information necessary to add a record to the Natural Heritage (Biotics 4) Database) and any threats faced by the species; it is most helpful if this narrative contains an analysis of the information presented.

Currently listed as Extirpated by the IL ESPB, fieldwork conducted over the past 13 years has indicated that the Crystal Darter is extant, but still rare in the Mississippi River bordering Illinois. On 6 June 1998, one Crystal Darter was collected from a side channel of the River between river miles 77.7 and 79.3, Union Co. (lat. longs unavailable) (Stewart et al. 2003). On 9 June 2004 another individual was collected from the River at Fickeyne Chute, Alexander Co. (37.3219, -89.4303) (Stewart et al 2003). More northern records for the species include the July 2013 collection of one individual from river mile 163, Monroe Co. (38.4323 -90.2930) and the 8 October 2009 collection of one individual from river mile 306, Rock Island Co. (41.7264 -90.3124). These specimens have had their identifications confirmed by taxonomic experts and are vouchered into museum collections (SIUC and INHS).



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Additionally, the Missouri Department of Conservation has reported that two Crystal Darters have been collected from Mississippi River between Missouri and Illinois in recent years (D. Herzog, MDOC per. com.). They report one specimen collected from river mile 48, across from Alexander Co., (lat. longs. not available) on 10 June 2010 and one from river mile 78, across from Union Co., (lat. longs. not available) on 3 April 2009.

Small-bodied benthic fishes that occur in wide, deep rivers are more difficult to capture with traditional gear types than larger fishes. They are more tolerant of electrical gradient fields and/or stay submerged when electroshocked. Their small body size makes them immune to capture with mesh sizes most commonly used in most hoop or gill nets. The fact that six specimens have been captured in water along Illinois' border in the past 13 years using traditional gear types is strong evidence that these records of Crystal Darters are not waif individuals migrating from out of state upstream or downstream populations. The likelihood of capturing those few waif individuals is extremely low given the species' low detectability. Rather, these records suggest that the species permanently occurs in the Mississippi River along the Illinois border in small population. As such, I believe that listing the species as Endangered is warranted and future targeted field work is needed to determine the species' true population size in Illinois.

G. Information on regulatory protections and conservation activities initiated or currently in place that may or may not protect the species or its habitat.

None known

H. Information regarding the status of the species over all or a significant portion of its range. The Crystal Darter is considered a species of Special Concern across its North American range (Williams et al. 1989). It is historically known to occur in isolated regions from the upper Mississippi River drainage to the Gulf Coast and east to the Kanawha River drainage of West Virginia. It is believed to be extirpated from Ohio, Kentucky, and Tennessee and is no longer abundant in Missouri (Boschung and Mayden 2004). It is still known to occur with some regularity in southern Alabama, northern Wisconsin and in West Virginia. The species is listed as State Endangered in Wisconsin. Increased siltation levels in the middle Mississippi River drainage has been implicated for its population declines in large rivers of that region.

I. Supporting documentation in the form of copies of reprints of pertinent publications, data, reports or letters from authorities, and maps.

The ESPB may consult information already in our files for a subject species, but will only conduct additional research as time and resources allow when evaluating whether a listing recommendation presents substantial information indicating listing may be warranted. Therefore, to ensure that we will consider any supporting documentation you reference, you should provide either electronic or hard copies of any supporting materials cited in the recommendation, or valid links to public websites where the cited materials can be accessed; these materials should be in English. If you do not, we may at our option contact you to obtain supporting documentation. However, if you do not provide the supporting documentation, and it is not otherwise readily available in our files, we will be unable to consider this information in making our finding. In addition, we request that you provide literature citations that are specific enough to allow us to easily locate within the documentation the particular information cited in the petition, including page numbers or chapters, as applicable.

Provide specific citations here:



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Stewart, J. G., V. A. Barbo, D. B. Henry, D. P. Herzog, J. W. Ridings, A. F. Kelley, and J. E. Wallace. 2005. New records of the Crystal Darter (*Crystallaria asprella*) in the Middle Mississippi River. *American Midland Naturalist* 154: 471-473.

Boschung, H. T. and R. L. Mayden. 2004. *Fishes of Alabama*. Smithsonian Books, Washington, D.C.

Williams, J. E., J. E. Johnson, D. A. Hendrickson, S. Contreras-Balderas, J. D. Williams, M. Navarro_Mendoza, D. E. McAllister, and J. E. Deacon. 1989. *Fishes of North America endangered, threatened, or of special concern: 1989*. *Fisheries* 14: 2-20.

Provide a list of attachments here:

1) Stewart et al. (2005)



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Mankowski comments and recommendation on the nomination to add Crystal Darter (*Crystallaria asprella*) as an Illinois endangered species. (02/02/2014)

General comments

Crystal Darter has never been listed on the Illinois List of Endangered and Threatened Species; it was deemed extirpated by Smith in 1979 (in Page et al, 1991).

The USFWS evaluated the species in a 2009 range-wide status assessment and in a 2011 finding for a petition for listing. Neither evaluation found substantial scientific or commercial information indicating that federal listing may be warranted at the time.

ESPB listing criteria for the species and the proposal's evidence for each:

3. Species which formerly were more widespread in Illinois but have shown significant declines which may lead to extirpation from the State due to habitat destruction, collecting, or other pressures resulting from the development of Illinois. This includes species which:

b. have experienced a range reduction;

The current proposal does not seem to present sufficient evidence to demonstrate the species has experienced a range reduction in Illinois. Board staff reviewed status and distribution information from NatureServe (2013) and an USFWS 2011 partial 90-day finding on a petition for listing; both NatureServe and the USFWS note declines in range-wide status and distribution, but neither addresses specifically Illinois status and distribution. The species is generally considered rare (USFWS 2011; NatureServe 2013) and may have only ever been quite rare in Illinois, but historic sampling methods are described as relatively ineffective and may at least partly explain its identification as rare and previously extirpated in Illinois and other parts of its range. The records reported by Stewart (2005) for the Middle Mississippi River, are new occurrences for that river reach and while not representing a range expansion because it is central to the species' range, the reports do represent an expansion of known distribution.

There is limited Illinois occurrence information presented or readily available for assessment. In March 2013, Board staff queried the Illinois Natural History Survey database and found only two historic records (one 1877 Mississippi River record in Hancock County and one 1901 MR record in Whiteside County) and one recent record, a 2009 occurrence for the MR in Rock Island County – the current proposal provides five additional reports since 1998. All of these Illinois historic and recent records are restricted to border waters.

4. Species which are low in numbers and for which known or potential threats are likely to cause significant declines, including:

b. species which exhibit restricted habitats or low populations in Illinois;

Historic and recent observation information submitted suggests the species would qualify under this criterion and as noted above, there is little evidence that the species was ever more than quite rare in Illinois. It is appreciated that the nomination presents occurrence information from multiple locations and spanning 13 years, with 3 reports from 2004-2013 and explains the potential significance of observations relative to the low detectability of the species – even evaluating and discounting their potential as waifs. However, recent observations that may at least partially be due to improvements in sampling methodology (e.g., Missouri Trawl, Herzog et al. 2005 in USFWS 2011) may also demonstrate the species may be more common than previously thought (USFWS 2011).



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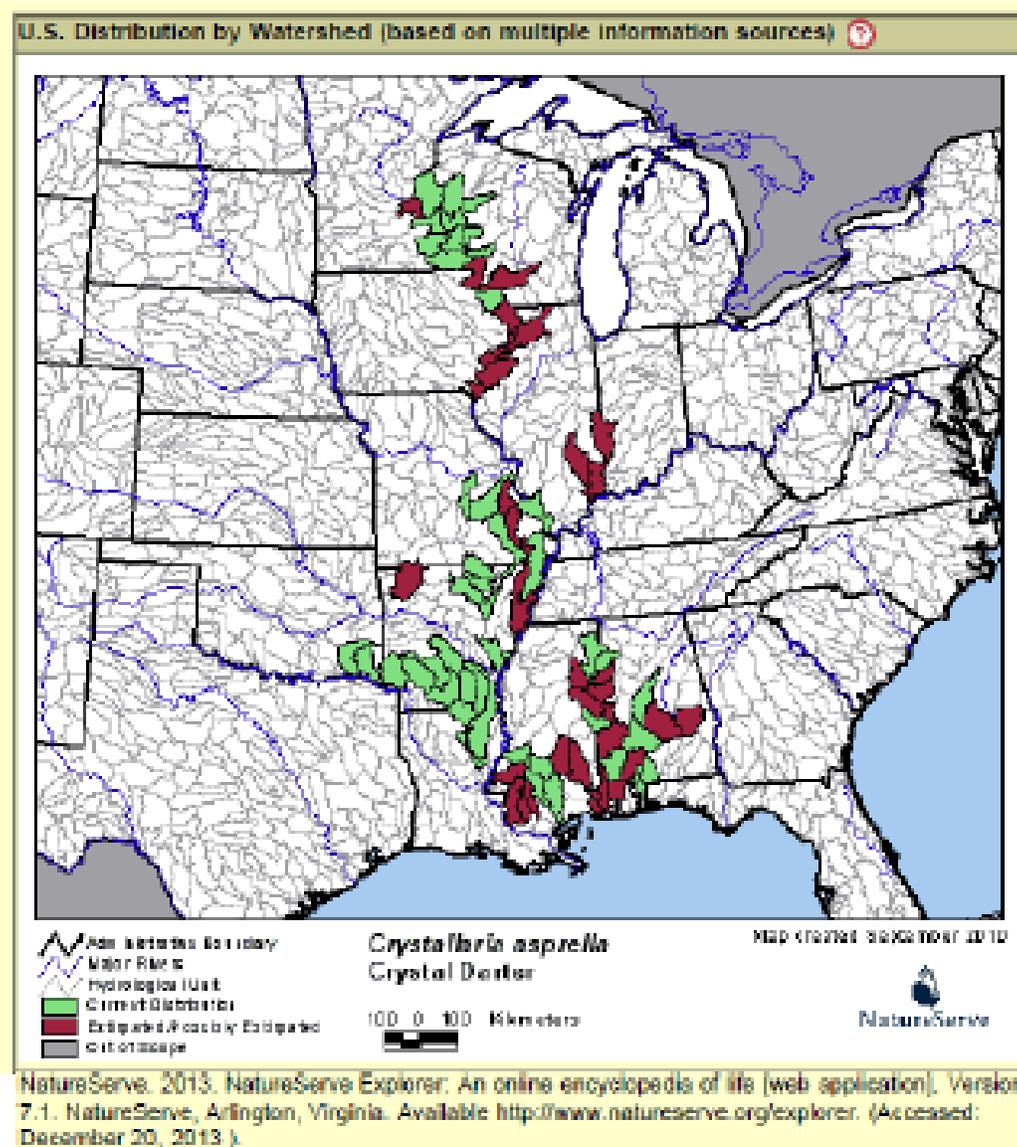
**ILLINOIS LIST OF ENDANGERED AND THREATENED ANIMAL SPECIES
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With regard to restricted habitats, descriptions in the USFWS partial 90-day finding note habitat specificity (large creeks and rivers with extensive clean sand and gravel raceways; individuals generally inhabiting waters deeper than 60 cm (23.6 in) and with strong currents; the species is rarely collected when current velocities are lower than 32 cm/second) (USFWS 2011). The current recommendation does not review threats.

Staff recommendation

As has been discussed over the course of the current List review, staff struggles with how best to address edge of range and border-waters species. Board staff recommendation is that the evidence provided may warrant listing the species as Illinois endangered or threatened due to restricted habitats and low population numbers. Taking into consideration recent improvements in sampling methodology, updated surveys would improve a species' status and distribution assessment.



ILLINOIS ENDANGERED SPECIES PROTECTION BOARD

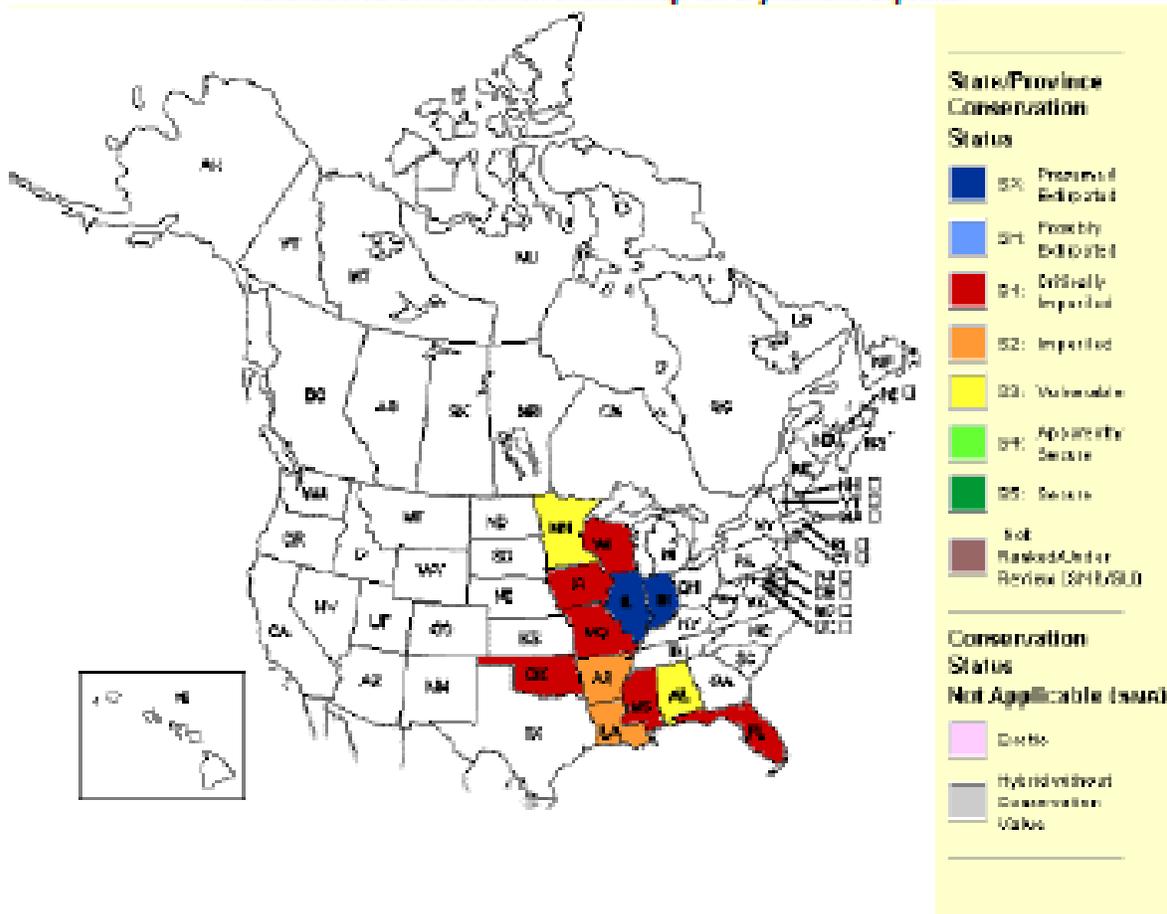
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NatureServe Conservation Status Map for *Crystallaria asprella*



NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: December 20, 2013).

References:

50 CFR Part 17, Volume 76, Number 194, Part 4 - October 6, 2011. Endangered and Threatened Wildlife and Plants; Partial 90-Day Finding on a Petition To List 404 Species in the Southeastern United States as Threatened or Endangered With Critical Habitat

NatureServe. 2013. NatureServe Explorer. An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, VA. Available at <http://www.natureserve.org/explorer>. (Accessed: December 20, 2013).

Page, L.M., and M.R. Jeffords, eds. 1991. Our living heritage: the biological resources of Illinois. Illinois Natural History Survey Bulletin 34(4): 357-477.

Stewart, J. G., V. A. Barko, D. B. Henry, D. P. Herzog, J. W. Ridings, A. F. Kelley, and J. E. Wallace. 2005. New records of the Crystal Darter (*Crystallaria asprella*) in the Middle Mississippi River. American Midland Naturalist 154: 471-473.



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Preliminary listing decision summary from agenda item 9 of the 161st meeting, 02/21/2014

The Board discussed that while some recent observations seem to confirm the species' presence in Illinois, there appears to still be much that is not known about the full extent of its status and distribution and especially since it is a border-river species.

Dr. Walk **moved** to approve adding Crystal Darter (*Crystallaria asprella*) as an Illinois threatened species, Ms. Ross seconded the motion, and it was **approved** unanimously. Chair Gooch thanked Mr. Tiemann for his presentation of Dr. Taylor's submittal.



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ILLINOIS LIST OF ENDANGERED AND THREATENED ANIMAL SPECIES

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Public Hearing Documents: Individual species reviews and select Board discussion and determinations for species with ESPB preliminary approval for changes in listing status, addition to, or removal from, the Illinois List.

Hybognathus hankinsoni (Brassy Minnow) - Proposed Action: add as threatened

Reviewed at: 157th meeting, 02/08/2013; data confirmation at 161st meeting, 02/21/2014; meeting minutes may contain additional information and discussion

Illinois Endangered Species Protection Board (ESPB) required 5-year review of the Illinois List of Endangered and Threatened Species (Illinois List) ending in 2014:

Form for ESPB Technical Expert Consultant (ESPB TEC) recommendation for adding a species to the Illinois List of Endangered and Threatened Species

Prepared by:
Anne Mankowski, Director
Illinois Endangered Species Protection Board
One Natural Resources Way
Springfield, IL 62702-1271
Office phone: 217-785-8687
Email: anne.mankowski@illinois.gov
March 2012

Complete one form for each species nomination. Fill-in all sections to the best of your ability with available information. Return the form and copies of attachments to Anne Mankowski.

J.

Date: 30 November 2012

K. Proposer Information

Name: Leon C. Hinz Jr.

Address: One Natural Resources Way, Springfield, IL 62702-1271

Phone number: (217) 785-8297

Email address: leon.hinz@illinois.gov

Title: Stream Ecologist

Institution/Organization affiliation: University of Illinois/ Prairie Research Institute/ Illinois Natural History Survey

L. The scientific and common name, including nomenclature citation, of any species involved (the ESPB may elect to use the common name identified by NatureServe).

Scientific Name: *Hybognathus hankinsoni* (Hubbs, 1929)

Common Name: Brassy Minnow

Nomenclature Citation:



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ILLINOIS LIST OF ENDANGERED AND THREATENED ANIMAL SPECIES

5-YEAR REVIEW AND REVISION ENDING IN 2014

Public Hearing Documents: Individual species reviews and select Board discussion and determinations for species with ESPB preliminary approval for changes in listing status, addition to, or removal from, the Illinois List.

M. Identification of the specific listing status recommended – endangered or threatened – and reference to specific ESPB listing criteria that are affecting the species, including where these factors are acting upon the species, the magnitude and imminence of these factors, and whether, either singly or acting in combination, these factors may cause the species to be an endangered or threatened species (endangered = at risk of extinction in the wild in Illinois; threatened = likely to become endangered in the wild in Illinois within the foreseeable future).

Recommend listing as endangered _____

Recommend listing as threatened X

Identify which ESPB listing criteria are affecting the species and for which your proposal provides supporting evidence: **Statewide distribution of Brassy Minnow has declined greatly over the past decade and the species has habitat requirements that are available in only a limited number of locations mainly in the northern portion of the state.**

1. Species or subspecies designated as federally endangered or threatened.
2. Species proposed for Federal Endangered or Threatened status that occurs in Illinois.
3. Species which formerly were more widespread in Illinois but have shown significant declines which may lead to extirpation from the State due to habitat destruction, collecting, or other pressures resulting from the development of Illinois. This includes species which:
 - a. are experiencing reproductive impairment;
 - b. have experienced a range reduction;
 - c. occur in reduced numbers even though range or number of populations remains steady.
4. Species which are low in numbers and for which known or potential threats are likely to cause significant declines, including:
 - a. species which exhibit very restricted geographic ranges, of which Illinois is a part;
 - b. species which exhibit restricted habitats or low populations in Illinois;
 - c. species which are significant disjuncts in Illinois, i.e., the Illinois population is far removed from the rest of the species' range.

N. Biological information on the species (including habitat and life-history traits) that is relevant to determining whether a species may be endangered or threatened.

Brassy Minnow ... Brassy Minnows are a demersal species associated with a wide variety of habitat conditions that generally include cool water temperatures, low current velocities, and aquatic vegetation. Coolwater habitats are rare in Illinois and restricted mainly to the northern tier of counties that includes most of the known locations of the Brassy Minnow (Hinz et al. 2011). I am unaware of any statewide assessment of aquatic vegetation in Illinois rivers but the conventional wisdom is that altered flow regimes and increased sedimentation have lead to a decline in aquatic vegetation in streams. In the western US, Brassy Minnows are associated with fluctuating prairie streams (Scheuner & Fausch 2002, Scheuner et al. 2003). In these Colorado streams Brassy Minnow were found to have poor adult survival in stream segments with the least stable flows but were able to rapidly recolonize when reaches were rewatered (Scheuner & Fausch 2002, Scheuner et al. 2003). The Brassy Minnow has a NatureServe Conservation Status ranking of G5S1S2 indicating that their assessment ranks the species as Imperiled in the State of Illinois (NatureServe2012; Young 2011; Jeannie Barnes personal communication).



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O. A detailed narrative justification for the recommended measure, describing, based on available information, past and present numbers and distribution of the species involved (location information should include lat/long coordinates and other information necessary to add a record to the Natural Heritage (Biotics 4) Database) and any threats faced by the species; it is most helpful if this narrative contains an analysis of the information presented.

The State Wildlife Grant program recently funded a project to revise and update the Illinois list of fish species in greatest need of conservation. The study combined information on fish location from seven separate databases including collections data from INHS (Illinois Natural History Survey Fisheries Collection) and UMMZ (University of Michigan Museum of Zoology), and monitoring data from IDNR Fisheries Division (FAS Streams, FAS Lakes), LTFE (Long term Electrofishing), LTRMP (Long term Resource Monitoring Program), and the IDNR BIOTICs databases. This justification is based on the results of that study (Metzke et al. 2012).

Our analysis suggests that the distribution of the Brassy Minnow has declined greatly in the past ten years. Records from the Illinois Department of Natural Resources fisheries database (Illinois Fisheries Analysis System or FAS) data contained no collections of the Brassy Minnow during the 2000-2012 sampling period and only from 3 locations during 1977-1999 sampling. The species has been collected as part of other sampling programs during the recent period at 4 sites in two counties within the Pecatonica River system but not elsewhere in Illinois during the past 10+ years. Our records indicate the Brassy Minnow was collected in 8 counties during 1977-1999 and an additional 3 counties (13 total) from 1950-1976 (Metzke et al. 2012). Our recent look at available statewide data found a >83% reduction in the number of HUC8 watersheds where the Brassy Minnow was found when comparing recent records (2000-2010, 1 HUC8) and earlier records (1977-1999, 7 HUC8) (Metzke et al. 2012). Smith (1979) states that the Brassy Minnow was unknown prior to 1929 suggesting they may have always been rare within the state although information about its distribution and abundance prior to that time is unavailable.

Threats are briefly discussed in section E. (above) concerning the rarity of coolwater habitats and vulnerability to climate change. Information concerning distribution and connectivity of stream reaches containing critical habitat for all life stages of the Brassy Minnow is unknown to me at this time. Fragmentation of appropriate habitats and flow variability associated with altered riparian conditions are major threats to this species. Scheurer & Fausch (2002) suggest that persistence of Brassy Minnow in an intermittent stream showed aspects of metapopulation dynamics. If Illinois' populations respond similarly to intermittency then connectivity between stream reaches with appropriate habitats is essential for conserving this species. Before the conclusion of the project all available records were provided to Tara Kieninger (IDNR, Natural Heritage Biotics database manager) and added to the database.

P. Information on regulatory protections and conservation activities initiated or currently in place that may or may not protect the species or its habitat.

Brassy Minnow is not currently protected in Illinois.

Q. Information regarding the status of the species over all or a significant portion of its range.

NatureServe rank for Brassy Minnow in Illinois is G3S1S2 (see NatureServe2012 for adjacent States' ranks). The Brassy Minnow is state threatened in Colorado (S3), a species in need of conservation in Kansas (S1), and is considered vulnerable in Missouri (S3).

R. Supporting documentation in the form of copies of reprints of pertinent publications, data, reports or letters from authorities, and maps.



**ILLINOIS LIST OF ENDANGERED AND THREATENED ANIMAL SPECIES
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The ESPB may consult information already in our files for a subject species, but will only conduct additional research as time and resources allow when evaluating whether a listing recommendation presents substantial information indicating listing may be warranted. Therefore, to ensure that we will consider any supporting documentation you reference, you should provide either electronic or hard copies of any supporting materials cited in the recommendation, or valid links to public websites where the cited materials can be accessed; these materials should be in English. If you do not, we may at our option contact you to obtain supporting documentation. However, if you do not provide the supporting documentation, and it is not otherwise readily available in our files, we will be unable to consider this information in making our finding. In addition, we request that you provide literature citations that are specific enough to allow us to easily locate within the documentation the particular information cited in the petition, including page numbers or chapters, as applicable.

Supporting documentation on Brassy Minnow has been provided to Anne Mankowski.

Provide specific citations here:

- Hinz Jr., L. C., B. A. Metzke, and A. M. Holtrop. 2011. Evaluating water temperature, habitat, and fish communities in candidate coolwater streams in Illinois. Final Report to the Illinois Department of Natural Resources. Illinois Natural History Survey Technical Report 2011/21.
- IDNR. 2005. The Illinois Comprehensive Wildlife Conservation Plan & Strategy. Version 1.0. Illinois Department of Natural Resources, Springfield, IL. 333pp.
- Metzke, B.A. L. C. Hinz Jr, and A. C. Hulfin. 2012. Status Revision and Update for Illinois' Fish Species in Greatest Need of Conservation. Final Report to the Illinois Department of Natural Resources. Illinois Natural History Survey Technical Report 2012/19.
- NatureServe. 2005. NatureServe Explorer Comprehensive Report on Brassy Minnow (Hubbs, 1929).
- Scheurer, J.A. & K.D. Fausch. 2002. Brassy Minnow in Colorado Plains Streams: Identification, Historical Distribution, and Habitat Requirements at Multiple Scales. Colorado Water Resources, Research Institute, Completion Report No. 198. 148pp.
- Scheurer, J.A., K.D. Fausch & K.R. Bestgen. 2003. Multiscale Processes Regulate Brassy Minnow Persistence in a Great Plains River. Transactions of the American Fisheries Society 132(3): 840-855.
- Young, B. 2011. Patterns and Trends in State Designation of SGNC Species. Technical report prepared by NatureServe for the United States Geological Survey Biological Informatics Program. 25p.

General information concerning the life history and habitat is available here:

- Hubbs, C.L. and K.F. Lagler. 2004. Fishes of the Great Lakes Region. Revised Edition. (Revised by G.R. Smith). The University of Michigan Press, Ann Arbor. 276pp., 32 color plates.
- Scott, W.B. and E.J. Crossman. 1973. Freshwater Fishes of Canada. Bulletin 184, Fisheries Research Board of Canada, Ottawa. 966 pp.
- Smith, P.W. 1979. The Fishes of Illinois. University of Illinois Press, Urbana and Chicago. 314pp.

Provide a list of attachments here:

- Hinz Jr., L. C., B. A. Metzke, and A. M. Holtrop. 2011. Evaluating water temperature, habitat, and fish communities in candidate coolwater streams in Illinois. Final Report to the Illinois Department of Natural Resources. Illinois Natural History Survey Technical Report 2011/21.
- MAP_BrassyMinnow2012.pdf ... Copy of Map from Appendix C of Metzke et al. 2012.



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Metzke, B.A., L. C. Hinz Jr, and A. C. Hulin. 2012. Status Revision and Update for Illinois' Fish Species in Greatest Need of Conservation. Final Report to the Illinois Department of Natural Resources. Illinois Natural History Survey Technical Report 2012/19.

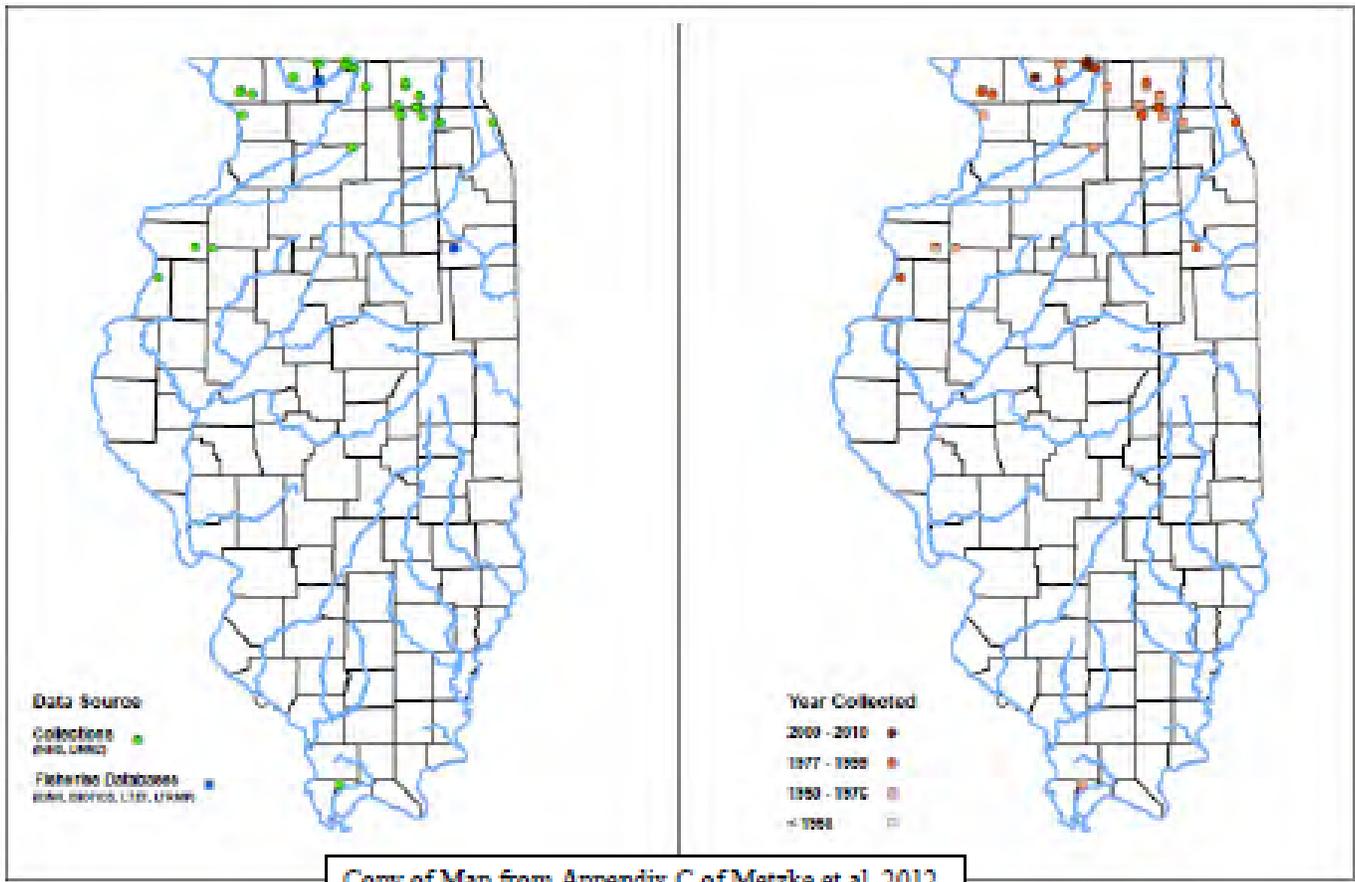
NatureServe 2012. NatureServe Explorer Summary Species Factsheet on *Lampetra appendix* (DeKay, 1842).

Scheurer, J.A. & K.D. Fausch. 2002. Brassy Minnow in Colorado Plains Streams: Identification, Historical Distribution, and Habitat Requirements at Multiple Scales. Colorado Water Resources, Research Institute, Completion Report No. 198. 148pp.

Scheurer, J.A., K.D. Fausch & K.R. Bestgen. 2003. Multiscale Processes Regulate Brassy Minnow Persistence in a Great Plains River. Transactions of the American Fisheries Society 132(3): 840-855.

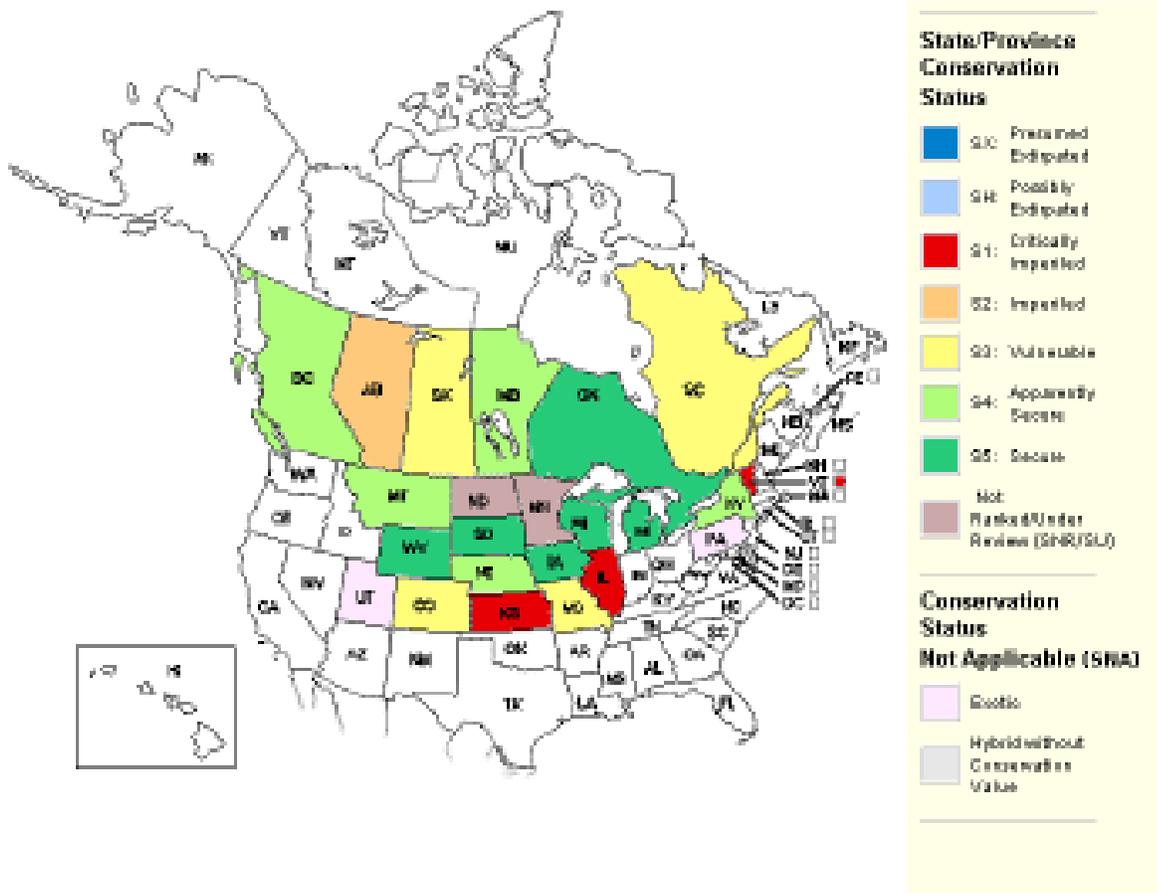
Young, B. 2011. Patterns and Trends in State Designation of SGNCS Species. Technical report prepared by NatureServe for the United States Geological Survey Biological Informatics Program. 25p.


Brassy minnow (*Hybognathus hankinsoni*)

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NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed date unknown, 2012).

Preliminary listing decision summary from agenda item 11 of the 157th meeting, 02/08/2013

In the review of multiple species' recommendations during the agenda item discussion, Ms. Mankowski made recommendation for adding *Hybognathus hankinsoni* (Brassy Minnow) as an Illinois Threatened species. Dr. Walk **moved** to approve the recommendation, Ms. Ross seconded the motion, and it was **approved** unanimously.



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Lethenteron appendix (American Brook Lamprey) - Proposed Action: add as threatened

Reviewed at: 157th meeting, 02/08/2013; data confirmation at 161st meeting, 02/21/2014; meeting minutes may contain additional information and discussion

Illinois Endangered Species Protection Board (ESPB) required 5-year review of the Illinois List of Endangered and Threatened Species (Illinois List) ending in 2014:

Form for ESPB Technical Expert Consultant (ESPB TEC) recommendation for adding a species to the Illinois List of Endangered and Threatened Species

Prepared by:
Anne Mankowski, Director
Illinois Endangered Species Protection Board
One Natural Resources Way
Springfield, IL 62702-1271
Office phone: 217-785-8687
Email: anne.mankowski@illinois.gov
March 2012

Complete one form for each species nomination. Fill-in all sections to the best of your ability with available information. Return the form and copies of attachments to Anne Mankowski.

S.

Date: 30 November 2012

T. Proposer Information

Name: Leon C. Hinz Jr.

Address: One Natural Resources Way, Springfield, IL 62702-1271

Phone number: (217) 785-8297

Email address: leon.hinz@illinois.gov

Title: Stream Ecologist

Institution/Organization affiliation: University of Illinois/ Prairie Research Institute/ Illinois Natural History Survey

U. The scientific and common name, including nomenclature citation, of any species involved (the ESPB may elect to use the common name identified by NatureServe).

Scientific Name: Lethenteron appendix (DeKay, 1842) [Also listed as Lampetra appendix]

Common Name: American Brook Lamprey

Nomenclature Citation:



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V. Identification of the specific listing status recommended – endangered or threatened – and reference to specific ESPB listing criteria that are affecting the species, including where these factors are acting upon the species, the magnitude and imminence of these factors, and whether, either singly or acting in combination, these factors may cause the species to be an endangered or threatened species (endangered = at risk of extinction in the wild in Illinois; threatened = likely to become endangered in the wild in Illinois within the foreseeable future).

Recommend listing as endangered _____

Recommend listing as threatened X

Identify which ESPB listing criteria are affecting the species and for which your proposal provides supporting evidence: *Statewide distribution of American Brook Lamprey has declined greatly over the past decade and the species has habitat requirements that are available in only a limited number of locations mainly in the northern portions of the state.*

1. Species or subspecies designated as federally endangered or threatened.
2. Species proposed for Federal Endangered or Threatened status that occurs in Illinois.
3. Species which formerly were more widespread in Illinois but have shown significant declines which may lead to extirpation from the State due to habitat destruction, collecting, or other pressures resulting from the development of Illinois. This includes species which:
 - a. are experiencing reproductive impairment;
 - b. have experienced a range reduction;
 - c. occur in reduced numbers even though range or number of populations remains steady.
4. Species which are low in numbers and for which known or potential threats are likely to cause significant declines, including:
 - a. species which exhibit very restricted geographic ranges, of which Illinois is a part;
 - b. species which exhibit restricted habitats or low populations in Illinois;
 - c. species which are significant disjuncts in Illinois, i.e., the Illinois population is far removed from the rest of the species' range.

W. Biological information on the species (including habitat and life-history traits) that is relevant to determining whether a species may be endangered or threatened.

American Brook Lamprey (Lethenteron appendix) ... American Brook Lampreys are associated with stable, high quality cool water habitats (Rensud 2011). Due to their complex life history, which includes a metamorphosis to the adult stage and a semelparous spawning habit that may occur in aggregations, brook lamprey require two distinctive types of habitat that are connected by free flowing stretches of stream. Adults are found in clear brooks with sand & gravel substrates while larvae occur in soft sediments in slightly larger stream sections. Non-parasitic lampreys do not disperse widely from where they hatch and are therefore vulnerable to habitat degradation. Coolwater habitats are rare in Illinois (Hinz et al. 2011) and Walk et al. (2011) found the American Brook Lamprey to be extremely vulnerable to Climate Change partly based on the habitat requirements of the species. The American Brook Lamprey has a NatureServe Conservation Status ranking of G4S2 indicating that their assessment ranks the species as imperiled in the State of Illinois (NatureServe 2005, Young 2011; Jeannie Barnes personal communication).

X. A detailed narrative justification for the recommended measure, describing, based on available information, past and present numbers and distribution of the species involved (location information should



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include lat/long coordinates and other information necessary to add a record to the Natural Heritage (Biotics 4 Database) and any threats faced by the species; it is most helpful if this narrative contains an analysis of the information presented.

The State Wildlife Grant program recently funded a project to revise and update the Illinois list of fish species in greatest need of conservation. The study combined information on fish location from seven separate databases including collections data from INHS (Illinois Natural History Survey Fisheries Collection) and UMMZ (University of Michigan Museum of Zoology), and monitoring data from IDNR Fisheries Division (FAS Streams, FAS Lakes), LTEF (Long term Electrofishing), LTRMP (Long term Resource Monitoring Program), and the IDNR BIOTICs databases. This justification is based on the results of that study (Metzke et al. 2012).

Our analysis suggests that the distribution of the American Brook Lamprey has declined greatly in the past ten years. Records from the Illinois Department of Natural Resources fisheries database (Illinois Fisheries Analysis System or FAS) contained only 4 locations where American Brook Lamprey were collected during sampling efforts between 2000-2010 while the species was observed at 14 locations during 1977-1999 sampling efforts. By including other records (non-FAS) we find that the species has had its range reduced from 32 sites in 13 counties (1977-1999) to 10 sites (31%) in 6 counties (46%) 2000-2010. Our analysis using statewide data found a >35% reduction in the number of HUC8 watersheds where this lamprey was found when comparing recent records (2000-2010, 3 HUC8 watersheds) and earlier records (1977-1999, 7 HUC8 watersheds). We have no records of this species in the Illinois River system (Fox River [0 recent sites/ 2 historic sites], Mackinaw River [0/2], Spoon River [0/2], Sangamon River [0/4]) outside of Kankakee County (Kankakee River [2/4]) in the past ten years. Similar declines appear to have occurred in the Embarras River where American Brook Lamprey has been found at only one of six historic locations in the past 10+ years (Metzke et al. 2012).

Threats are briefly discussed in section E. (above) concerning the rarity of coolwater habitats and vulnerability to climate change. Information concerning distribution and connectivity of stream reaches containing critical habitat for all life stages of the American Brook Lamprey is unknown to me at this time. Before the conclusion of the project all available records were provided to Tara Kieninger (IDNR, Natural Heritage Biotics database manager) and added to the database.

Y. Information on regulatory protections and conservation activities initiated or currently in place that may or may not protect the species or its habitat.

American Brook Lamprey is a Species in greatest need of conservation in Illinois (IDNR 2005).

Z. Information regarding the status of the species over all or a significant portion of its range.

NatureServe rank for American Brook Lamprey in Illinois is G4S2 (see NatureServe2005 for adjacent States' ranks). American Brook Lamprey is state endangered in New Hampshire and Connecticut, state threatened in Iowa, Kentucky, Massachusetts, Maryland, North Carolina, and Vermont. The American Brook Lamprey is a candidate species in Pennsylvania and a species of special concern in Arkansas.

AA. Supporting documentation in the form of copies of reprints of pertinent publications, data, reports or letters from authorities, and maps.

The ESPB may consult information already in our files for a subject species, but will only conduct additional research as time and resources allow when evaluating whether a listing recommendation presents substantial information indicating listing may be warranted. Therefore, to ensure that we will consider any supporting documentation you reference, you should provide either electronic or hard copies of any supporting materials



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cited in the recommendation, or valid links to public websites where the cited materials can be accessed; these materials should be in English. If you do not, we may at our option contact you to obtain supporting documentation. However, if you do not provide the supporting documentation, and it is not otherwise readily available in our files, we will be unable to consider this information in making our finding. In addition, we request that you provide literature citations that are specific enough to allow us to easily locate within the documentation the particular information cited in the petition, including page numbers or chapters, as applicable.

Supporting documentation on American Brook Lamprey has been provided to Anne Mankowski.

Provide specific citations here:

Hinz Jr., L. C., B. A. Metzke, and A. M. Holtrop. 2011. Evaluating water temperature, habitat, and fish communities in candidate coolwater streams in Illinois. Final Report to the Illinois Department of Natural Resources. Illinois Natural History Survey Technical Report 2011/21.

IDNR. 2005. The Illinois Comprehensive Wildlife Conservation Plan & Strategy. Version 1.0. Illinois Department of Natural Resources, Springfield, IL. 353pp.

Metzke, B.A. L. C. Hinz Jr, and A. C. Hulfin. 2012. Status Revision and Update for Illinois' Fish Species in Greatest Need of Conservation. Final Report to the Illinois Department of Natural Resources. Illinois Natural History Survey Technical Report 2012/19.

NatureServe 2005. NatureServe Explorer Comprehensive Report on Lampetra appendix (DeKay, 1842).

Renaud, C.B. 2011. Lampreys of the World. An annotated and illustrated catalogue of lamprey species known to date. Food and Agriculture Organization Species Catalogue for Fishery Purposes. No. 3. Rome, FAO. 109pp.

Walk, J., S. Hagen, and A. Lange. 2011. Adapting Conservation to a Changing Climate: An Update to the Illinois Wildlife Action Plan. Report to the Illinois Department of Natural Resources. Illinois Chapter of the Nature Conservancy, Peoria, IL. 120 pp.

Young, B. 2011. Patterns and Trends in State Designation of SGNC Species. Technical report prepared by NatureServe for the United States Geological Survey Biological Informatics Program. 25p.

General information concerning the life history and habitat is available here:

Hubbs, C.L. and K.F. Lagler. 2004. Fishes of the Great Lakes Region. Revised Edition. (Revised by G.R. Smith). The University of Michigan Press, Ann Arbor. 276pp., 32 color plates.

Scott, W.B. and E.J. Crossman. 1973. Freshwater Fishes of Canada. Bulletin 184, Fisheries Research Board of Canada, Ottawa. 966 pp.

Smith, P.W. 1979. The Fishes of Illinois. University of Illinois Press, Urbana and Chicago. 314pp.

Provide a list of attachments here:

Hinz Jr., L. C., B. A. Metzke, and A. M. Holtrop. 2011. Evaluating water temperature, habitat, and fish communities in candidate coolwater streams in Illinois. Final Report to the Illinois Department of Natural Resources. Illinois Natural History Survey Technical Report 2011/21.

MAP_AmericanBrookLamprey2012.pdf ... Copy of Map from Appendix C of Metzke et al. 2012.

Metzke, B.A. L. C. Hinz Jr, and A. C. Hulfin. 2012. Status Revision and Update for Illinois' Fish Species in Greatest Need of Conservation. Final Report to the Illinois Department of Natural Resources. Illinois Natural History Survey Technical Report 2012/19.

NatureServe 2005. NatureServe Explorer Comprehensive Report on Lampetra appendix (DeKay, 1842).



**ILLINOIS LIST OF ENDANGERED AND THREATENED ANIMAL SPECIES
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Public Hearing Documents: Individual species reviews and select Board discussion and determinations for species with ESPB preliminary approval for changes in listing status, addition to, or removal from, the Illinois List.

NatureServe 2012. NatureServe Explorer Summary Species Factsheet on *Lampetra appendix* (DeKay, 1842).

Renaud, C.B. 2011. Lampreys of the World. An annotated and illustrated catalogue of lamprey species known to date. Food and Agriculture Organization Species Catalogue for Fishery Purposes. No. 3. Rome, FAO, 109pp.

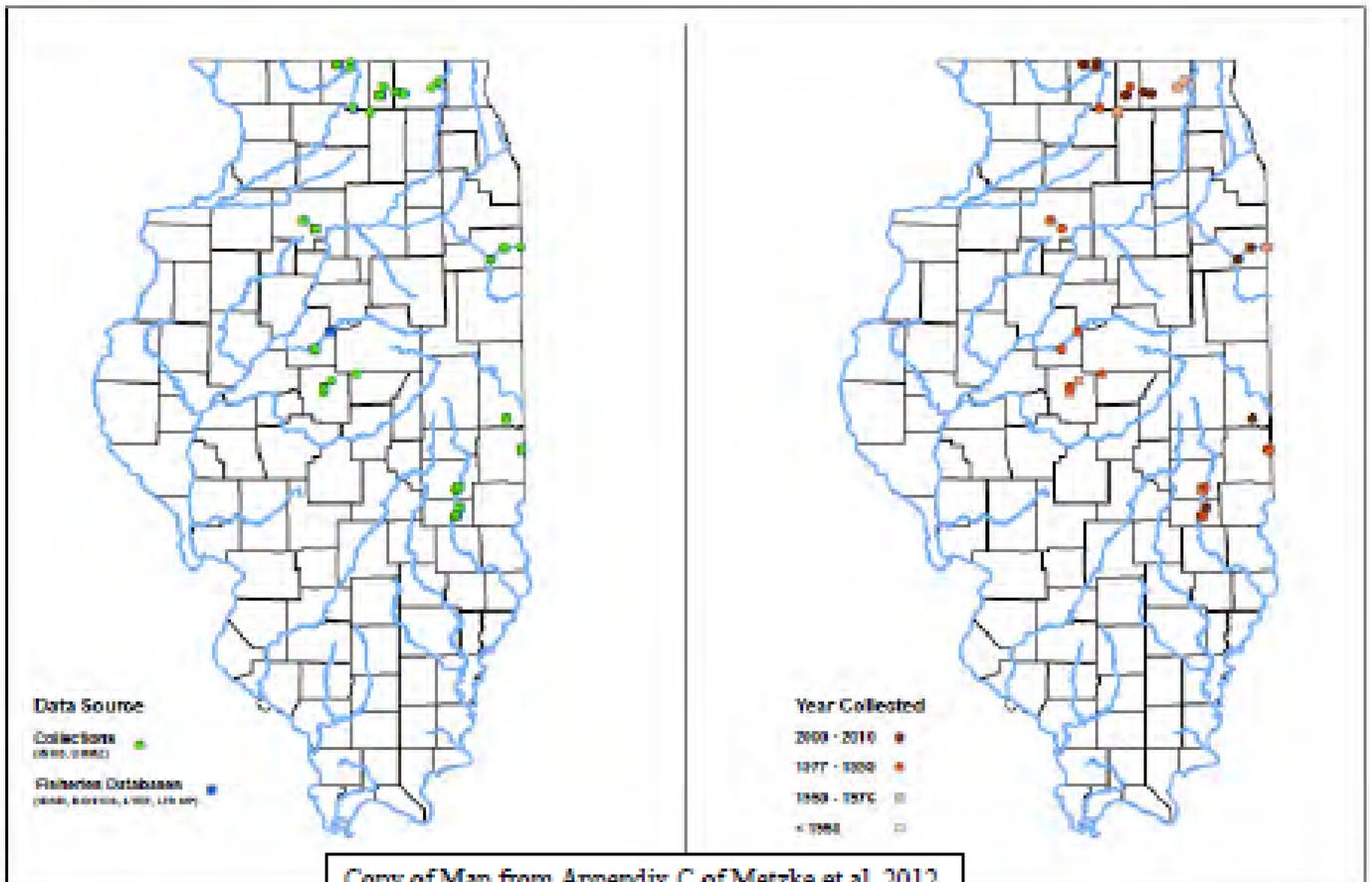
Walk, J., S. Hagen, and A. Lange. 2011. Adapting Conservation to a Changing Climate: An Update to the Illinois Wildlife Action Plan. Report to the Illinois Department of Natural Resources. Illinois Chapter of the Nature Conservancy, Peoria, IL. 120 pp.

Young, B. 2011. Patterns and Trends in State Designation of SGN Species. Technical report prepared by NatureServe for the United States Geological Survey Biological Informatics Program. 23p.

ILLINOIS
DEPARTMENT OF
NATURAL RESOURCES

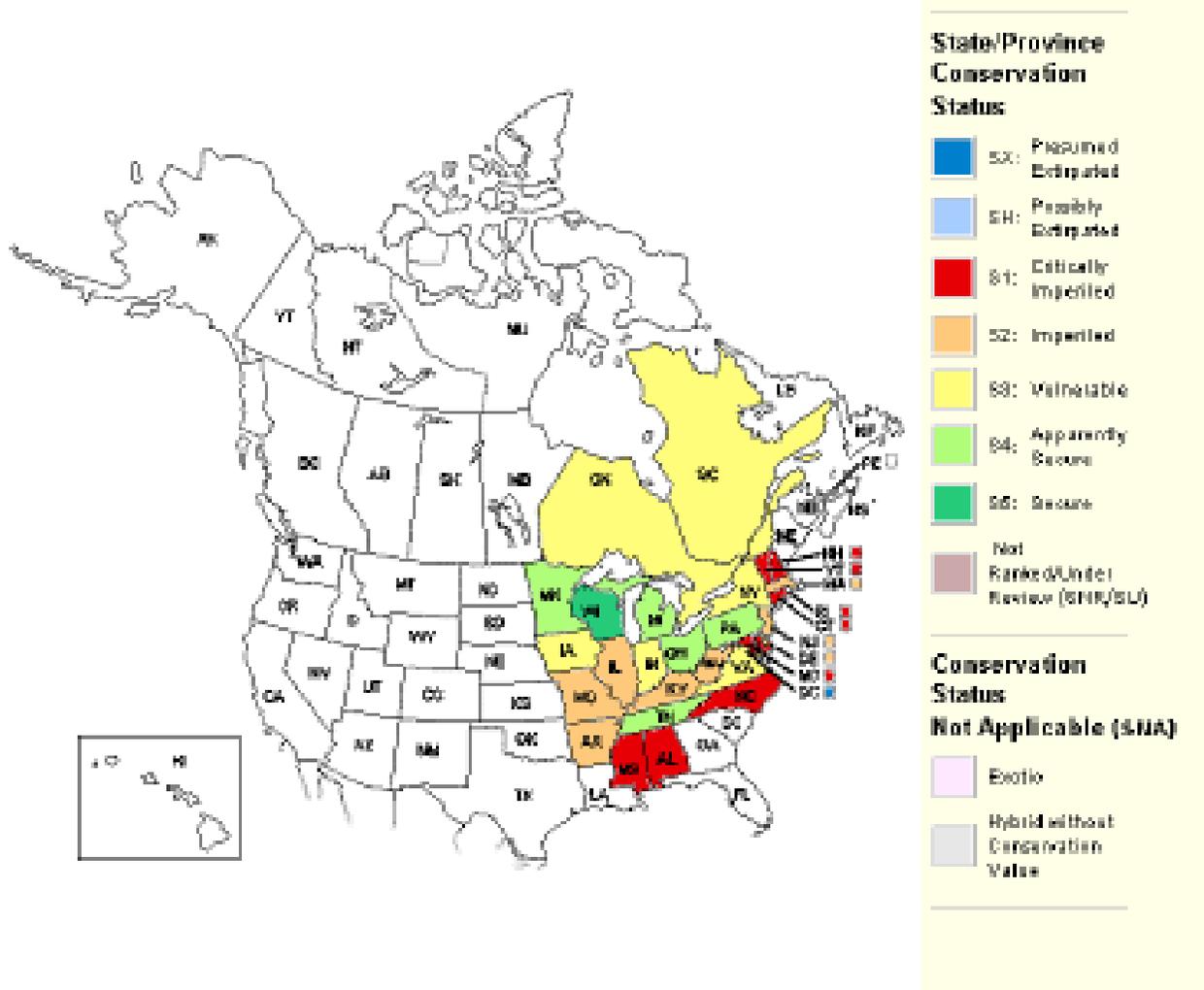
American brook lamprey (*Lampetra appendix*)

ILLINOIS NATURAL
HISTORY SURVEY
FISH AND WILDLIFE DIVISION



**ILLINOIS LIST OF ENDANGERED AND THREATENED ANIMAL SPECIES
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NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed date unknown, 2012).

Preliminary listing decision summary from agenda item 11 of the 157th meeting, 02/08/2013

In the review of multiple species' recommendations during the agenda item discussion, Ms. Mankowski made recommendation for adding Lampetra appendix (American Brook Lamprey) as an Illinois Threatened species. Dr. Walk **moved** to approve the recommendation, Ms. Ross seconded the motion, and it was **approved** unanimously.



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**ILLINOIS LIST OF ENDANGERED AND THREATENED ANIMAL SPECIES
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Reptiles

Nerodia erythrogaster neglecta (Copper-bellied Watersnake) - Proposed Action: add as threatened

Reviewed at: 161st meeting, 02/21/2014; meeting minutes may contain additional information and discussion. This action does not require a public hearing by the Board, but can be done during the same cycle and process as the 2014 List revision

Copperbelly Watersnake (Nerodia erythrogaster neglecta) Species Review, Mankowski, 02/2014

Federal Listing Status

This taxon was listed as federally threatened in the Northern Population Segment in 1997 and a recovery plan was completed in 2008 (USFWS 2008). The Northern Population Segment includes the shaded areas on the borders of Michigan, Indiana, and Ohio.

The figure below illustrates the different population segments for the taxon and is taken from the USFWS 2010 5-year review.

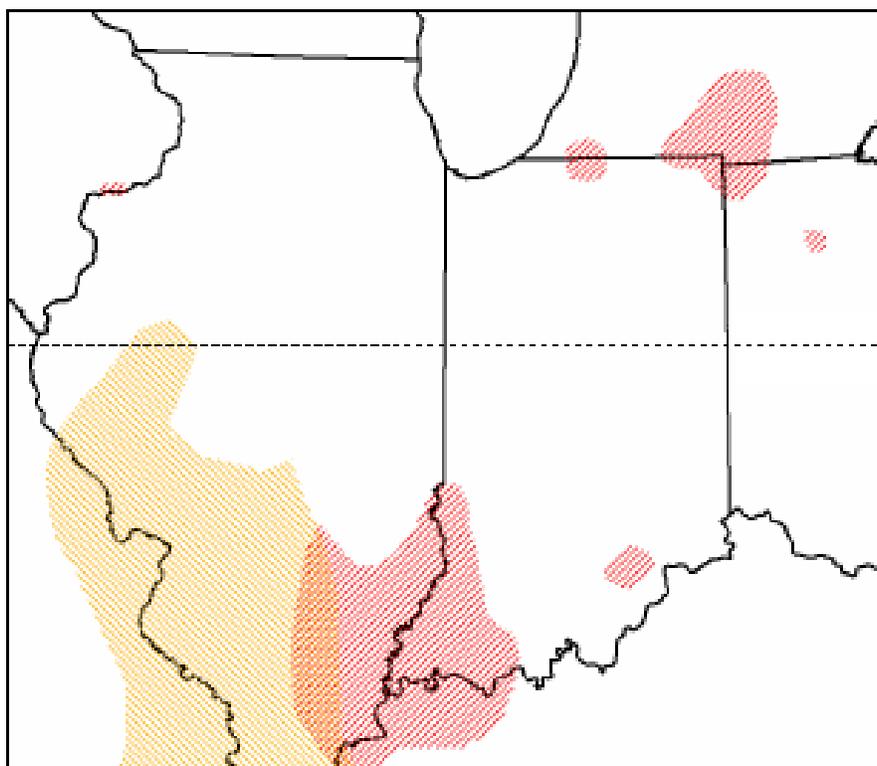


Figure 1. Historic distribution of the copperbelly water snake in the Midwest (six polygons with red hatching). To the northeast, north of the 40th North Parallel, are the isolated remaining copperbelly populations of the listed DPS. All known remaining populations of the DPS are within 15 miles of the intersection of Indiana, Michigan, and Ohio. Neither the southern populations nor the southeastern disjunct population near Seymour, Indiana, are federally listed, nor is the northwestern population along the Mississippi River in northwestern Illinois and eastern Iowa. Also shown (yellow hatching) is the Midwestern extension of the distribution of the yellowbelly water snake, the closest relative of the copperbelly, whose distribution continues south, and for which there is no Federal protection.

Implications to Illinois Listing Status

Under the IL Endangered Species Protection Act, any federally designated endangered or threatened species is automatically listed on the IL List. The Board has discussed adding some type of clarifying language to the IL List Ad Rules and the Board's IL E&T Checklist to indicate that all federally listed species are protected under the IL ESPA, but only those occurring in Illinois are included on the IL List.



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While the distinct population segment does not include Illinois, the taxon does occur in Illinois. For various reasons, including questions about IL status and distribution, questions about differentiation between subspecies present in Illinois, that the taxon was provided some protections under the IL Wildlife Code pursuant to terms in an interagency conservation agreement that expired in 2001, and that the Board did not have staff during the last two revisions to review the matter more carefully, the taxon has never been "added" to the IL List. However, as a federally-listed taxon that occurs in Illinois, it seems that it should be included on the IL List. Ms. Mankowski submitted in January 2014, a request to IDNR Legal Counsel for legal opinion on the matter of how to indicate on the IL List a federally listed species under a DPS when the DPS does not include Illinois, but the taxon occurs in Illinois.

Illinois Status and Distribution

The IDNR and USFWS recently contracted surveys of historically known locations and new areas to assess the status and distribution of *N. erythrogaster neglecta* in Illinois. There appears to be a robust Illinois status and distribution.

Illinois 2013 surveys (after Karsen — report to IDNR and USFWS)

At least 83 locations with observations in 12 counties (total of 241 individuals)

<i>County</i>	<i>Approximate number of sites with observations</i>
<i>Clay</i>	<i>2</i>
<i>Edwards</i>	<i>3</i>
<i>Gallatin</i>	<i>5</i>
<i>Johnson</i>	<i>24</i>
<i>Lawrence</i>	<i>2</i>
<i>Massac</i>	<i>11</i>
<i>Pope</i>	<i>17</i>
<i>Pulaski</i>	<i>3</i>
<i>Richland</i>	<i>3</i>
<i>Saline</i>	<i>8</i>
<i>Wabash</i>	<i>2</i>
<i>Wayne</i>	<i>3</i>

Board Staff Recommendation

If added to the IL List, ESPB staff recommends Illinois threatened status.

References:

Karsen, S. 2013. Resurveying Known Historical Localities and Searching New Sites for the Copper-bellied Water Snake in Southeastern Illinois. Illinois Department of Natural Resources. 34 pp. + figures.

U.S. Fish and Wildlife Service (USFWS). 2008. Northern Population Segment of the Copperbelly Water Snake (*Nerodia erythrogaster neglecta*) Recovery Plan. Fort Snelling, Minnesota. ix + 79 pp.

USFWS. 2010. Copperbelly Water Snake (*Nerodia erythrogaster neglecta*) Northern Population Segment: Five year review summary and evaluation. East Lansing, Michigan. ii + 13 pp.



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Preliminary listing decision summary from agenda item 12 of the 161st meeting, 02/21/2014

This action does not require a public hearing by the Board, but can be done during the same cycle and process as the 2014 List revision.

Ms. Mankowski reviewed her species review for the Copper-bellied Watersnake (*Nerodia erythrogaster neglecta*) and recommended adding the species as Illinois threatened. Ms. Masi **moved** to approve adding Copper-bellied Watersnake (*Nerodia erythrogaster neglecta*) as an Illinois threatened species and Mr. Robinett seconded the motion. The Board voted and the motion was **approved**, with members Beyer-Clow, Gooch, Hofmann, Masi, Robinett, Ross, and Taft voting for, and member Walk voting against.



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ILLINOIS LIST OF ENDANGERED AND THREATENED ANIMAL SPECIES

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Birds

Caprimulgus carolinensis (Chuck-will's-widow) - Proposed Action: add as threatened

Reviewed at: the 05/16/2012 special meeting; data confirmation at 161st meeting, 02/21/2014; meeting minutes may contain additional information and discussion

Illinois Endangered Species Protection Board (ESPB) required 5-year review of the Illinois List of Endangered and Threatened Species (Illinois List) ending in 2014:

Form for ESPB Technical Expert Consultant (ESPB TEC) recommendation for adding a species to the Illinois List of Endangered and Threatened Species

Prepared by:
Anne Mankowski, Director
Illinois Endangered Species Protection Board
One Natural Resources Way
Springfield, IL 62702-1271
Office phone: 271-785-8687
Email: anne.mankowski@illinois.gov
March 2012

Complete one form for each species nomination. Fill-in all sections to the best of your ability with available information. Return the form and copies of attachments to Anne Mankowski.

A. Date: 3 April 2012

B. Proposer Information

Name: Jeffery W Walk

Address: 301 SW Adams St, Suite 1007, Peoria, IL 61602

Phone number: 309-636-3327

Email address: jwalk@tnc.org

Title: Director of Science

Institution/Organization affiliation: The Nature Conservancy

C. The scientific and common name, including nomenclature citation, of any species involved (the ESPB may elect to use the common name identified by NatureServe).

Scientific Name: *Caprimulgus carolinensis*

Common Name: Chuck-will's-widow

Nomenclature Citation:

D. Identification of the specific listing status recommended – endangered or threatened – and reference to specific ESPB listing criteria that are affecting the species, including where these factors are acting upon the species, the magnitude and imminence of these factors, and whether, either singly or acting in combination, these factors may cause the species to be an endangered or threatened species (endangered = at risk of extinction in the wild in Illinois; threatened = likely to become endangered in the wild in Illinois within the foreseeable future).

Recommend listing as endangered ...



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Recommend listing as threatened X

Identify which ESPB listing criteria are affecting the species and for which your proposal provides supporting evidence:

3. Species which formerly were more widespread in Illinois but have shown significant declines which may lead to extirpation from the State due to habitat destruction, collecting, or other pressures resulting from the development of Illinois. This includes species which:
 - a. are experiencing reproductive impairment;
 - b. have experienced a range reduction;
 - c. occur in reduced numbers even though range or number of populations remains steady.

E. Biological information on the species (including habitat and life-history traits) that is relevant to determining whether a species may be endangered or threatened.

Chuck-will's-widow ("chucks") are found in open pine-oak woodlands and upland deciduous forests, often in drier, more open situations such as savannas and barrens (Straight and Cooper 2000). In spite of ca. 1.5 million acres additional forest cover in Illinois over the past 90 years (e.g., compiled in Walk et al. 2010), the species has continued declining in recent decades (see below). The related effects of decline of oaks and increase maples, fire suppression, and low levels of timber harvest leading to more closed-canopy, more mesic forests may be affecting habitat quality for chucks. Due to their nocturnal habits, cryptic coloration, and inconspicuous nesting on the forest floor, chucks are not well sampled by programs such as the Breed Bird Survey (BBS), nor is nesting readily confirmed where individuals are detected.

F. A detailed narrative justification for the recommended measure, describing, based on available information, past and present numbers and distribution of the species involved (location information should include lat/long coordinates and other information necessary to add a record to the Natural Heritage (Biotics 4) Database) and any threats faced by the species; it is most helpful if this narrative contains an analysis of the information presented.

Historically and presently, occurrence of chucks decreases from south to north (Bohlen 1989, Kleen et al. 2004). Bohlen (1989) describes chucks as "uncommon" in southern Illinois, decreasing northward. Few chucks are detected on BBS routes in Illinois (route index of 0.00 to 0.02 for 1999-2009), though detections have declined (-10.7% per year from 1968-2009, 95% CI of -17.5 to -4.0 %/year). The Illinois Breeding Bird Atlas detected chucks in 32 of 1286 blocks sampled; nesting was confirmed in just one block (Kleen et al. 2004). From 2008-2010, the Illinois Monitoring of Owls and Nightjars project has detected chucks in 2 of 4 years, on no more than 1 route/year (<http://www.inhs.illinois.edu/research/MOON/>).

Breeding season records to *Meadowlark: A Journal of Illinois Birds* for the past 3 years are summarized below. Unless noted, records are for single individuals detected. Records represent at least 7 sites, including at least 4 IDNR sites (Bailey 2010, 2011, in press).

2009

Stephen A Forbes State Park, Marion County (nest); Ferne Clyffe State Park, Johnson County (21); Big River State Forest, Henderson County (2)

2010

Big River State Forest, Hardin Township, Pike County; Ferne Clyffe State Park (3)

2011



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Hamilton County (3); Ferns Clyffe State Park (3); Goose Lake Township, Grandy County; Big River State Forest (2); Stephen A Forbes State Park; Sam Dale State Fish & Wildlife Area, Wayne County

G. Information on regulatory protections and conservation activities initiated or currently in place that may or may not protect the species or its habitat.

In 2005, chuck-will's-widow was identified as a "Species in Greatest Need of Conservation" in the Illinois Wildlife Action Plan, due to low population size and/or significantly decreased abundance from historical levels. To my knowledge, conservation actions (such as forest management) have not been undertaken explicitly with the intent of benefiting this species.

H. Information regarding the status of the species over all or a significant portion of its range.

Across the US, BBS data suggest a decline of 2.0%/year, 1966-2009. Chucks are not listed as endangered or threatened in any other state.

I. Supporting documentation in the form of copies of reprints of pertinent publications, data, reports or letters from authorities, and maps.

The ESPB may consult information already in our files for a subject species, but will only conduct additional research as time and resources allow when evaluating whether a listing recommendation presents substantial information indicating listing may be warranted. Therefore, to ensure that we will consider any supporting documentation you reference, you should provide either electronic or hard copies of any supporting materials cited in the recommendation, or valid links to public websites where the cited materials can be accessed; these materials should be in English. If you do not, we may at our option contact you to obtain supporting documentation. However, if you do not provide the supporting documentation, and it is not otherwise readily available in our files, we will be unable to consider this information in making our finding. In addition, we request that you provide literature citations that are specific enough to allow us to easily locate within the documentation the particular information cited in the petition, including page numbers or chapters, as applicable.

Provide specific citations here:

Bailey, SD. 2010. Field notes: the 2009 breeding season. *Meadowlark: A Journal of Illinois Birds* 19:14-44.

Bailey, SD. 2011. Field notes: the 2010 breeding season. *Meadowlark: A Journal of Illinois Birds* 20:10-40.

Bailey, SD. In press. Field notes: the 2011 breeding season. *Meadowlark: A Journal of Illinois Birds* 21:xx-xx.

Behlen, HD. 1989. *The birds of Illinois*. Indiana University Press.

Illinois Monitoring of Owls and Nightjars (MOON): <http://www.inhs.illinois.edu/research/MOON/>

Kleen et al. 2004. *The Illinois breeding bird atlas*. Illinois Natural History Survey Special Publication 26.

Sauer, J. R., J. E. Hines, J. E. Fallon, K. L. Pardieck, D. J. Ziolkowski, Jr., and W. A. Link. 2011. *The North American Breeding Bird Survey, Results and Analysis 1966 - 2009. Version 3.23.2011 USGS Patuxent Wildlife Research Center, Laurel, MD.* <http://www.mbr-pwrc.usgs.gov/bbs/>

Straight, Carrie A. and Robert J. Cooper. 2000. Chuck-will's-widow (*Caprimulgus carolinensis*). *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bnaproxy/birds.cornell.edu/bna/species/499>



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Walk et al. 2010. Illinois Birds: A century of Change. Illinois Natural History Survey Special Publication 31.

Provide a list of attachments here:

Bailey, SD. 2010. Field notes: the 2009 breeding season. *Meadowlark: A Journal of Illinois Birds* 19:14-44.

Bailey, SD. 2011. Field notes: the 2010 breeding season. *Meadowlark: A Journal of Illinois Birds* 20:10-40.

Bailey, SD. In press. Field notes: the 2011 breeding season. *Meadowlark: A Journal of Illinois Birds* 21 xxx-xxx.

Chuck-will's-widow, *Caprimulgus carolinensis* (Additional info and data, Mankowski 05/12)

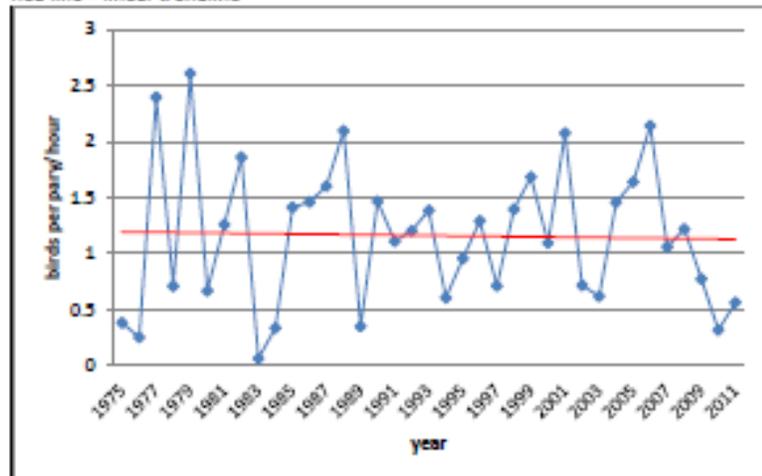
Recommended for listing as Illinois-threatened

From Illinois Spring Bird Count data,

(I know some of this data is problematic in using for nocturnal birds, but.....did it anyway)
data from INHS, I summed all counties for each year and generated these.

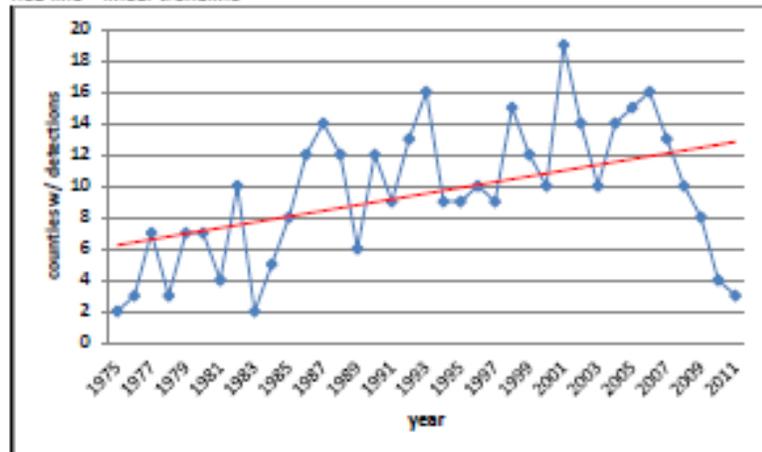
Blue line = birds per party/hour, statewide

Red line = linear trendline



Blue line = counties with detections, statewide

Red line = linear trendline



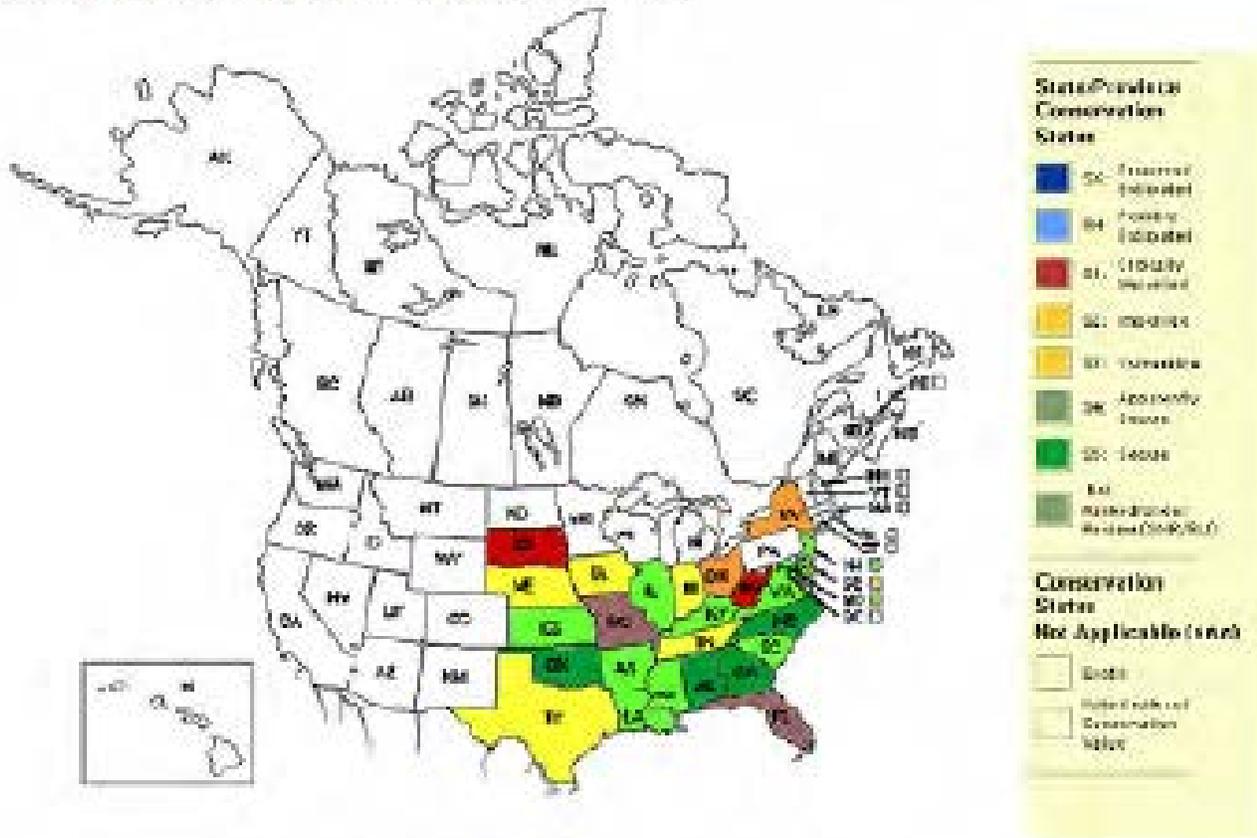
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Chuck-will's-widow *Caprimulgus carolinensis*



NatureServe. 2011. NatureServe Explorer. An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. [Accessed May 3, 2013].



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Chuck-will's-widow *Caprimulgus vociferans*

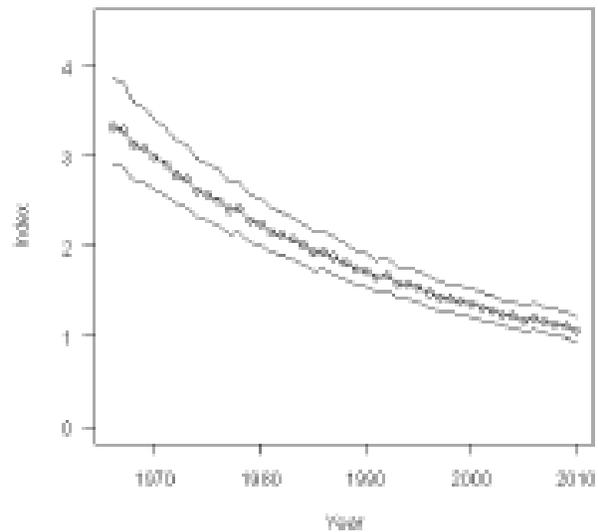
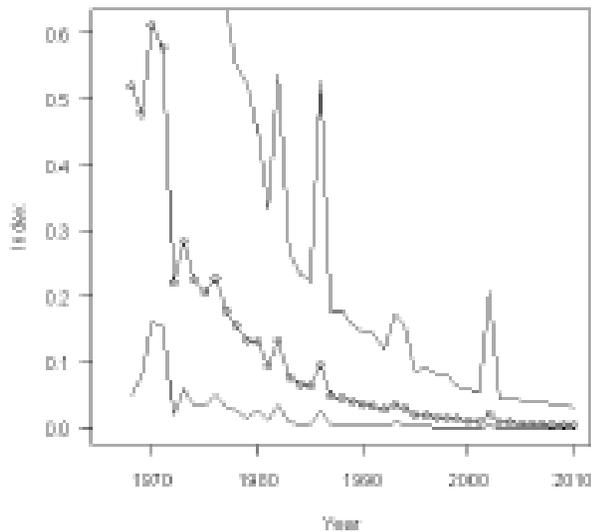
North American Breeding Bird Survey Trend Results:

|-----1966-2010 trends-----| |-----2000-2010-----|

Region	N	Trend (95% CI)	Trend (95% CI)	R.A.
Eastern BBS Region	484	-2.5 (-2.9, -2.1)	-2.4 (-3.2, -1.6)	1.9 0.3
Illinois	4	-10.8 (-17.8, -3.8)	-10.6 (-27.5, 14.4)	0.0

Illinois – credibility red

Eastern Region – credibility blue



Preliminary listing decision summary from agenda item 5 of the 05/16/2012 special meeting
 Dr. Walk reviewed his nomination for listing as threatened Chuck-will's widow because it is a species that was formerly more widespread in Illinois, but has shown significant declines which may lead to extirpation from the state due to habitat destruction, collecting, or other pressures resulting from the development of Illinois. The ESPB TECs discussed the data available for the species and agreed that based on the data and due to the fact that its distribution in Illinois is restricted to such a small area of the southern part of the state, a recommendation for listing as threatened seemed warranted. Ms. Mankowski confirmed with the ESPB TECs that they could generate element occurrence reports for the species to have entered into the Illinois Natural Heritage (Biotics 4) Database, there was some discussion about limitations of the IDNR element occurrence reporting forms, and then she concluded the species discussion.

Following discussion, Vice –chair Kruse **moved** to list as threatened the Chuck-will's widow, Dr. Hofmann seconded the motion and it was **approved** unanimously.



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Falco peregrinus (Peregrine Falcon) - Proposed Action: remove from threatened

Reviewed at: the 05/16/2012 special meeting and the 161st meeting, 02/21/2014; meeting minutes may contain additional information and discussion

Updated species review, Mankowski 01/2014

Peregrine falcon, *Falco peregrinus* (Illinois threatened)

(EO = element occurrence and is roughly equivalent to a breeding record for one or more local pairs)

Illinois – Natural Heritage (Biotics 4) Database

Data as of 03/2012

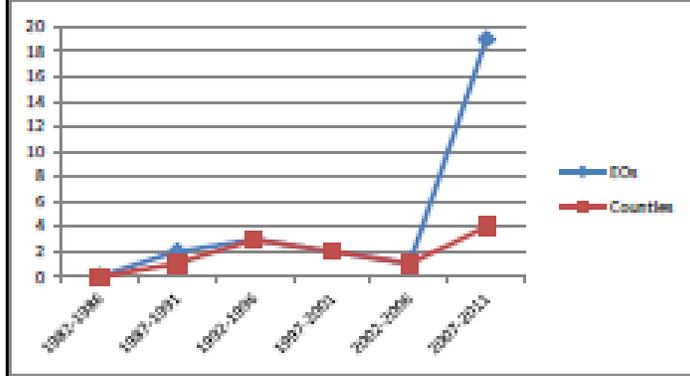
Last observed	Total # EOs	Total seen since Jan 2002	# protected occurrences	# topo quads
7/8/2010	29	21	2	13

Data as of 01/2014

Last observed	Total # EOs	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since Jan 2002
6/7/2013	43	34	3	17	10	8

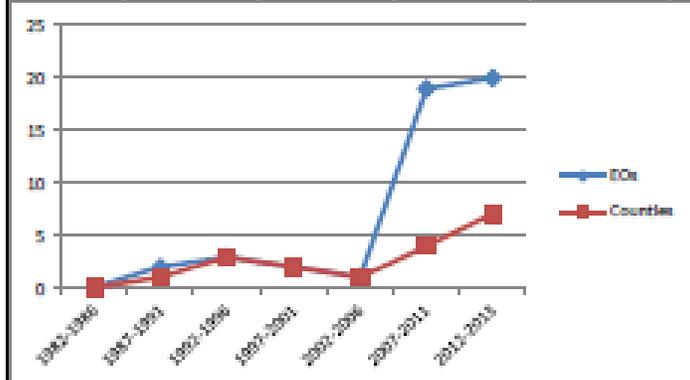
Data as of 03/2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
EOs	0	2	3	2	1	19
Counties	0	1	3	2	1	4



Data as of 03/2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012-2013
EOs	0	2	3	2	1	19	20
Counties	0	1	3	2	1	4	7



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Status review triggers (reclassification goals) approved by the Illinois Endangered Species Protection Board in (Herkert) 2000, with amendment in 2009.

The proposed status review criteria represent measures of distribution and abundance to prompt the Endangered Species Protection Board to review the status of the species and consider a change in status. Status review criteria do not prompt an 'automatic' change in status, and the Endangered Species Protection Board may review the status or status review criteria of the species at any time.

Reclassification Goals (2000)

Threatened -- The overall goal for reclassification from endangered to threatened status in Illinois is to maintain a healthy, productive population that is at low risk of statewide extirpation within the foreseeable future. Low risk is hereby defined as a less than 3% chance of statewide population extirpation (as estimated by the population viability models) within the specified planning period; and foreseeable future is defined as the next 50 years. Once this population level is achieved, it should be sustained for a period of at least three years before reclassification is proposed. Peregrine falcon productivity within the state also should equal or exceed productivity averages for the region. Average productivity for the eastern U.S. peregrine falcon population averaged 1.5 young/pair between 1992-1998 (USFWS 1999). Therefore the productivity goal for reclassifying peregrine falcons in Illinois to threatened status is an average of 1.5 naturally produced young/pair (measured as a 3-year average ending with the most recent year). Fledglings that require human intervention to ensure their survival should not count in this total, since the population must be self-sufficient in order to be considered recovered. Under current conditions this goal would require a stable population of at least 6 pairs of birds naturally producing an average of at least 9 young for a period of at least three years.

Delisted -- The overall goal for delisting the peregrine falcon in Illinois is to maintain a healthy, productive population that is at very low risk of statewide extirpation within the foreseeable future. Very low risk is hereby defined as a less than 1% chance of statewide population extinction (as estimated by the population viability models) within the specified planning period; and foreseeable future is defined as the next 50 years. Once this population level is achieved, it should be sustained for a period of at least three years before delisting is proposed. Peregrine falcon productivity within the state also should equal or exceed productivity averages for the region. Average productivity for the eastern U.S. peregrine falcon population averaged 1.5 young/pair between 1992-1998 (USFWS 1999). Therefore the productivity goal for delisting peregrine falcons in Illinois is an average of 1.5 naturally produced young/pair (measured as a 3-year average ending with the most recent year pair). Fledglings that require human intervention to ensure their survival should not count in this total, since the population must be self-sufficient in order to be considered fully recovered. Under current conditions this goal would require a stable population of at least 12 pairs of birds naturally producing an average of at least 18 young for a period of at least three years.

Amendment (2009)

That the Board would delay listing status review until after a time when the IDNR had in place a post-listing management and monitoring plan.

Nesting peregrine falcon population data in Illinois, 1988-2013 (Updated with 2012 and 2013 data 8/10 01/06/14)

Year	# Breeding Pairs	Total # of Young Produced	Total # Young Produced/Nest	Total # of Naturally Produced Young	Total # of Naturally Produced Young/Nest
1988	1	2	2.0	N/A	N/A
1989	2	3	1.5	N/A	N/A
1990	1	0	0.0	N/A	N/A
1991	1	0	0.0	N/A	N/A
1992	1	3	3.0	N/A	N/A
1993	1	3	3.0	N/A	N/A
1994	4	6	1.5	N/A	N/A



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1995	4	8	2.0	N/A	N/A
1996	3	4?	0.8	2	0.8
1997	3	7	1.4	4	1.4
1998	4	11	2.7	6	1.5
1999	3	11	2.2	9	1.8
2000	8	19	2.4	7	0.9
2001	10	21	2.1	18	1.8
2002	10	21	2.1	16	1.6
2003	10	23	2.3	17	1.7
2004	10	29	2.9	21	2.1
2005	10	26	2.6	18	1.8
2006	12	30	2.5	19	1.6
2007	12	25	2.1	20	1.7
2008	12	24	2.0	19	1.6
2009	13	33	2.5	27	2.1
2010	13	26	2.0	19	1.5
2011	20	43	2.2	35	1.8
2012	24	47	2	33	1.4
2013	13	31	2.4	30	2.3

ESPB staff review, recommendation: Data warrant review for consideration of a change in listing status.

Recommend delisting the species. (Updated with 2011 data, 06/13/12). (Updated with 2012 and 2013 data, a/o 01/06/14).

The reclassification goals -

Productivity goal for delisting peregrine falcons in Illinois of an average of 1.5 naturally produced young/pair (measured as a 3-year average ending with the most recent year pair). This goal has been met - 3-year average ending in 2010 was 1.7. The 3-year average ending in 2011 was 1.8. The 3-year average ending in 2013 was 1.8.

Stable population of at least 12 pairs of birds naturally producing an average of at least 18 young for a period of at least three years. This goal has been met – 3-year average ending in 2010 was 12.6 pairs naturally producing an average of 21.6 young. The 3-year average ending in 2011 was 15.3 pairs naturally producing an average of 27.0 young. The 3-year average ending in 2013 was 19 pairs naturally producing an average of 32.6 young.

Amendment for IDNR to have in place a post-listing management and monitoring plan. This has been met. The IDNR completed a post-listing management and monitoring plan, with Board review and comment, in the spring of 2012. The plan calls for using the Board's previously approved reclassification thresholds for re-listing, should monitoring data warrant such action in the future.

Mankowski recommendation: Reclassification goals have been met or exceeded since the 2009 review and revision of the List and an IDNR post-listing management and monitoring plan is in place – delist from threatened.

Updated element occurrence distribution dot maps were not produced for this current review.

Updated NatureServe conservation status ranking map was not queried for this current review.

Updated USGS North American Breeding Bird Survey Trend Results was not queried for this current review.



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Preliminary listing decision excerpts from agenda item 5 of the 05/16/2014 special meeting minutes

Ms. Mankowski reviewed that IDNR Natural Heritage (Biotics 4) Database element occurrence data through 2010 had exceeded the ESPB approved listing status review trigger for considering a change in status from threatened to delisted due to recovery as established in the ESPB's Peregrine Falcon (*Falco peregrinus*) Reclassification Goals (2000) and in ESPB amendments to the goals established in 2009. Several ESPB TECs and Board members Taft and Hofmann indicated that they were not comfortable that the statewide population and productivity numbers previously approved by the Board constituted a viable population in the state and expressed concern about what would happen if those numbers dropped-off following delisting. Ms. Mankowski reviewed that the listing status thresholds established by the ESPB in 2000 will act as triggers for the Board to consider relisting the species if population and productivity numbers fall below those thresholds in the future and that the Board can consider listing actions during its 5-year List reviews or at any interim time if and when sufficient evidence is brought forth. She indicated that prior to the Board finalizing its Illinois List pursuant to the revision ending in 2014, she would review 2011 and 2012 database information for the species to confirm that population and productivity numbers remained above established ESPB thresholds.

Preliminary listing decision summary from agenda item 12 of the 161st meeting, 02/21/2014

Ms. Mankowski reviewed the updated species review for the Peregrine Falcon (*Falco peregrinus*), noted that the Board's approved reclassification criteria had been satisfied for several years running, and recommended delisting the species due to recovery. Dr. Walk **moved** to approve delisting Peregrine Falcon (*Falco peregrinus*) from Illinois threatened due to recovery and Ms. Masi seconded the motion. The Board voted and the motion was **approved**, with members Beyer-Clow, Gooch, Hofmann, Masi, Robinett, Ross, and Walk voting for and Dr. Taft voting against.



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Tyto alba (Barn Owl) - Proposed Action: change from endangered to threatened

Reviewed at: the 05/16/2012 special meeting; mtg minutes may contain additional information and discussion

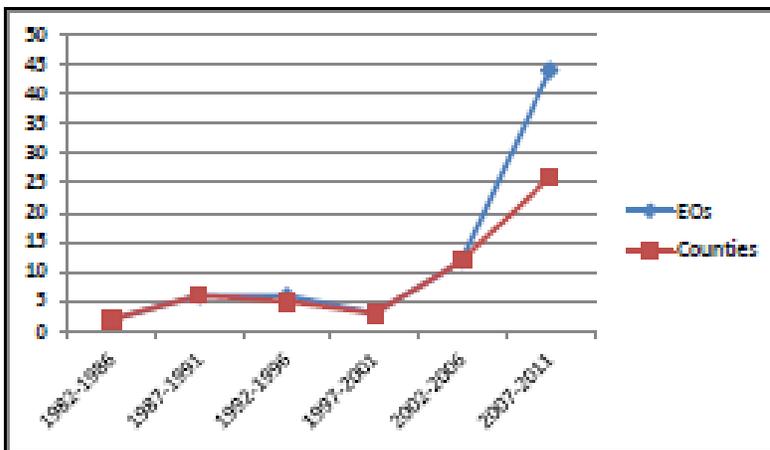
Barn owl, *Tyto alba* (Illinois endangered)

(EO = element occurrence and is roughly equivalent to a breeding record for one or more local pairs)

Illinois – Natural Heritage (Biotics 4) Database

Last observed	Total # EOs	Total seen since Jan 2002	# protected occurrences	# topo quads
9/27/2011	73	58	2	37

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
EOs	2	6	6	3	12	44
Counties	2	6	5	3	12	26



Status review triggers approved by the Illinois Endangered Species Protection Board upon approval of the Illinois Barn Owl Recovery Plan (2010).

The proposed status review criteria represent measures of distribution and abundance to prompt the Endangered Species Protection Board to review the status of the species and consider a change in status. Status review criteria do not prompt an 'automatic' change in status, and the Endangered Species Protection Board may review the status or status review criteria of the species at any time.

We recommend the Illinois Endangered Species Protection Board 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 13 counties are reported within a 3-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 3-year period, and other threats to the population are low.

ESPB staff review, recommendation: Data warrant review for consideration of a change in listing status. Recommend a change in listing status from endangered to threatened.

The status review trigger for considering a change from endangered to threatened is when 40 active nest sites distributed among at least 13 counties are reported within a 3-year period. This threshold has been exceeded - for the five-year period ending in 2011, there were 44 nest sites in 26 counties.



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Element occurrences locations for respective time periods and all.



1952-1996



1997-2001



2002-2006



2007-2011



All



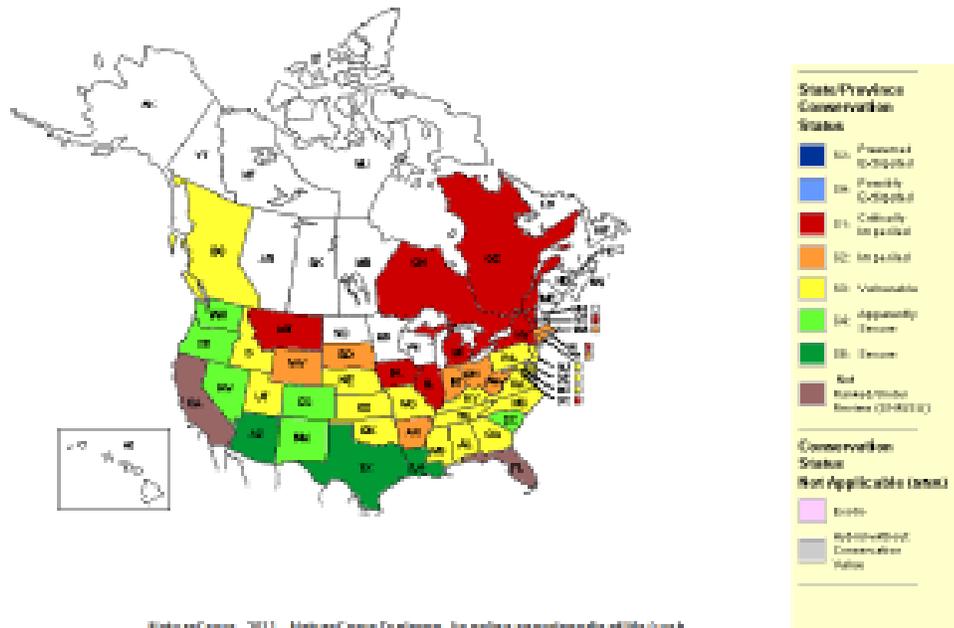
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Tyto alba



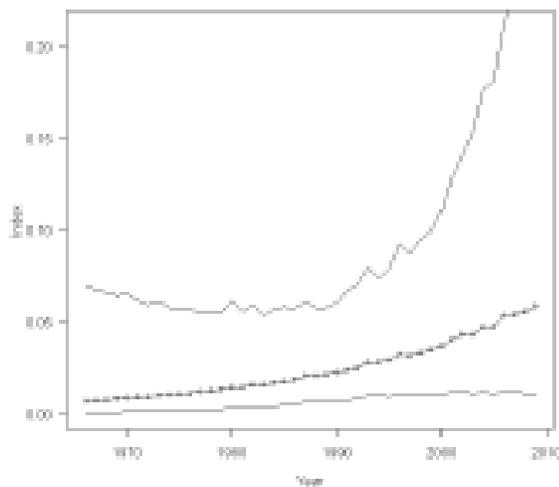
NatureServe, 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 2, 2012).

Barn Owl *Tyto alba*

North American Breeding Bird Survey Trend Results

Region	N	Trend (95% CI)	Trend (95% CI)	R.A.
Eastern BBS Region	23	4.9 (-3.2, 14.1)	5.3 (-5.5, 18.9)	0.0

Eastern Region – credibility red



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Preliminary listing decision summary from agenda item 5 of the 05/16/2014 special meeting minutes

Ms. Mankowski reviewed that IDNR Natural Heritage (Biotics 4) Database element occurrence data through 2011 had exceeded the ESPB approved listing status review trigger for considering a change in status from endangered to threatened as established in the Illinois **Barn Owl (*Tyto alba*)** Recovery Plan (2010).

Chair Gooch thanked the ESPB TECs for birds for their participation in the Board's List review process and noted that the discussion they had provided during the current meeting constituted valuable advice to the Board. He then asked the Board for a motion relative to the ESPB staff listing status recommendations for birds. Vice-chair Kruse **moved** to approve as Board preliminary approval of revision to the Illinois List the ESPB staff recommendations as presented and Dr. Hofmann seconded the motion. Chair Gooch asked for any additional Board discussion noting that the Board would conduct a vote on any individual amendment that Board members proposed.

Following discussion of other species, but not for the Barn Owl (*Tyto alba*), Chair Gooch asked Vice-chair Kruse and Dr. Hofmann if they accepted the amendments to their original motion and they indicated acceptance. Chair Gooch then asked for a vote to approve as Board preliminary approval of revision to the Illinois List the ESPB staff recommendations as amended and presented below and it was **approved** unanimously.



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Mammals

Myotis leibii (Eastern Small-footed Bat) – Proposed Action: add as threatened

Reviewed at: 155th meeting, 08/10/2012 and 161st meeting, 02/21/2014; meeting minutes may contain additional information and discussion

Illinois Endangered Species Protection Board (ESPB) required 5-year review of the Illinois List of Endangered and Threatened Species (Illinois List) ending in 2014:

Form for ESPB Technical Expert Consultant (ESPB TEC) recommendation for adding a species to the Illinois List of Endangered and Threatened Species

Prepared by:
Anne Mankowski, Director
Illinois Endangered Species Protection Board
One Natural Resources Way
Springfield, IL 62702-1271
Office phone: 217-785-8687
Email: anne.mankowski@illinois.gov
March 2012

Complete one form for each species nomination. Fill-in all sections to the best of your ability with available information. Return the form and copies of attachments to Anne Mankowski.

A. Date: 06/11/12; updated 07/19/12; updated 02/02/14

B. Proposer Information

Name: Anne Mankowski
Address: ESPB; One Natural Resources Way; Springfield, IL 62702-1271
Phone number: 217-785-8687
Email address: anne.mankowski@illinois.gov
Title: Executive Director
Institution/Organization affiliation: IL Endangered Species Protection Board

C. The scientific and common name, including nomenclature citation, of any species involved (the ESPB may elect to use the common name identified by NatureServe).

Scientific Name: *Myotis leibii*
Common Name: Eastern Small-footed Myotis
Nomenclature Citation: Audubon and Bachman, 1842

D. Identification of the specific listing status recommended – endangered or threatened – and reference to specific ESPB listing criteria that are affecting the species, including where these factors are acting upon the species, the magnitude and imminence of these factors, and whether, either singly or acting in combination, these factors may cause the species to be an endangered or threatened species (endangered = at risk of extinction in the wild in Illinois; threatened = likely to become endangered in the wild in Illinois within the foreseeable future).

Recommend listing as endangered

Recommend listing as threatened

Identify which ESPB listing criteria are affecting the species and for which your proposal provides supporting evidence:

- 1. Species or subspecies designated as federally endangered or threatened.



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2. Species proposed for Federal Endangered or Threatened status that occurs in Illinois.
3. Species which formerly were more widespread in Illinois but have shown significant declines which may lead to extirpation from the State due to habitat destruction, collecting, or other pressures resulting from the development of Illinois. This includes species which:
 - a. are experiencing reproductive impairment;
 - b. have experienced a range reduction;
 - c. occur in reduced numbers even though range or number of populations remains steady.
4. Species which are low in numbers and for which known or potential threats are likely to cause significant declines, including:
 - a. species which exhibit very restricted geographic ranges, of which Illinois is a part;
 - b. species which exhibit restricted habitats or low populations in Illinois;****
 - c. species which are significant disjuncts in Illinois, i.e., the Illinois population is far removed from the rest of the species' range.

E. Biological information on the species (including habitat and life-history traits) that is relevant to determining whether a species may be endangered or threatened.

Not addressed at this time.

F. A detailed narrative justification for the recommended measure, describing, based on available information, past and present numbers and distribution of the species involved (location information should include lat/long coordinates and other information necessary to add a record to the Natural Heritage (Biotics 4) Database) and any threats faced by the species; it is most helpful if this narrative contains an analysis of the information presented.

I am requesting review and comments from ESPB TECs and Board members regarding listing consideration. My recommendation at this time is that the species not be listed because 1) known occurrence data is not sufficient to demonstrate the species is a persistent resident/breeder or otherwise significantly uses the area that is Illinois and I would like to see another year or two of occurrence data to better confirm and 2) wait to see what is the outcome of the USFWS review. See also ESPB discussion re: IL cave bat status from the 149th mtg, begins page 43.

Updated information for 08/10/12 ESPB mtg iteration:

Dr. Tim Carter provided comments that he supports listing the species and believes the species is not transient because the 2011 animals were found in the same location as the incidental occurrence observed by Steffen in 2003 and that based on his observations, once bats are found in a location, they are typically residents and not transient. He also commented that he believes there is evidence of breeding because both genders and juveniles were observed in 2011 (Tim Carter, personal communication 06/18/12 and 06/29/12). No new evidence was provided.

Mankowski comment: I appreciate the evidence of breeding from the 2011 observations. However, regarding persistence – the 2003 observations were described as uncertain as to whether they were migrants, and I would like to see at least another year of survey data to demonstrate that what we are seeing is not a 3/6-year cycle pulse where the species expands into IL every few years, but is not actually a persistent resident. I would like to hear from other ESPB TECs regarding the issue.

*Dr. Ed Heske provided comments that he supports listing the species, noting that while the status of this bat in southern Illinois is not clear, with so few records, it seems to fall into a similar category as *Corynorhinus* and *M. austroriparius* at the least, and is listed in all other states where it occurs so may be even more vulnerable (Ed Heske, personal communication 06/18/12). No new evidence was provided.*

*Mankowski comment: I reiterate my desire for additional years of data for this species. With respect to the *C. rafinesquii* (Rafinesque's Big-eared Bat) and *M. austroriparius* (Southeastern Myotis), while the*



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reason for listing would be the same, the listing decisions for those species did consider multiple years of records and survey data.

Currently known Illinois records:

1993. Two animals (males), Pope County (exact location unknown), No specific date 1993. Field Museum collections (Cat # 150639 and 150632). (Tara Kieninger, IDNR Natural Heritage Database, personal communication 03/21/12; and, Dr. Tim Carter, Ball State University, personal communication via Tara Kieninger, 03/21/12).

2005. Two animals (one male, one female) documented in Pope County, November 4, 2005 (Steffen, B.J., T.L. York Osborne, T.C. Carter, G.A. Feldhamer. 2006. The first record of Eastern small-footed *Myotis* (*Myotis leibii*) in Illinois. *Transactions of the Illinois State Academy of Science*. 99(1&2):87-89.

2011. July 25 – August 16, 2011. No *M. leibii* were captured during two nights of mist-netting. Fifteen rock outcrops were searched by hand. Twenty-nine *M. leibii* were observed on 8 rock outcrops in an ~9 km² area of Johnson and Pope Counties (Table 1). Two females were discovered using the same roost as a juvenile, including one post-lactating female. Other bats were observed roosting singly or in small groups up to 5. *Myotis leibii* were unable to be located on 7 rock outcrops. One voucher specimen was taken and stored in the mammalogy collection of Ball State University. (Tara Kieninger, IDNR Natural Heritage Database, personal communication 08/16/11 and 03/21/12; and, Whitby, M.D., S.M. Bergeson, S.A. Rutan, T.C. Carter. 2011. Annual Report to the US Forest Service, Project USDA-FS-PA-11090800-23, Monitoring Indiana Bat Maternity Colonies in Southern Illinois, Appendix I. 36 pp.)

2012. August. Several locations at what would be approximately five database (NatureServe) element occurrences across three counties (Tim Carter, pers comm. 08/09/2012). From one to ten individuals were reported across the locations. This information was reviewed during the ESPB 133 meeting, held 08/10/2012 and evaluated as part of the Board's preliminary approval for listing the species as threatened. The Board also requested another year of survey data before confirming its preliminary decision. (Separate figure displayed during 02/21/2014 ESPB meeting to facilitate discussion, but not included in this current review so as not to disclose specific location information.)

G. Information on regulatory protections and conservation activities initiated or currently in place that may or may not protect the species or its habitat.

Species is currently under review by USFWS: a not-warranted 12-month finding or proposed listing/critical habitat rule determination scheduled by end of FFY2013. The federal decision not to list the eastern small-footed bat published in the Federal Register, October 2, 2013 (USFWS 2013).

H. Information regarding the status of the species over all or a significant portion of its range.

From USFWS 90-day finding on the Center for Biological Diversity's petition to list the eastern small-footed and the northern long-eared bats as threatened or endangered under the authority of the Endangered Species Act (ESA).

The deaths of individuals of both species have been linked to WNS across portions of their ranges. The confirmation of WNS across large portions of the eastern small-footed bat's range and eastern sections of the northern long-eared bat's range, along with the historical and anticipated future rate of WNS spread, indicate that WNS may negatively impact large portions of the petitioned species' ranges in the near future.



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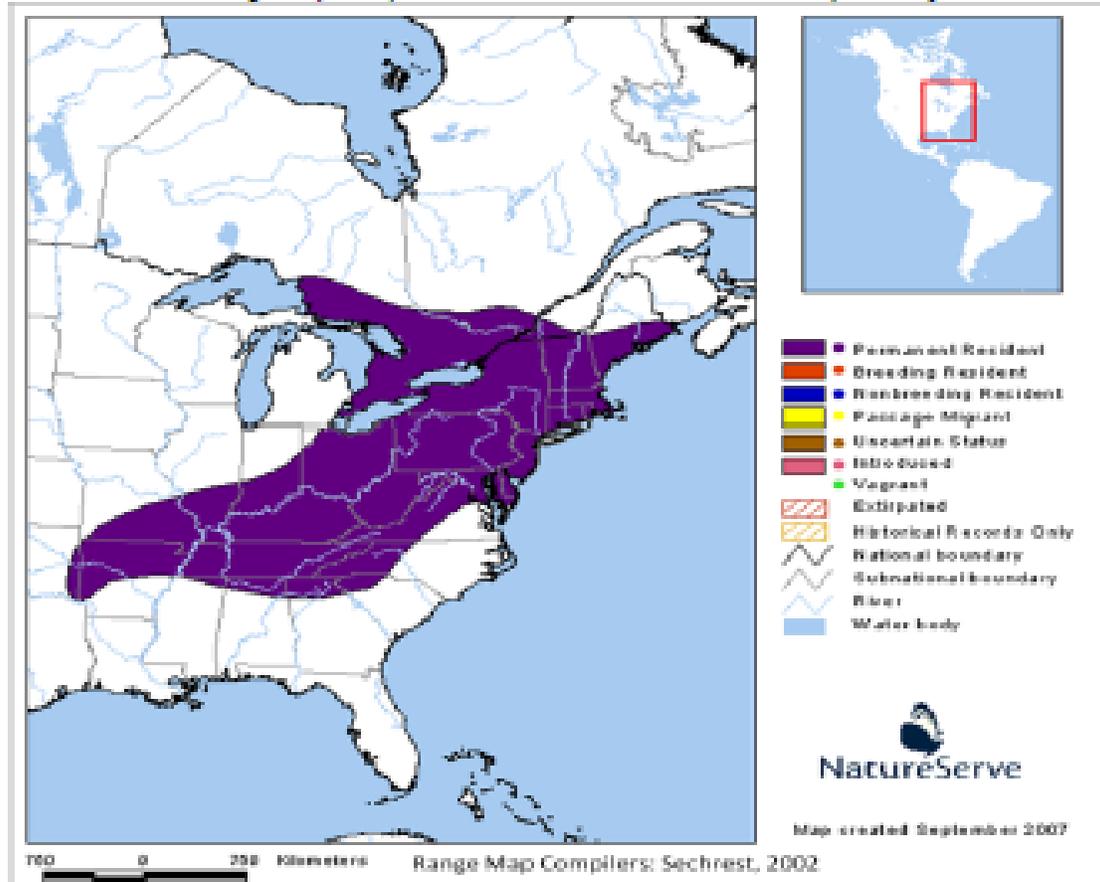
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The USFWS recently evaluated the species in a 12-month finding on a petition for listing as endangered or threatened. The 12-month finding published notice that listing was not warranted. Multiple factors were included in the federal review, with demonstrated and estimated range-wide impacts from White Nose Syndrome (WNS) predominant. Determinations reported in the 12-month finding were that WNS does not appear to have caused a significant population decline in hibernating eastern small-footed bats – noting that a comparison of the most recent pre-WNS count to the most recent post-WNS count, Turner et al. (2011, p. 22) reported a 12-percent decline in the number of hibernating eastern small-footed bats at 23 hibernacula in New York, Pennsylvania, Vermont, Virginia, and West Virginia (USFWS 2013).

NatureServe range map - map notes indicate that no records actually known from Illinois.



NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: June 12, 2012).



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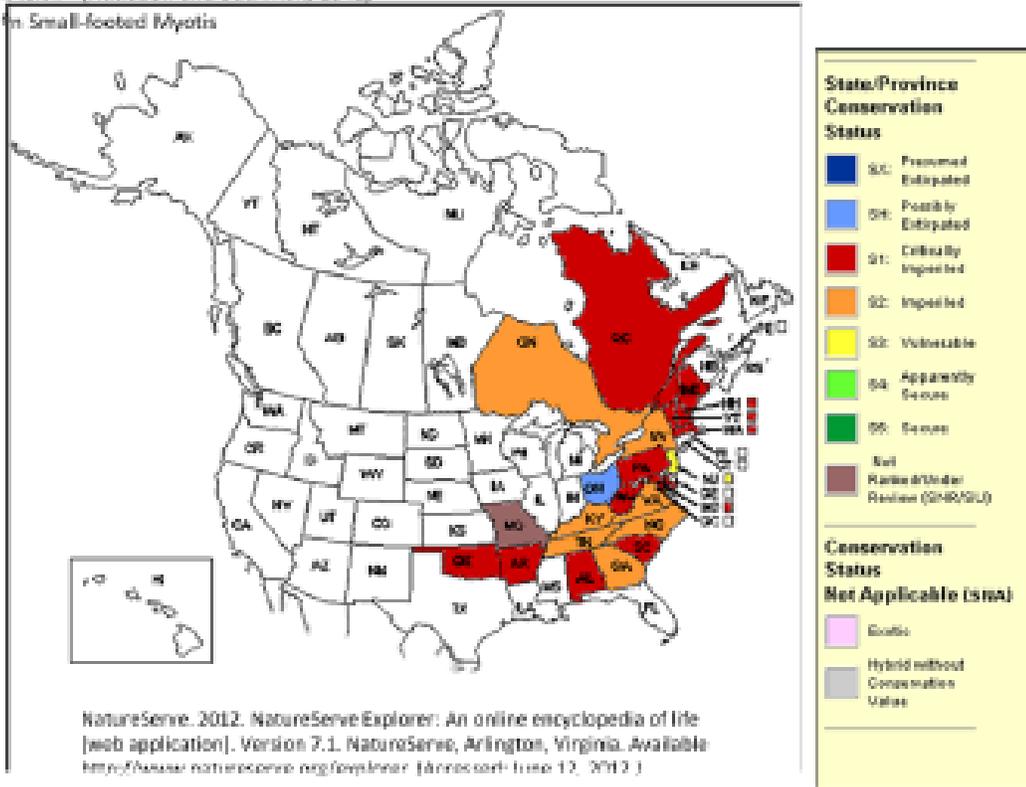
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Myotis grisescens (Audubon and Bachman, 1842)

Eastern Small-footed Myotis



I. Supporting documentation in the form of copies of reprints of pertinent publications, data, reports or letters from authorities, and maps.

The ESPB may consult information already in our files for a subject species, but will only conduct additional research as time and resources allow when evaluating whether a listing recommendation presents substantial information indicating listing may be warranted. Therefore, to ensure that we will consider any supporting documentation you reference, you should provide either electronic or hard copies of any supporting materials cited in the recommendation, or valid links to public websites where the cited materials can be accessed; these materials should be in English. If you do not, we may at our option contact you to obtain supporting documentation. However, if you do not provide the supporting documentation, and it is not otherwise readily available in our files, we will be unable to consider this information in making our finding. In addition, we request that you provide literature citations that are specific enough to allow us to easily locate within the documentation the particular information cited in the petition, including page numbers or chapters, as applicable.

Provide specific citations here:

50 CFR Part 17, Volume 78, Number 191, Part 3 - October 2, 2013. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List the Eastern Small-Footed Bat and the Northern Long-Eared Bat as Endangered or Threatened Species; Listing the Northern Long-Eared Bat as an Endangered Species; Proposed Rule.

Dr. Tim Carter, Ball State University, personal communication, 08/16/11. (Occurrence information)

Dr. Tim Carter, Ball State University, personal communication, 08/09/12. (Occurrence information)



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Public Hearing Documents: Individual species reviews and select Board discussion and determinations for species with ESPB preliminary approval for changes in listing status, addition to, or removal from, the Illinois List.

Tara Kieninger, IDNR Natural Heritage Database, personal communication 08/16/11 (Occurrence information)

Tara Kieninger, IDNR Natural Heritage Database, personal communication 03/21/12 (Occurrence information)

NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe. Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: June 11, 2012).

Staffen, B.J., T.L. York Osborne, T.C. Carter, G.A. Feldhamer. 2006. The first record of Eastern small-footed Myotis (Myotis leibii) in Illinois. Transactions of the Illinois State Academy of Science. 99(1&2):87-89. (Occurrence information).

Whitby, M.D., S.M. Bergeson, S.A. Rutan, T.C. Carter. 2011. Annual Report to the US Forest Service, Project USDA-FS-PA-11090800-23, Monitoring Indiana Bat Maternity Colonies in Southern Illinois, Appendix I. 36 pp. (Occurrence information).

Provide a list of attachments here:

N/A

Preliminary listing decision excerpts from agenda item 15 of the 155th meeting, 08/10/2012

Ms. Mankowski reviewed her proposal for possibly listing as threatened as a species which exhibits restricted habitats or low populations in Illinois the Eastern Small-footed Bat (*Myotis leibii*). She noted that only 2011 survey data was available for use in her review and she recommended that the Board secure an additional year or more of survey data to confirm the species is resident and persistent and reproducing before considering approval for listing. She explained that subsequent to her developing her proposal and prior to the meeting, Dr. Tim Carter had submitted to her survey data for 2012 that had just been collected. Dr. Carter reviewed his findings, noting evidence of reproduction, and answered questions from Board members and staff. Ms. Mankowski added that the species is under review by the USFWS for possible federal listing and the federal schedule plans for a determination by September 2013, so the Board's may have that to consider by the end of its List review and revision, as well. She then asked the Board if they wanted another year of survey data or if they felt the two years of data was sufficient for making a listing decision at this time. Chair Gooch recommended that Ms. Mankowski work to develop a contract for another year of survey work and to answer habitat questions and then asked if any Board member wanted to make a motion for listing at this time. Dr. Walk moved to add the Eastern Small-footed Bat (*Myotis leibii*) as threatened, Dr. Hofmann seconded the motion, and it was approved unanimously.

Preliminary listing decision summary from agenda item 12 of the 161st meeting, 02/21/2014

Ms. Mankowski reviewed that no additional survey work had been contracted, but data necessary to establish element occurrences in the Database had been confirmed and entered into the Database and she recommended adding Eastern Small-footed Bat (*Myotis leibii*) as an Illinois threatened species. Dr. Hofmann noted that she agreed with Ms. Mankowski's reasoning for a threatened status and moved to approve adding Eastern Small-footed Bat (*Myotis leibii*) as an Illinois threatened species, Mr. Robinett seconded the motion and it was approved unanimously.



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5-YEAR REVIEW AND REVISION ENDING IN 2014

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Myotis septentrionalis (Northern Long-eared Bat) – Action: add as threatened (proposed Fed E)

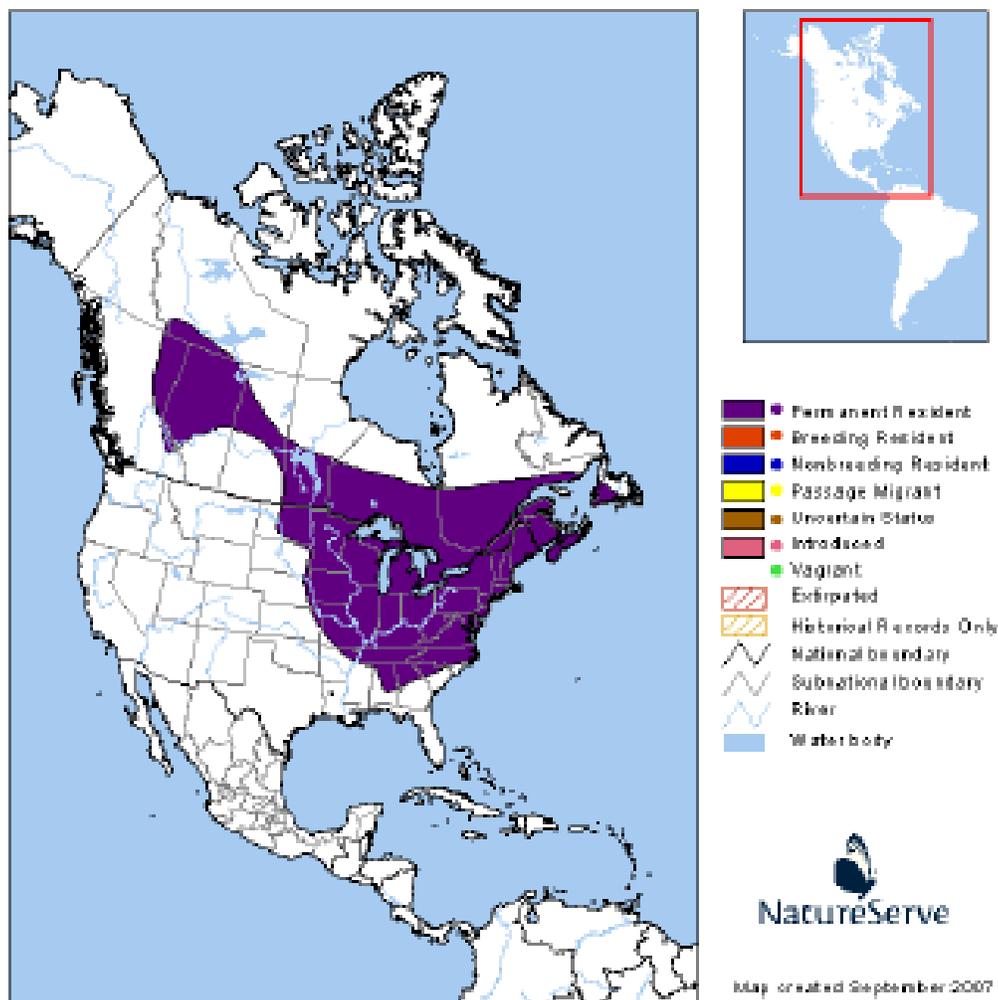
Reviewed at: 161st meeting, 02/21/2014; meeting minutes may contain additional information and discussion

Northern Long-Eared Bat (*Myotis septentrionalis*) Species Review, Mankowski, 02/2014

Federal Listing Status

The USFWS recently evaluated the species in a 12-month finding on a petition for listing as endangered or threatened. The 12-month finding published notice that listing was warranted, the species was proposed for listing as endangered, and announced a 60-day comment period (USFWS 2013).

Multiple factors were involved in the federal proposal for listing, with demonstrated and estimated range-wide impacts from White Nose Syndrome (WNS) predominant. Among other findings, the USFWS 12-month finding evaluation notes post WNS reduction of 98% for 6 cave species (including Northern long-eared bat) across 30 hibernacula in 3 states (USFWS 2013).



750 1500 Kilometers

NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: February 3, 2014.)

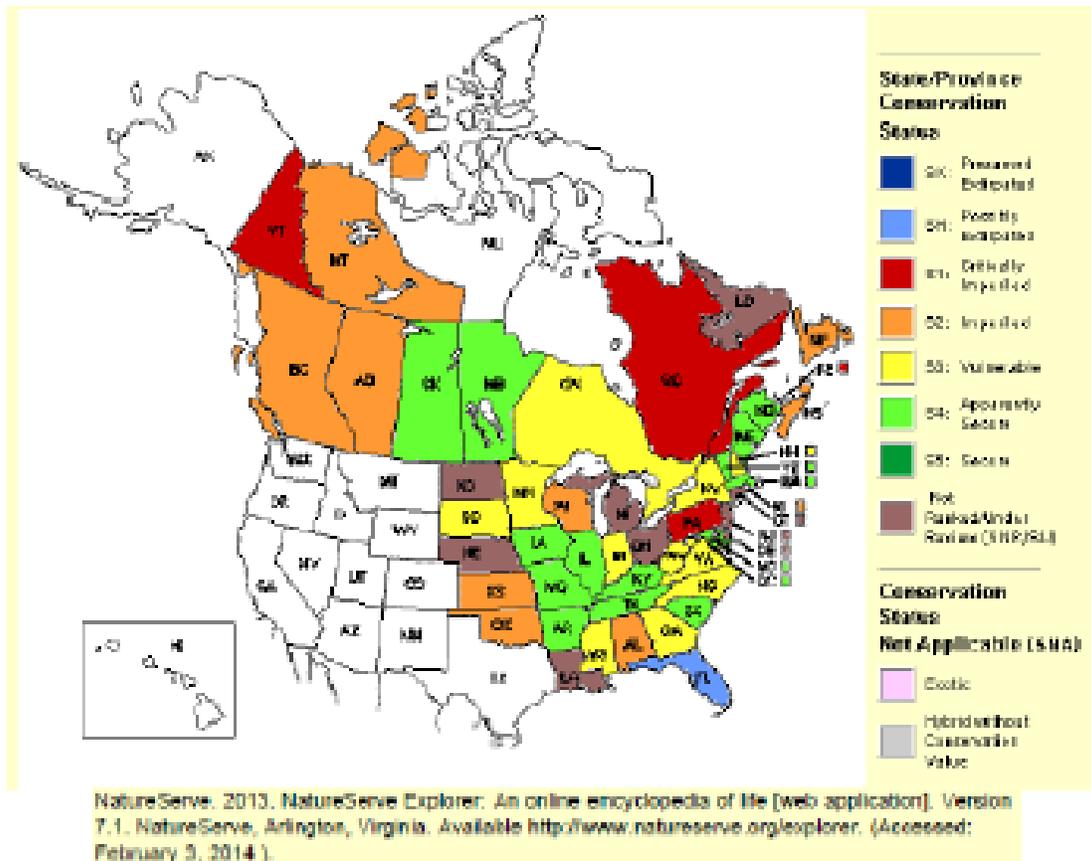


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Implications to Illinois Listing Status

Under Title 17 ILL ADM CODE, CH. 1, SEC. 1010, Illinois List of Endangered and Threatened Fauna, one criterion for Illinois listing is for species proposed for federal endangered or threatened status which occur in Illinois. This Ad Rule criterion should prompt Illinois listing of the Northern Long-Eared Bat during the current Illinois List revision.

Under the IL Endangered Species Protection Act, any federally designated endangered or threatened species is automatically listed on the IL List. This Act provision will automatically add the species to the Illinois List at the time when the USFWS finalizes federal listing.

Illinois Status and Distribution

The USFWS 12-month finding evaluation reports the species is proposed for listing as federally endangered throughout its range. Illinois is included in its range and is noted for both winter hibernacula (Illinois has 36 hibernacula; there are more than 780 hibernacula known for the species across its range) and summer roost habitat and occurrences. The evaluation summarizes some information for Illinois populations - Northern long-eared bats are regularly caught in mist-net surveys in the Shawnee National Forest in southern Illinois (Kath 2013, pers. comm.). Further, the average number of northern long-eared bats caught during surveys between 1999 and 2011 at Oakwood Bottoms in the Shawnee National Forest has been fairly consistent (Carter 2012, pers. comm.) (USFWS 2013).

Board requests to ESPB TECs and IDNR for survey information for several species in 2011 and specifically for Northern long-eared bat in November 2013 resulted in reports that are summarized below by county, hibernacula observations, summer/fall observations, and year. Note - at this time, it is the Board's understanding that there



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are many more observation reports for both hibernacula and summer/fall that have not yet been reported to the IDNR Database.

Summary of observation information from Board 2011 and 2013 requests for information
(As noted above, Illinois is also known for 36 hibernacula (USFWS 2013) that are not included below).

<u>County</u>	<u>Hibernacula observations</u>	<u>Summer/Fall observations</u>
Alexander	nearly annual 2003-2009	2010
Hardin	2009	2010
JoDaviess		2012
Pike		2010
Saline		annual 2006-2010
Union	annual 2004-2007, 2010	2009, 2010
Vermilion		1988, 1996, 2002, 2003
Will		2006, 2010, 2012
Across 30 counties ^a		1983-1993
Across 19 counties ^a		1996-2011

^a - these numbers are from the following Illinois Natural History Survey summer mist-netting information reported by Dr. Joyce Hofmann (personal communication)

1983-1996 141 capture records (might include some recaptures, so not the same as number of bats)

Caught at 46 of 163 netting sites

Capture % = 27.9

Caught in 30 counties

1996-present (2011) 97 capture records

Caught at 34 of 143 sites

Capture % = 23.4

Caught in 19 counties (probably netted fewer counties during this period because time was concentrated in northeastern Illinois)

The presence of White Nose Syndrome was confirmed in Illinois in 2012 (Joe Kath, personal communication); the Board has not received any report summarizing extent of occurrence or evidence of impacts upon any species.

Board Staff Recommendation

Add to the Illinois List as Illinois Threatened during the current List revision. Add notation of federal status when USFWS finalizes listing.

References:

50 CFR Part 17, Volume 78, Number 191, Part 3 - October 2, 2013. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List the Eastern Small-Footed Bat and the Northern Long-Eared Bat as Endangered or Threatened Species; Listing the Northern Long-Eared Bat as an Endangered Species; Proposed Rule.

Jeannie Barnes, IDNR Natural Heritage Database, personal communication 02/03/12 (Occurrence information compiled from Board requests for survey information).

NatureServe. 2014. NatureServe Explorer. An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, VA. Available at <http://www.natureserve.org/explorer>. (Accessed: February 3, 2014).



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Preliminary listing decision summary from agenda item 12 of the 161st meeting, 02/21/2014

This action does not require a public hearing by the Board, but can be done during the same cycle and process as the 2014 List revision.

Ms. Mankowski reviewed her species review for the Northern Long-eared Bat (*Myotis septentrionalis*) and recommended adding the species as Illinois threatened. Dr. Hofmann **moved** to approve adding Northern Long-eared Bat (*Myotis septentrionalis*) as an Illinois threatened species, Dr. Taft seconded the motion and it was **approved** unanimously.



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Orchotomys nuttallii (Golden Mouse) –Proposed Action: remove from threatened

Reviewed at: 155th meeting, 08/10/2012 and 161st meeting, 02/21/2014; meeting minutes may contain additional information and discussion

Updated species review, Mankowski 02/2014

Golden mouse, *Ochrotomys nuttallii* (Illinois threatened)

Listed as IL T, 12/31/1977

Reason for listing: restricted habitats or low pops in IL;

Ochrotomys nuttallii (Harlan)

GOLDEN MOUSE

MURIDAE

Status: Threatened in Illinois



Present Distribution: The golden mouse occurs throughout the southeastern quadrant of the United States from eastern Texas and Oklahoma east to the Atlantic coastal states from Virginia to Florida. Southern Illinois is at the northernmost edge of its range (Feldhamer and Paine 1987, Hoffmeister 1989). There are recent (since 1990) records of the golden mouse from Alexander, Gallatin, Hardin, Johnson, Pope, Saline, and Union counties, but this species also may be present in Jackson and Williamson counties.

Former Illinois Distribution : The present distribution of the golden mouse is probably similar to its former range in the state. There is one old report from Marion County near Salem (Cory 1912), but this record has been questioned by Hoffmeister (1989).

Habitat: In Illinois, the golden mouse inhabits dense thickets in a variety of wooded habitats including bottomland hardwood forests, pines, drainage-ways, abandoned upland fields, roadside rights-of-way and successional sites dominated by cedar (Andrews 1963, Blus 1966). This species appears to be dependent on the presence of a dense understory including honeysuckle, catbrier, and grape (Klimstra and Roseberry 1966, Feldhamer and Paine 1987, Hoffmeister 1989). Populations of golden mice are usually small and isolated with densities that range from 1-12 mice per ha (Andrews 1963).

Reason For Status: Golden mice occur primarily in the Shawnee Hills Natural Division within Illinois. Although recent surveys have documented a number of locations within the state, populations at these sites are generally small. The discontinuous distribution and specific habitat requirements qualify this species as a potentially threatened member of the Illinois fauna.

Management Recommendations: The current distribution and numbers of this species in Illinois should be closely monitored. Consideration should be given to appropriate habitat management where golden mice occur on public lands.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals*. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.



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Illinois – Natural Heritage (Biotics 4) Database – last updated, May 2012 Updated review, Mankowski 02/2014

(EO = element occurrence and is roughly equivalent to one or more local individuals; last observed data = most recently observed for each occurrence and observations from previous years for respective occurrences are not illustrated.)

Data s/o 05/2012

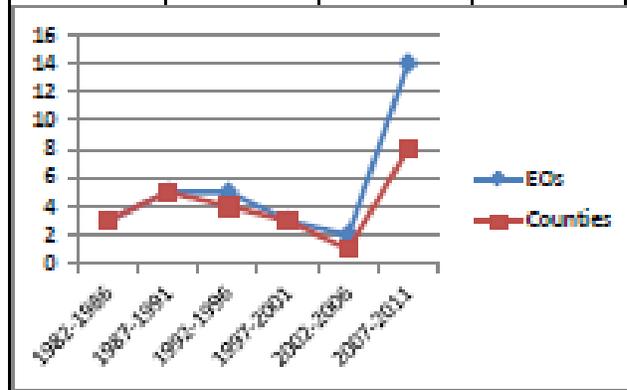
Last observed	Total # EOs	Total seen since Jan 2002	# Counties	# protected occurrences	# topo quads
2008-10	34	16	8	4	30

Data s/o 01/2014

Last observed	Total # EOs	last observed through 01/01/02 - 12/31/11	last obs 1/1/12 - 12/31/13	Total Eos w/last obs 1/1/02 - 12/31/11	Total Eos w/last obs 1/1/12 - 12/31/13	# protected Eos	# topo quads	total counties	counties 1/1/02 - 12/31/11	counties 1/1/12 - 12/31/13
2/7/2013	34	33	1	16	1	4	30	9	8	1

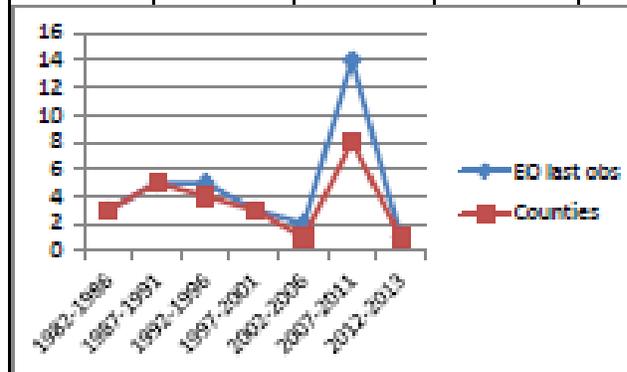
Data s/o 05/2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Last obs EOs	3	5	5	3	2	14
Counties	3	5	4	3	1	8



Data s/o 01/2014

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012-2013
EO last obs	3	5	5	3	2	14	1
Counties	3	5	4	3	1	8	1



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Golden mouse re-review, Mankowski 01/2014, Database info last updated 01/2014							
ID #	County	Date First Observed	Date Last Observed	Date Last Surveyed	Year Survey/no obs and no subseq obs	Protected	Population Notes (NaturaServe separation dist. between IDs = 2 km in unsuitable hab, 5 km in suitable hab.)
1	Williamson (IL)	1985-04-25	2008-10	2008-10			2008-04 through 10: 22 individuals; 2008-04 through 10: 4 captures, 2 recaptures in 2 locations
2	Gallatin (IL)	1985-06-24	2008-10	2008-10			2008-04 through 10: 1 capture, 0 recaptures
3	Alexander (IL)	1906-11-20	2008-10	2008-10			2008-04 through 10: 9 captures, 7 recaptures in 2 locations
4	Johnson (IL); Pope (IL)	1985-06-16	2008-10	2008-10			2008-04 through 10: 3 captures, 1 recapture
5	Union (IL)	1957-10-27	1985-05-26	2013-11-13	2013	x	
6	Pope (IL)	1985-06-07	2008-10	2008-10			2008-04 through 10: 1 capture, 0 recaptures
7	Jackson (IL)	1985-04-12	1985-04-20	2013-08-02	2013		
8	Pope (IL)	1963-01-02	1971-10-17	1971-10-17			
9	Union (IL)	1955-10-31	2013-02-07	2013-03-07			2013-02-04 to 03-07: 3 adult females
15	Jackson (IL)	1987-05-27	1988	2013-08-21	2013	x	
16	Alexander (IL)	1984-Fall	1984-Fall	1984-Fall			
17	Alexander (IL)	1987-04-01	1987-04-01	1987-04-01			
19	Pope (IL)	1988-06-21	1988-06-21	1988-06-21			
20	Union (IL)	1988-06-20	1988-06-20	2013-08-21	2013		
21	Johnson (IL)	1989	1989	1989			
23	Pope (IL)	1988-11-29	1992-01-03	1992-01-03		x	
24	Johnson (IL)	1949-09-20	1992-11-17	2013-07-25	2013	x	
25	Alexander (IL)	1993-12	1993-12	1993-12			
26	Alexander (IL); Union (IL)	1994-05-10	2008-10	2008-10			2008-04 through 10: 6 captures, 4 recaptures
27	Pope (IL)	1997-03-15	1997-03-15	1997-03-15			
28	Hardin (IL)	1997-03-04	1997-03-04	1997-03-04			
29	Pope (IL)	1995-03-14	1995-03-21	1995-03-21			
31	Gallatin (IL)	1995-02-13	1995-02-28	2013-07-17	2013		
36	Saline (IL)	1998-08-19	1998-08-19	1998-08-19			
37	Pope (IL)	2005-11-13	2005-11-13	2005-11-13			2005-11-13: 1 captured
38	Pope (IL)	2005-10-08	2008-10	2008-10			2008-04 through 10: 8 captures, 1 recapture in 2 locations
39	Pope (IL)	2005-10-10	2005-12-04	2005-12-04			2005-10 through 12: 3 captures, 3 recaptures
40	Williamson (IL)	2008-04	2008-10	2008-10			2008-04 through 10: 48 individuals; 2008-04 through 10: 6 captures, 2 re-captures
41	Jackson (IL)	2008-04	2008-10	2008-10			2008-04 through 10: 10 captures, 3 recaptures
42	Jackson (IL)	2008-04	2008-10	2008-10			2008-04 through 10: 18 captures, 12 recaptures
43	Jackson (IL)	2008-04	2008-10	2008-10			2008-04 through 10: 6 captures, 1 recapture
44	Johnson (IL)	2008-04	2008-10	2008-10			2008-04 through 10: 7 captures, 5 recaptures
45	Johnson (IL)	2008-04	2008-10	2008-10			2008-04 through 10: 18 captures, 5 recaptures
46	Saline (IL)	2008-04	2008-10	2008-10			2008-04 through 10: 3 captures, 1 recapture



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Survey data cited in Nielsen et al (2011) versus Database data and updated Database EO data discussion

As presented in the tables above, according to the Database, there were 16 EOs with observation from 2002-2011 (2 EOs from 2009 and 14 EOs from 2008). One additional EO with observation was added in 2013, bringing to 17 the current total number of EOs with observation since 2002. Some data presented in the IDNR's 2014 official proposal to delist the species presents different numbers, but evidence to support those numbers was not provided and a 02/07/2014 check with Database staff did not confirm those numbers to be correct.

Nielsen et al (2011) reported observations at 21 sites and "surveyed with no observation" reports at 3 sites in 2008. These numbers are not reflected in the Database – only 14 EOs had reported observations and no EOs had reports of "surveyed with no observation" in 2008. Because these numbers did not agree, when the species was evaluated in August 2012, it was taken to mean that all Nielsen et al (2011) data had not been submitted, accepted, and entered into the Database. Subsequent to the August 2012 review, both Board and IDNR staff submitted relevant reports to the Database. In preparation for the February 2014 Board review of outstanding issues for the List review and upon receipt of IDNR 2014 official proposal to delist the species, Board staff gained updated Database information (dated 01/06/2014) and again reviewed the Database data against the information presented in Nielsen et al (2011) and in the IDNR's 2014 official proposal to delist the species.

The Database element occurrences (EOs) are the standard used by the Board, IDNR, and INPC for respective program functions. The Database uses EO separation distances established by NatureServe (based on species biology and ecology). The NatureServe EO separation distance for Golden Mouse is 2 km in unsuitable habitat and 3 km in suitable habitat. It appears that what Nielsen et al (2011) identified as "sites" does not correlate to what the Database identifies as "element occurrences" (EOs) and some individual sites identified by Nielsen et al (2011) are actually "nested" locations within an individual EO. Three EOs with 2008 observation reports from Nielsen et al (2011) reported individual animals observed at more than one location in an EO (see EOs #1, #3, and #38 in the table immediately above). Board staff used Database Field Biotics to look at the mapping of "nested" locations within these EOs and estimated the distances (identified in the rightmost column of the table immediately above). Not knowing the suitability of habitat for these EOs, it appears that EO #38 may exceed the separation distance and constitute two EOs; EOs #1 and #3 are less clear. Even if all three of these separate locations were mistakenly attributed to existing EO polygons (which it doesn't appear they were), it would bring the total to only 17 EOs (and not 21 EOs) with observation in 2008 – representing 50% of the total number of EOs.

Despite uncertainty of how to reconcile the differences in reporting between Nielsen et al (2011) and the Database, the Nielsen et al (2011) report added 7 new EOs for the species (21% of current total). This, coupled with the comparisons to core-of-range occupancy and catch per unit effort, suggest some security in status and distribution. However, the species is described as ephemeral, so reported population numbers are not large (see table immediately above) and the addition of new EOs or EOs with no observation or without observation, may not reflect net gains or losses, but simply redistribution. Only 17 EOs (30% of total) have had observations since 2002. The three locations noted as "surveyed with no observation" in 2008 by Nielsen et al (2011) are not reflected in the Database – if we take those to be EOs and add the "surveyed with not observation" Database reports from 2012 and 2013, a total of 9 EOs (26% of total) were surveyed without observation and no subsequent observation since 2002. Additionally, 11 EOs (32% of total) have not been surveyed since at least 1998.

Status review triggers approved by the ESPB at its 144th meeting, November 13, 2009.

These proposed status review criteria represent measures of distribution and abundance to prompt the Endangered Species Protection Board to review the status of golden mice and consider de-listing. Status review criteria do not prompt an automatic change in status, and the Endangered Species Protection Board may review the status or status review criteria of the species at any time.

Determine if the percentage of sites sampled in Illinois (with appropriate habitat) that contain golden mice is significantly different ($P < 0.05$) from sites sampled in the core of the distribution that contain golden mouse.



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Determine if the average number of individual golden mice trapped per unit effort on all occupied site within Illinois is significantly different ($P < 0.05$) from that within the core of the range of golden mice.

ESPB staff review, recommendation (updated 02/2014): Information presented in Nielsen et al (2011) (partial posted below) suggest that criteria for the ESPB to consider delisting are partially satisfied. However, data have not been submitted to and confirmed by the IDNR Natural Heritage Database and questions about genetics remain unanswered.

Current data are insufficient to warrant a status change. If data are submitted to and confirmed by the Database and such recommendation is resubmitted to Board staff during the timeframe of the current List review process, staff will (as time and resources allow) make amended recommendation to the Board to consider a status change prior to or at the time when the Board confirms its preliminary approval for changes to the Illinois List.

As reviewed above, what Nielsen et al (2011) identified as "sites" does not correlate to what the Database identifies as "element occurrences" (EOs) and it is not clear to Board staff that the Board understood this inherent discrepancy when approving status review triggers for the species. Additionally, the wording of Board-approved status review triggers is different than the criteria evaluated by Nielsen et al (2011) – although it appears the intended outcome of comparisons to core-of-range occupancy and catch per unit effort was satisfied. While it appears that criteria for the ESPB to consider delisting are at least partially satisfied, these discrepancies between Database data and survey results reported in Nielsen et al (2011) as well as differences in wording between ESPB-approved status review triggers and what was evaluated in Nielsen et al (2011) makes evaluation with respect to overall status and distribution and the Board's intent difficult.

Updated information for 08/10/12 ESPB mtg iteration:

Drs. Heske and Carter provided comments that they felt the species was probably no longer imperiled in Illinois because based on the literature cited, they seem to be present in suitable habitat that is searched (Ed Heske, personal communication 06/18/12; Tim Carter, personal communication 06/18/12). No additional evidence was provided by either ESPB TEC.

Mankowski comment: I reiterate my recommendation above and note that no new evidence was brought forth by either the ESPB TECs or the IDNR at this time. If data are submitted to and confirmed by the Database, genetic questions are answered, and such recommendation is resubmitted to Board staff during the timeframe of the current List review process, staff will (as time and resources allow) make amended recommendation to the Board to consider a status change prior to or at the time when the Board confirms its preliminary approval for changes to the Illinois List.

From: Nielsen, C., E. Hellgren, E. Schaubert, G. Feldhamer, J. Devine, C. Gillen, D. Lesmeister, D. Stetson. 2011. Cooperative fur-bearing and nongame mammal investigations, Final Report, Federal Aid Project W-125-R-9-12. Submitted by – Cooperative Wildlife Research Laboratory and Department of Zoology, Southern Illinois University Carbondale. Presented to – Division of Wildlife Resources, Illinois Department of Natural Resources, Springfield, Illinois. 138 pp.

The 6 delisting criteria for the state (Appendix F) suggest the golden mouse could be delisted in Illinois.

1. Species included in the Federal list of Endangered or Threatened Species

Golden mice are not federally listed as endangered or threatened. Likewise, the current IUCN Red Data List of Threatened Species (2011) lists the population trend of golden mice as "stable" and the status as "least concern."

2. Species proposed for Federal Endangered or Threatened status that occur in Illinois

Golden mice are not being proposed for federal threatened or endangered status. As noted, they are generally considered secure throughout most of their range. The only exceptions are states on the periphery of the



ILLINOIS ENDANGERED SPECIES PROTECTION BOARD

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ILLINOIS LIST OF ENDANGERED AND THREATENED ANIMAL SPECIES
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range. In Oklahoma, only "a few" specimens have been reported (Caire et al. 1989). Likewise, in West Virginia they are quite rare. NatureServe (2011) considers them "critically endangered" in Oklahoma and "imperiled" in West Virginia. Given how little work has been done and how little is known of golden mice in either state, a more appropriate listing by NatureServe would be "status uncertain."

3. Species which formerly were widespread in Illinois but have been nearly extirpated from the state due to habitat destruction, collecting, or other pressures resulting from the development of Illinois

There is no historical evidence that golden mice were ever widespread in Illinois. Given forest management practices the past 50 years on Shawnee National Forest—specifically small patch cutting and prescribed burning, both of which lead to creation of dense understory—density and distribution of the species may be greater than ever, although recent management trends toward reduced cutting and burning of forested sites may negatively impact golden mice and eventually reverse the trend.

4. Species which exhibit very restricted geographic ranges of which Illinois is a part

The geographic range of most species of North American mammals is fairly limited. The median geographic range of close to 700 mammalian species is only about 1% of the total area of North America; only about 14 species have ranges >30% of the area of North America. Thus, 1 in 6 species of North American mammals has a range smaller than the state of Connecticut. Most have ranges smaller than the states of California, Oregon, and Washington combined (Pagel et al. 1991, Pimm and Jenkins 2005). Also, as a general rule small species such as rodents have smaller ranges than large species. The golden mouse is a prime example of a small species with a relatively extensive geographic range. The extent of the geographic range of golden mice is well above the average for most North American mammals, especially for a small rodent.

5. Species which exhibit restricted habitats or low populations in Illinois

As noted above, golden mice are often found in deciduous hardwood and coniferous forests, but they also occupy a variety of habitats including the borders of old fields, swampy lowlands, canebrakes, and xeric uplands. Recent work suggests that golden mice adapt well to additional habitat types that they are not generally associated with, including areas with reduced understory (A. Cross, SIUC graduate student, unpublished data).

6. Species which are significant disjuncts in Illinois, i.e., the Illinois population is far removed from the rest of the species' range

This is not the case for golden mice. Their range in Illinois is contiguous with the core distribution (see Figure 3), although the Ohio River could function as a barrier to gene flow. The following 2 criteria also were addressed in this study:

7. The percentage of sites sampled in Illinois (within appropriate habitat) that contain golden mice is not different (or more) than the percentage sampled in the core of the distribution that contain golden mice. (This is not the same wording as the status review trigger approved by the Board - Determine if the percentage of sites sampled in Illinois (with appropriate habitat) that contain golden mice is significantly different ($P < 0.05$) from sites sampled in the core of the distribution that contain golden mice.)

As discussed in Job 4.3, we found golden mice on 21 of the 24 sites (87.5%) sampled in Illinois (Table 7)—although they were often in low numbers. Also, 3 sites had golden mice during the first round of capture, but none the second round, including any recaptures. Thus, populations may be fairly ephemeral. Conversely, in the core of the range, only 13 of the 24 (54.2%) sites had golden mouse captures (Table 8). Numbers were lower in the core than in Illinois, and populations were also ephemeral, with 4 sites having golden mice during the first round of capture, but none the second round, including any recaptures. There was no significant difference in the number of occupied sites in Illinois vs. those in the core of the range ($\chi^2 = 1.88$; $df = 1$; $P > 0.5$). Occupancy model estimates—which give the probability a site is occupied by golden mice whether or not we caught anything—were also much greater for sites in Illinois (0.93) than in the core of the range (0.49), again suggesting golden mice are more common in Illinois.

8. The average number of individual golden mice trapped per unit effort on all occupied sites within Illinois is no different (or more) than that within the core of the range of golden mice. (This is not the same wording as the status review trigger approved by the Board - Determine if the average number of individual golden mice trapped per unit effort on all occupied site within Illinois is significantly different ($P < 0.05$) from that within the core of the range of golden mice.)



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Contrary to our expectations, abundance of golden mice at the periphery of their range in southern Illinois was much greater than in the core of the range. As noted in Tables 7 and 8, we captured 3.3 times more golden mice in Illinois (99 individuals) than in the core of the range (30 individuals). This was a statistically significant difference ($\chi^2 = 36.91$; $df = 1$; $P < 0.00001$). In Illinois, 57.1% of the golden mice taken during the initial round of trapping had persisted on the sites and were recaptured during the second round (Table 7) compared to only 33.3% in the core of the range, again a significant difference ($t = 3.36$, $df = 46$, $P = 0.0015$). This is perhaps indicative of increased survivorship/persistence on Illinois sites.

Occupancy models also were consistent with these results, as expected. The probability estimate of occupancy at Illinois sites was 0.93 (SE=0.08) whereas the estimate of occupancy in the core was only 0.49 (SE=0.16).

Based on the delisting criteria for the state of Illinois, as well as criteria #7 and #8, it appears that golden mice can be delisted with no harm to the species in the state. The only caveat to this conclusion is if genetic studies currently underway at SIUC indicate unique alleles occur in the Illinois population compared to the core of the geographic range.

Updated element occurrence distribution dot maps were not produced for this current review.

Updated NaturaServe conservation status ranking map was not queried for this current review.

Preliminary listing decision excerpts from agenda item 15 of the 155th meeting, 08/10/2012

Ms. Mankowski reviewed that occurrence data from IDNR-funded studies for the **Golden Mouse** (*Orchotomys nuttallii*) also have not made it into the Database. There was discussion that the status review triggers for the species rely on core population numbers and those numbers have been demonstrated in the publications referenced in Ms. Mankowski's species review. Ms. Mankowski agreed and reminded the TECs and Board members that occurrence data from other studies/information should be verified and entered into the Database for consideration by the Board, even when the evaluation criteria utilize parameters not fully reflected in the occurrence data maintained by the Database, the Board still needs the Database to perform quality-control of the occurrence data before the Board considers the other parameters. IDNR has been advised that it needs to get copies of its funded studies for the species to the Database. It was noted that IDNR made comment that genetic questions needed to be answered for the species, but did not provide information about what those questions were and when and how they were going to be answered. After further discussion about the species and data management issues, Ms. Mankowski noted that the information received to date suggests the species' status should be reviewed again prior to the conclusion of the current List review and revision. If data are submitted to and confirmed by the Database and a proposal for status change recommendation is submitted by IDNR to Board staff during the timeframe of the current List review process, Board staff will make amended recommendation to the Board to consider a status change prior to or at the time when the Board confirms its preliminary approval for changes to the Illinois List. If IDNR does not submit a proposal for status change during the required timeframe, Board staff will prepare another species review as time and resources allow.



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Preliminary listing decision summary from agenda item 10 of the 161st meeting, 02/21/2014

Ms. Mankowski reviewed that Board members had received the IDNR's official proposal for the recommended action and her review of the same (Attachment F) and her updated species review included as part of the outstanding issues document (Attachment H). She introduced Mr. Bluett of the Illinois Department of Natural Resources and he reviewed parts of the IDNR's official proposal and additional information that was not part of the proposal.

The Board discussed that when the species was reviewed in 2012, data cited in the IDNR's proposal had not yet been confirmed and entered into the Illinois Natural Heritage Database and it appeared that data had now been confirmed and entered. It was noted that the number of observed occurrences differed between literature citations and the Database and that while it was difficult to reconcile those discrepancies, it appeared the Board's previously approved status review triggers had been satisfied. There was general discussion about survey results and information presented about habitat use. The Board discussed that it appears the species has both expanded its range in Illinois and it may also be more common than previously thought.

Dr. Hofmann **moved** to approve delisting Golden Mouse (*Ochrotomys nuttalli*) from Illinois threatened due to recovery and that it is more common than previously thought. Dr. Taft seconded the motion, and it was **approved** unanimously. Chair Gooch thanked Mr. Bluett for his presentation of the IDNR's official proposal.



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Oryzomys palustris (Rice Rat) – Proposed Action: remove from threatened

Reviewed at: 155th meeting, 08/10/2012 and 161st meeting, 02/21/2014; meeting minutes may contain additional information and discussion

Updated species review, Mankowski 02/2014

Rice rat, *Oryzomys palustris* (Illinois threatened)

Listed as IL T, 12/31/1977

Reason for listing: restricted habitats or low pops in IL;

Ochrotomys nuttalli (Harlan)

GOLDEN MOUSE

MURIDAE

Status: Threatened in Illinois



Present Distribution: The golden mouse occurs throughout the southeastern quadrant of the United States from eastern Texas and Oklahoma east to the Atlantic coastal states from Virginia to Florida. Southern Illinois is at the northernmost edge of its range (Feldhammer and Paine 1987, Hoffmeister 1989). There are recent (since 1990) records of the golden mouse from Alexander, Gallatin, Hardin, Johnson, Pope, Saline, and Union counties, but this species also may be present in Jackson and Williamson counties.

Former Illinois Distribution : The present distribution of the golden mouse is probably similar to its former range in the state. There is one old report from Marion County near Salem (Cory 1912), but this record has been questioned by Hoffmeister (1989).

Habitat: In Illinois, the golden mouse inhabits dense thickets in a variety of wooded habitats including bottomland hardwood forests, pines, drainage-ways, abandoned upland fields, roadside rights-of-way and successional sites dominated by cedar (Andrews 1963, Blas 1966). This species appears to be dependent on the presence of a dense understory including honeysuckle, catbrier, and grape (Klimstra and Roseberry 1969, Felcham and Paine 1987, Hoffmeister 1989). Populations of golden mice are usually small and isolated with densities that range from 1-12 mice per ha (Andrews 1963).

Reason For Status: Golden mice occur primarily in the Shawnee Hills Natural Division within Illinois. Although recent surveys have documented a number of locations within the state, populations at these sites are generally small. The discontinuous distribution and specific habitat requirements qualify this species as a potentially threatened member of the Illinois fauna.

Management Recommendations: The current distribution and numbers of this species in Illinois should be closely monitored. Consideration should be given to appropriate habitat management where golden mice occur on public lands.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals*. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.



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Illinois – Natural Heritage (Biotics 4) Database – **last updated, May 2012** Updated review, Mankowski 02/2014

(EO = element occurrence and is roughly equivalent to one or more local individuals; last observed data = most recently observed for each occurrence and observations from previous years for respective occurrences are not illustrated.)

Data a/o 03/2012

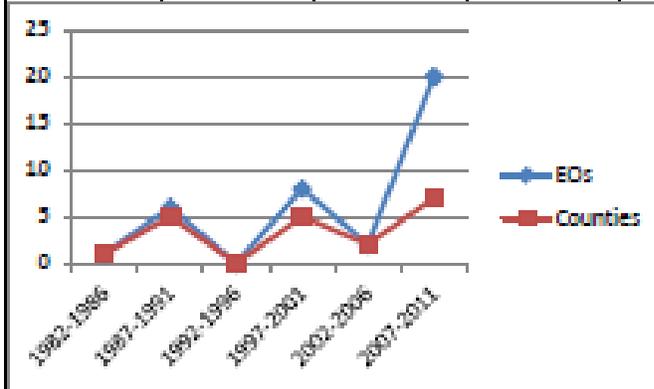
Last observed	Total # EOs	Total seen since Jan 2002	# Counties	# protected occurrences	# topo quads
3/3/2011	37	22	10	3	34

Data a/o 01/2014

last obs	Total # EOs	last observed through 12/31/11	last obs 1/1/12 - 12/31/13	Total Eos w/last obs 1/1/02 - 12/31/11	Total Eos w/last obs 1/1/12 - 12/31/13	# protected Eos	# topo quads	total counties	counties 1/1/02 - 12/31/11	counties 1/1/12 - 12/31/13
8/9/2013	39	28	11	19	9	3	37	13	10	7

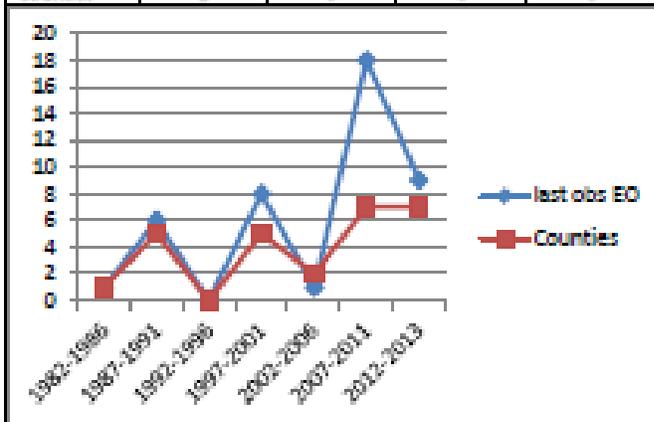
Data a/o 03/2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Last obs EOs	1	6	0	8	2	20
Counties	1	5	0	5	2	7



Data a/o 01/2014

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012-2013
last obs EOs	1	6	0	8	1	18	9
Counties	1	5	0	5	2	7	7



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Florican re-review, Mankowski 01/2014, Database info last updated 01/2014														
EO #	County	Date First Observed	Date Last Observed	Date Last Surveyed	Year Surveyed/ no obs and no subseq obs	Protected	Pop. in 2007	Pop. in 2008	Pop. in 2009	Pop. in 2010	Pop. in 2011	Pop. in 2012	Pop. in 2013	Separation Notes (Minimum separation dist. between EO's = 2 km in unsuitable hab, 5 km in suitable hab)
1	Pulaski (IL)	1987-01-03	1987-01-03	1987-01-03										
2	Massac (IL)	1968	2005-05-26	2005-05-26										
3	Saline (IL)	1987-04-27	2010-12-08	2010-12-08			3 captures	60 captures in 2 locations	36 individuals					maximum distance between "locations" within EO about 1,380 m
4	Johnson (IL)	1987-04-01	2009-03-15	2009-03-15				4 captures						
5	Williamson (IL)	1987-04-07	2013-05-31	2013-05-31									1 adult	
6	Franklin (IL)	1987-05-12	2008-07-19	2008-07-19				14 captures in 2 locations						maximum distance between "locations" within EO about 300 m
7	Alexander (IL)	1987-03-31	2008-06-19	2008-06-19		NP		4 captures in 2 locations						maximum distance between "locations" within EO about 1,700 m
8	White (IL)	1987-05-26	2013-05-23	2013-05-23									1 adult male	
9	Hamilton (IL)	1987-06-03	1987-06-04	2013-06-30	2013								uno	
10	Hamilton (IL)	1987-06-03	1987-06-04	2013-06-30	2013								uno	
12	Jackson (IL)	1986-10-29	2009-07-24	2009-07-24					1 capture					
13	Jackson (IL)	1987-09-23	2012-12-03	2012-12-03									1 adult	
14	Pope (IL)	1986-06-03	1986-06-03	1986-06-03										
16	Williamson (IL); Saline (IL)	1990-03-06	2009-01-14	2009-01-14					16 captures in 2 locations					maximum distance between "locations" within EO about 1,300 m
17	Union (IL)	1993-07-30	2013-02-07	2013-02-07									2 AF, 3 AM, 1 JM, 1 JF, 1 F	
18	Massac (IL)	1968-08-31	1968-08-23	2013-06-15	2013								uno	
20	Johnson (IL)	1968-07-16	1968-07-18	2013-04-27	2013								uno	



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EO #	Counties	Date First Observed	Date Last Observed	Date Last Surveyed	Year Surveyed/ no obs and no subseq obs	Protected	Pop #s 2007	Pop #s 2008	Pop #s 2009	Pop #s 2010	Pop #s 2011	Pop #s 2012	Pop #s 2013	Separation Notes (NatureServe separation dist. between EOs = 3 km in unsuitable hab, 5 km in suitable hab)
22	Union (IL); Alexander (IL)	1998-08-28	2007-04-19	2007-04-19		7-11 M, 6-8 F, some reproductive at 3 locations								maximum distance between "locations" within EO about 3,200 m
25	Alexander (IL)	1998-06-25	1999-10-22	1999-10-22										
26	Massac (IL)	1998-08-22	1998-08-22	2013-07-28	2013	NP							unc	
27	Union (IL)	1999-09-24	1999-09-24	2013-06	2013	NP							unc	
28	Alexander (IL)	1999-10-20	1999-10-20	1999-10-20	2013								unc	
29	Alexander (IL); Pulaski (IL)	1999-09-23	1999-09-23	1999-09-23										
30	Williamson (IL)	2003-09-10	2013-02-12	2013-02-12									1 adult male	
33	Perry (IL)	2003-09-20	2008-11-11	2008-11-11				17 captures at 5 locations						maximum distance between "locations" within EO about 3,750
34	Union (IL)	1994-11	2009-07-14	2009-07-14				1 capture						
35	Union (IL)	1994-11	2009-06-09	2009-06-09		NP	3 M, 6 FM	1 capture						
36	Franklin (IL)	2005-10-18	2011-03-05	2011-03-05							up to 2 AF, 3 JF, and 1 AM			
37	Alexander (IL)	2008-05-13	2013-04-26	2013-04-26			1 M & 2 FM			14 AF, 19 AM, 1 Juv, 1 ?	63 AF, 56 subAF, 102 AM, 112 subAM, 21 Juv	9 AM, 8 AF, 5 JF		maximum distance between "locations" within EO about 1,700 m
38	Pulaski (IL)	2009-03-25	2009-03-03	2009-03-03				44 captures at 3 locations						maximum distance between "locations" within EO about 1,400 m
39	Johnson (IL)	2009-03-11	2009-03-15	2009-03-15				1 capture						



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EO #	County	Date First Observed	Date Last Observed	Date Last Surveyed	Year Surveyed/ no obs and no subsequent	Protected	Pop # 2007	Pop # 2008	Pop # 2009	Pop # 2010	Pop # 2011	Pop # 2012	Pop # 2013	Separation Notes (NatureServe separation dist. between DOs = 2 km in unsuitable hab, 5 km in suitable hab)
40	Johnson (IL); Putnam (IL)	2009-03-11	2009-03-15	2009-03-15					4 captures					
41	Williamson (IL)	2009-01-12	2009-01-15	2009-01-15					7 captures					
42	Franklin (IL)	2008-08-13	2008-08-17	2008-08-17				up to 15 captures						
43	Jackson (IL); Williamson (IL)	2009-08-01	2012-10-20	2012-10-20				up to 5 captures at 3 locations		45 AF, 23 subAF, 71 AM, 46 subAM, 67	44 AF, 4 subAF, 65 AM, 3 subAM, 21 Juv			maximum distance between "locations" within EO about 3,500 m
45	Williamson (IL)	2010-03-25	2010-03-03	2010-03-03					10 captures					
46	Williamson (IL)	2011-03-03	2011-03-03	2011-03-03						1 adult male				
47	Perry (IL)	2012-05-30	2012-05-30	2012-05-30							1 adult male			
48	Saline (IL)	2013-08-07	2013-08-09	2013-08-09									1 AF, 2 AM	



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Survey data cited in Eubanks et al (2011) and Nielsen et al (2012) versus Database data and updated Database EO data discussion

As presented in the tables above, according to the Database, there were 19 EOs with last observation from 2002-2011. Nine additional EO with last observation were added in 2012-2013, bringing to 28 the current total number of EOs with last observation since 2002. Some data presented in the IDNR's 2014 official proposal to delist the species presents different numbers, but evidence to support those numbers was not provided and a 02/07/2014 check with Database staff did not confirm those numbers to be correct.

Eubanks et al (2011) reported observations at 16 of 48 sites from 2007-2009 and Nielsen et al (2011) reported observations at 4 sites in 2011-2012 (the number of sites that were surveyed without observation is not clear). These numbers are not reflected in the Database – only 11 EOs had reported observations: from Eubanks et al and no EOs had reports of "surveyed with no observation" from Eubanks from 2007-2009; there are currently 4 EOs with reported observation by Nielsen et al from 2011-2012. Because these numbers did not agree and because no EOs had 3 years of reporting for the period of 2007-2012 when the species was evaluated in August 2012, it was taken to mean that data had not been submitted, accepted, and entered into the Database. Subsequent to the August 2012 review, both Board and IDNR staff submitted relevant reports to the Database. In preparation for the February 2014 Board review of outstanding issues for the List review and upon receipt of IDNR 2014 official proposal to delist the species, Board staff gained updated Database information (dated 01/06/2014) and again reviewed the Database data against the information presented in Eubanks et al (2011) and Nielsen et al (2012) and in the IDNR's 2014 official proposal to delist the species.

The Database element occurrences (EOs) are the standard used by the Board, IDNR, and INPC for respective program functions. The Database uses EO separation distances established by NatureServe (based on species biology and ecology). The NatureServe EO separation distance for Rice Rat is 2 km in unsuitable habitat and 3 km in suitable habitat. It appears that what Eubanks et al (2011) identified as "sites" does not correlate to what the Database identifies as "element occurrences" (EOs) and some individual sites identified by Eubanks et al (2011) are actually "nested" locations within an individual EO. Three EOs with observation reports from Eubanks et al (2011) reported individual animals observed at more than one location in an EO (see EOs #6, #7, and #33 in the table immediately above). Board staff used Database Field Biotics to look at the mapping of "nested" locations within these EOs and estimated the distances (identified in the rightmost column of the table immediately above). Not knowing the suitability of habitat for these EOs, it appears that EO #38 may exceed the separation distance and constitute two EOs; EOs #1 and #3 are less clear. Even if all three of these separate locations were mistakenly attributed to existing EO polygons (which it doesn't appear they were), it is not clear that the observations at any would satisfy the ESPB-approved status review trigger for 2 distinct reproductively viable populations (or EOs) in each of 3 major watersheds for 3 years.

Despite uncertainty of how to reconcile the differences in reporting between Eubanks et al (2011) and the Database and that it appears the ESPB-approved status review triggers have not been met, the Eubanks et al (2011) report added 3 new EOs for the species (13% of current total) and a total of 28 EOs (72% of total) have had observations since 2002. At the same time, seven EOs (18% of total) had "surveyed with no observation" reports in 2013.

Status review triggers approved by the ESPB at its 144th meeting, November 13, 2009.

The proposed status review criteria represent measures of distribution and abundance to prompt the Endangered Species Protection Board to review the status of rice rats and consider status changes. Status review criteria do not prompt an automatic change in status, and the Endangered Species Protection Board may review the status or status review criteria of the species at any time.



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Evaluate Change in Status to Not Listed as Threatened or Endangered –

Rice rats will be considered recovered and eligible for a change in status to —not listed when it is demonstrated that:

1. Two distinct, reproductively viable populations (composing a watershed metapopulation) persist in each of at least 3 major watersheds (i.e., Big Muddy, Saline, Ohio, Cache, Mississippi, Kaskaskia, Little Wabash, Wabash) in southern Illinois for 3 years.
2. Habitats used by rice rats show a stable or increasing trend in area over the most recent 3 years.

ESPB staff review, recommendation (updated 02/2014): Data do not warrant review for consideration of a change in listing status. Information in a recent publication (Eubanks et al, 2011 – partial pasted below) suggest populations may be nearing thresholds, although detections fell short of expectations and capture rates were below previous studies in Southern Illinois and those conducted elsewhere in the species range. If data are submitted to and confirmed by the Database and such recommendation is resubmitted to Board staff during the timeframe of the current List review process, staff will (as time and resources allow) make amended recommendation to the Board to consider a status change prior to or at the time when the Board confirms its preliminary approval for changes to the Illinois List.

As explained above, the number of “sites” cited in Eubanks et al (2011) does not agree with the number of EO’s in the Database. The difference in occurrence numbers was part of the reason that the Board elected to not change the status of the species at the 133 meeting (and is explained in those meeting minutes) – because as presented, it appears that cited survey information had not been verified and entered into the Database. It is not clear to Board staff that the Board understood this inherent discrepancy when approving status review triggers for the species

Current Database data does not demonstrate observations for 3 years at any EO from 2007-2013. Additionally, for the 3 EOS with several years of reported observations from 2007-2013, it is unclear whether reported population numbers and/or numbers of individuals are sufficient to demonstrate reproductively viable populations. Some new information that speaks to increases in habitat was provided in the IDNR 2014 official proposal to delist the species. While it appears that criteria for the ESPB to consider delisting may be at least partially satisfied, these discrepancies between Database data and survey results reported in Eubanks et al (2011) makes evaluation with respect to overall status and distribution and the Board’s intent difficult. Board staff recommendation at this time is that the information provided here is helpful, but may not fully satisfy a determination that the species’ status and distribution exceeds the definition of “threatened”.

Updated information for 08/10/12 ESPB mtg iteration:

Drs. Heske and Carter provided comments that they felt the species was probably

no longer imperiled in Illinois because based on the literature cited, they seem to be present in suitable habitat that is searched and regulations continue to provide protection for wetlands (Ed Heske, personal communication 06/18/12; Tim Carter, personal communication 06/18/12). No additional evidence was provided by either ESPB TEC.

Mankowski comment: I reiterate my recommendation above and note that no new evidence was brought forth by either the ESPB TECs or the IDNR at this time. If data are submitted to and confirmed by the Database and such recommendation is resubmitted to Board staff during the timeframe of the current List review process, staff will (as time and resources allow) make amended recommendation to the Board to consider a status change prior to or at the time when the Board confirms its preliminary approval for changes to the Illinois List.



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From: Eubanks, B.W., E.C. Hallgren, J.R. Nawrot, and B.D. Bluett. 2011. Habitat associations of the marsh rice rat (*Oryzomys palustris*) in freshwater wetlands of southern Illinois. *Journal of Mammalogy*, 92(3):352-360, 2011.

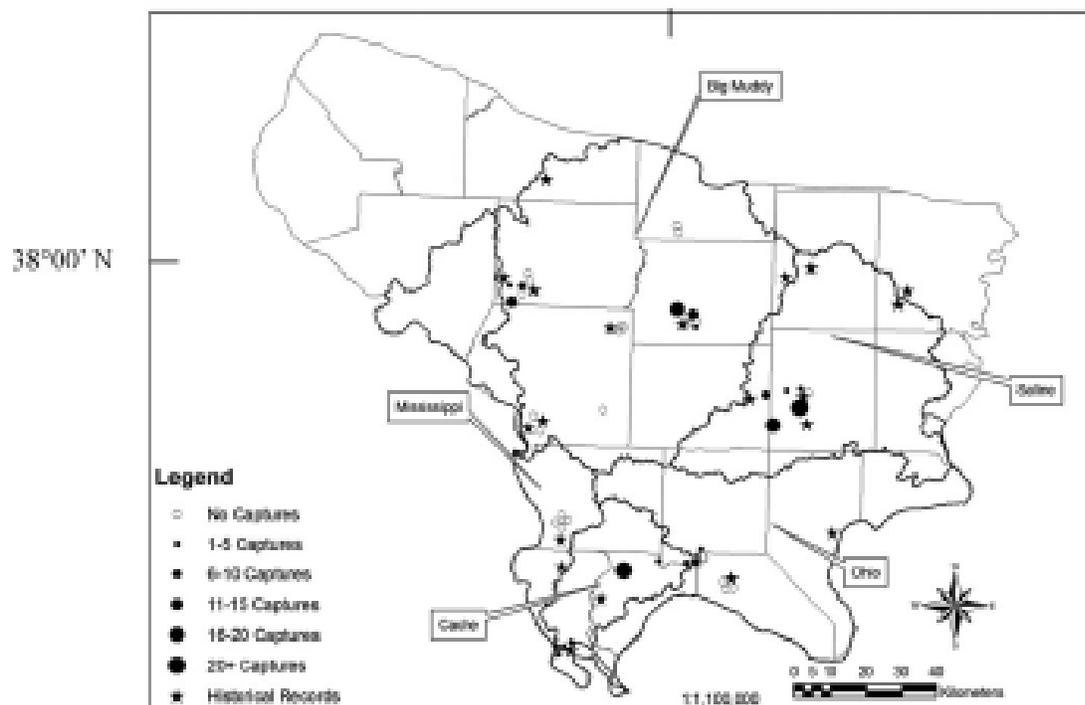


FIG. 1.—Trapping locations and number of marsh rice rat (*Oryzomys palustris*) captures (circles) during survey for marsh rice rats in southern Illinois, 2007–2009. Stars represent historical records. Gray lines represent county borders, and black lines represent watershed boundaries. Sampled watersheds are labeled in boxes.

From Discussion Section:

Our site-selection process incorporated previous ecological knowledge about rice rats and was designed to determine which types and features of local wetlands were associated with rice rat occurrence. Therefore, it included random wetland-dominated sites that were not optimal habitat. Also, optimal habitat can change temporally due to yearly or seasonal changes in vegetation structure. In comparison, Hofmann et al. (1990) trapped opportunistically in areas where rice rat occupancy was probable based on direct field observation. These sites, if unmanaged, had undergone >20 years of succession by the time we trapped at these locations. For example, sites once dominated by grasses, sedges, and rushes (Hofmann et al. 1990) often had undergone succession to shrub-dominated communities including species such as black willow (*Salix nigra*), red maple (*Acer rubrum*), buttonbush, and sycamore (*Platanus occidentalis*). This change in vegetation composition could have led to local extirpation of rice rats, because the species rarely was found in wetlands dominated by woody species.

The site-selection process and successional changes in habitat on historical sites could have contributed to lower capture rates and rice rat occupancy in this study than in the last extensive survey of southern Illinois (Hofmann et al. 1990). Hofmann et al. (1990) captured 28.2 rice rats/1,000 trap nights at 13 of 31 (naïve occupancy = 0.419) sites. Broader comparisons showed that the capture rate (10.0 individual rice rats/1,000 trap nights) during our entire study (2007–2009) was lower than capture rates reported in coastal areas across the range, which varied from 21.7 rice rats/1,000 trap nights (Kruchek 2004) to 68.4 rice rats/1,000 trap nights (Bloch and Rose 2005; Table 5). Capture rates in early-successional habitats in a bottomland hardwood forest in the Mississippi River Delta region were 67 rice rats/1,000 trap nights (total effort=539 trap nights) prior to a flood event (Chamberlain and Leopold 2003). Similarly, density estimates in the present study, which represent minimum estimates, were much lower than densities reported from other studies (Table 5). Our occupancy modeling indicated that because daily detection probabilities (p range = 0.44–0.87) were high, rice rats most likely would be detected if they occurred



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within a sampling site. Studies of overwinter survival, density, and habitat use are needed to better understand differences that might exist between core and peripheral populations within the species' range.

Updated element occurrence distribution dot maps were not produced for this current review.

Updated NatureServe conservation status ranking map was not queried for this current review.

Preliminary listing decision excerpts from agenda item 15 of the 155th meeting, 08/10/2012

Ms. Mankowski reviewed that occurrence data from IDNR-funded studies for the Rice Rat (*Oryzomys palustris*) also have not made it into the Database. Ms. Mankowski reviewed again that occurrence data from other studies/information should be verified and entered into the Database for consideration by the Board. IDNR has been advised that it needs to get copies of its funded studies for the species to the Database. Dr. Walk pointed-out that status review triggers approved by the Board for this species are somewhat arbitrary and recommended that the Board needs to be mindful of how triggers will be measured and demonstrated when they are approving them. Chair Gooch agreed and added that the Board might want to consider revisiting previously approved triggers to confirm those items for each. Ms. Mankowski noted that the information received to date suggests the species' status should be reviewed again prior to the conclusion of the current List review and revision. If data are submitted to and confirmed by the Database and a proposal for status change recommendation is submitted to Board staff by IDNR during the timeframe of the current List review process, Board staff will make amended recommendation to the Board to consider a status change prior to or at the time when the Board confirms its preliminary approval for changes to the Illinois List. If IDNR does not submit a proposal for status change during the required timeframe, Board staff will prepare another species review as time and resources allow.

Preliminary listing decision summary from agenda item 11 of the 161st meeting, 02/21/2014

Ms. Mankowski reviewed that Board members had received the IDNR's official proposal for the recommended action and her review of the same (Attachment G) and her updated species review included as part of the outstanding issues document (Attachment H). Mr. Bluett reviewed parts of the IDNR's official proposal and additional information that was not part of the proposal.

The Board discussed that when the species was reviewed in 2012, data cited in the IDNR's proposal had not yet been confirmed and entered into the Illinois Natural Heritage Database and it appeared that data had now been confirmed and entered. It was noted that the number of observed occurrences differed between literature citations and the Database and that while it was difficult to reconcile those discrepancies, it appeared the Board's previously approved status review triggers may be satisfied.

Mr. Bluett answered some questions from the Board about survey design and results as related to lower capture rates in Illinois as compared to other parts of the species' range. Mr. Bluett felt that the differences were explained by differences in survey design. There was also discussion about information presented about habitat changes. The Board discussed that it appears the species may have both expanded its range in Illinois and it may also be more common than previously thought.

Chair Gooch asked for a motion to approve delisting Rice Rat (*Oryzomys palustris*) from Illinois threatened. Dr. Hofmann recused herself voting, noting her previous employment working on several surveys and studies involved in the recommendation.



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Mr. Robinett **moved** to approve delisting Rice Rat (*Oryzomys palustris*) from Illinois threatened due to recovery and that it may be more common than previously thought and Ms. Ross seconded the motion. Mr. Robinett asked Ms. Mankowski about her review comment that no EOs showed observations for five years as called for in the status review triggers. Ms. Mankowski explained that her review looked at Database data for the last seven years and did not show repeated observations at any EO over a five-year period during the seven years. She and Mr. Bluett reviewed that his current presentation information differed from that submitted previously and it illustrated those EOs with any observation, although absent population numbers, over a 20+-year timeframe, so that Mr. Bluett considered any persistence of observation at five locations over the broader timeframe to indicate viable populations. Ms. Mankowski stated that she did not understand that to be what was prescribed in the status review trigger and had not reviewed it that way. Following some additional brief discussion, the Board voted and the motion was **approved** unanimously. Chair Gooch thanked Mr. Bluett for his presentation of the IDNR's official proposal.



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Invertebrates

SNAILS

Leptoxis praerosa (Onyx Rocksnail) - Proposed Action: add as endangered

Reviewed at: 158th meeting, 05/17/2013; data confirmation at 161st meeting, 02/21/2014; meeting minutes may contain additional information and discussion

Illinois Endangered Species Protection Board (ESPB) required 5-year review of the Illinois List of Endangered and Threatened Species (Illinois List) ending in 2014:

Form for ESPB Technical Expert Consultant (ESPB TEC) recommendation for adding a species to the Illinois List of Endangered and Threatened Species

Prepared by:

Anne Mankowski, Director

Illinois Endangered Species Protection Board

One Natural Resources Way

Springfield, IL 62702-1271

Office phone: 217-785-8687

Email: anne.mankowski@illinois.gov

March 2012

Complete one form for each species nomination. Fill-in all sections to the best of your ability with available information. Return the form and copies of attachments to Anne Mankowski.

A. Date: 13 February 2013

B. Proposer Information

Name: Jeremy S. Tiemann and Kevin S. Cummings

Address: 1816 South Oak Street

Phone number: JST = 217-244-4594; KSC = 217-333-1623

Email address: JST = jtiemann@illinois.edu; KSC = ksc@illinois.edu

Title: Field Biologist

Organization affiliation: Illinois Natural History Survey

C. The scientific and common name, including nomenclature citation, of any species involved (the ESPB may elect to use the common name identified by NatureServe).

Scientific Name: *Leptoxis praerosa* (Say, 1821) --- (Gastropoda: Pleuroceridae)

Common Name: Onyx Rocksnail

Nomenclature Citation: Say, T. 1821. *Journal of the Academy of Natural Sciences of Philadelphia* 2(1):177.

D. Identification of the specific listing status recommended – endangered or threatened – and reference to specific ESPB listing criteria that are affecting the species, including where these factors are acting upon the species, the magnitude and imminence of these factors, and whether, either singly or acting in combination, these factors may cause the species to be an endangered or threatened species (endangered = at risk of extinction in the wild in Illinois; threatened = likely to become endangered in the wild in Illinois within the foreseeable future).

Recommend listing as endangered



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Identify which ESPB listing criteria are affecting the species and for which your proposal provides supporting evidence:

- Species which formerly were more widespread in Illinois but have shown significant declines which may lead to extirpation from the State due to habitat destruction, collecting, or other pressures resulting from the development of Illinois. This includes species which:

have experienced a range reduction

- Species which are low in numbers and for which known or potential threats are likely to cause significant declines, including:

species which exhibit restricted habitats or low populations in Illinois

E. Biological information on the species (including habitat and life-history traits) that is relevant to determining whether a species may be endangered or threatened.

Aquatic gastropods are an understudied group and most species lack basic life-history information (Johnson et al. *in press*). Currently, little is known about *Leptoxis proarosa*. The snail is known from throughout the Ohio River basin (Burch 1989) in portions of Tennessee, Kentucky, Ohio, Indiana, and Illinois (Figure 1), and it inhabits algae-cover rocks in swift current (Goodrich and van der Schalie 1944).

Pleurocerids respire with a gill, mature slowly, are long-lived, dioecious with internal fertilization, and females generally attach eggs to firm substrates in late spring and early summer. They have narrow ecological tolerances, limited dispersal ability, and predominately occur found in riverine habitats (Johnson et al. *in press*).

F. A detailed narrative justification for the recommended measure, describing, based on available information, past and present numbers and distribution of the species involved (location information should include lat/long coordinates and other information necessary to add a record to the Natural Heritage (Biotics-4) Database) and any threats faced by the species; it is most helpful if this narrative contains an analysis of the information presented.

Johnson et al. (*in press*) lists *L. proarosa* as common and NatureServe (2013) assigns a rank of G5 to the snail. However, we believe the species is rare in Illinois. Since 2007, we have been compiling a list of Illinois snail records from the literature (e.g., Baker 1906; Goodrich 1940; Goodrich and van der Schalie 1944; Branson and Batch 1987; Burch 1989; Pylon et al. 2008) and major natural history collections (e.g., the Academy of Natural Sciences of Drexel University, Philadelphia; the Chicago Academy of Science, Chicago; the Field Museum of Natural History, Chicago; the Florida Museum of Natural History, Gainesville; the Illinois Natural History Survey, Champaign; the Museum of Comparative Zoology, Harvard; the Ohio State University Museum of Zoology, Columbus; the University of Illinois Museum of Natural History, Champaign; the University of Michigan Museum of Zoology, Ann Arbor). We have visited these historical areas to document what species are present today. Through our work, we have determined that *L. proarosa* was extant in the lower Wabash River mainstem (downstream of Mt. Carmel) and the Ohio River mainstem (Tiemann et al. 2011). However despite sampling >80 sites (~1,500 person hours) in two rivers, we found *L. proarosa* live at only 1 site (1 individual found at Little Chain Rapids in the Wabash during the Summer of 2011 in 7 hours of sampling – INHS 41722). INHS ichthyologists found 1 live individual (INHS 31331) in the Wabash River at Rochester in 1997, but we failed to find it alive in 3 visits since (1 relict found during the Summer of 2011 – INHS 41633), nor did IDNR biologist find it during 3 visits since. We did find 2 relict specimens at Grand Chains Rapids in the Wabash during 7 hours of sampling during the Summer of 2011 (INHS 41701). Despite the numerous collections made in the Ohio



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River, we failed to find any evidence of the snail. Please see Table 1 and Figure 2 for a list of locations of where and when *L. procerosa* has been collected within Illinois waters.

The primary factors responsible for the decline for most aquatic gastropods are anthropogenic disturbances to stream habitats (e.g., habitat destruction and environmental contamination) and invasions of exotic species (Johnson et al. *in press*). Within the Wabash River, physical and biological changes as a result of anthropogenic activities are the suspected cause for declines in aquatic species richness (Simon 2006). We can only speculate these are the reasons for the decline in *L. procerosa*.

^aSites were visited between 1-3 times by INHS malacologists, and averaged ~4 person hours/visit.

^b"INHS XXXXX" indicates Illinois Natural History Survey Mollusk Collections' catalogue number.

G. Information on regulatory protections and conservation activities initiated or currently in place that may or may not protect the species or its habitat.

Specifically none. However, within Illinois, its range overlaps with the federally endangered freshwater mussel, fat pocketbook (*Potamilius capax*).

H. Information regarding the status of the species over all or a significant portion of its range.

Johnson et al. (*in press*) lists *L. procerosa* as common and NatureServe (2013) assigns a rank of G5 to the snail. However, neither source specifically addresses the snail's status in Illinois. In Indiana, *L. procerosa* is known from the Wabash and Blue rivers and Ohio River mainstem (Goodrich and van der Schalie 1944; Pyron et al. 2008; Tiemann and Cummings unpublished data). Pyron et al. (2008) failed to find the snail in the Wabash and Ohio rivers during their surveys of Indiana, and recommended its state-status as "critically imperiled." Similarly, it has been reported as rare in Kentucky. Branson and Batch (1987) did not report the snail from the Ohio River.

I. Supporting documentation in the form of copies of reprints of pertinent publications, data, reports or letters from authorities, and maps.

Please see Tiemann et al. (2011), which has been provided to Ann Mankowski. This report was submitted in early 2011, before our field season began (thus before our 2011 discovery of the snail in the Wabash River at Little Chain Rapids).

The ESPB may consult information already in our files for a subject species, but will only conduct additional research as time and resources allow when evaluating whether a listing recommendation presents substantial information indicating listing may be warranted. Therefore, to ensure that we will consider any supporting documentation you reference, you should provide either electronic or hard copies of any supporting materials cited in the recommendation, or valid links to public websites where the cited materials can be accessed; these materials should be in English. If you do not, we may at our option contact you to obtain supporting documentation. However, if you do not provide the supporting documentation, and it is not otherwise readily available in our files, we will be unable to consider this information in making our finding. In addition, we request that you provide literature citations that are specific enough to allow us to easily locate within the documentation the particular information cited in the petition, including page numbers or chapters, as applicable.

Provide specific citations here:

Baker, F.C. 1906. A catalogue of the Mollusca of Illinois. Bulletin of the Illinois State Laboratory of Natural History 7(6):53-136.



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Burch, J.B. 1989. North American freshwater snails. Malacological Publications, Hamburg, Michigan. viii + 365 p.

Branson, B.A. and D.L. Batch. 1987. Distribution of aquatic snails (Mollusca: Gastropoda) in Kentucky with notes on fingernail clams (Mollusca: Sphaeriidae: Corbiculidae). Transactions of the Kentucky Academy of Science 48:62-70.

Goodrich, C. 1940. The Pleuroceridae of the Ohio River drainage system. Occasional Papers of the Museum of Zoology, University of Michigan 417:1-21.

Goodrich, C. and H. van der Schalie. 1944. A revision of the Mollusca of Indiana. American Midland Naturalist 32:257-326.

Johnson, P.D., A.E. Bogan, K.M. Brown, N.M. Burkhead, J.R. Cordeiro, J.T. Garner, P.D. Hartfield, D.A.W. Lepitzki, G.R. Mackie, E. Pip, T.A. Tarpley, J.S. Tiemann, N.V. Whelan, and E.E. Strong. In press. Conservation Status of Freshwater Snails of Canada and the United States. Fisheries. Expected May 2013.

Pyron, M., J. Beugly, E. Martin, and M. Spielman. 2008. Conservation of the freshwater gastropods of Indiana, historic and current distributions. American Malacological Bulletin 26:137-151.

NatureServe. <http://www.natureserve.org/explorer/servlet/NatureServe?searchName=Leptoxis+praerosa> Accessed on 13 February 2013.

Simon, T.P. 2006. Biodiversity of fishes in the Wabash River: status, indicators, and threats. Proceedings of the Indiana Academy of Science 113:136-148.

Tiemann, J.S., K.S. Cummings, and C.A. Mayer. 2011. Distribution of pleurocerids (Gastropoda) of Illinois. INHS Technical Report 2011[9]. Final report submitted to the Illinois Department of Natural Resources. 36 pages + appendix.

Provide a list of attachments here: two figures and one table – please see below

Table 1. Historical locations of *Leptoxis praerosa* in Illinois. Data are taken from natural history collections (e.g., the Illinois Natural History Survey, Champaign (INHS); the Ohio State University Museum of Zoology, Columbus (OSUM); the University of Illinois Museum of Natural History, Champaign (UIMNH); the University of Michigan Museum of Zoology, Ann Arbor (UMMZ)).

Source (catalogue number)	Stream	Common location	Lat/Long	Year last observed
INHS 31551	Wabash River	Rochester, Wabash County	38.3448, -87.8249	1997 – live
OSUM 1219	Wabash River	4 mi N Grayville, Wabash County	38.2942, -87.9356	1980s – dead
UIMNH 17129	Wabash River	New Harmony dam, White County	38.1059, -87.9358	pre-1920 – live
INHS 41701	Wabash River	Grand Chain Rapids, White County	38.0261, -88.0079	2011 – relict
INHS 41722	Wabash River	Little Chain Rapids, White County	37.9525, -88.0367	2011 – live
UMMZ 44020	Ohio River	Elizabethtown, Hardin County	37.4442, -88.3054	1927 – live
INHS 40560	Ohio River	Golconda, Pope County	37.3666, -88.4819	1894 – live
OSUM 18405	Ohio River	Metropolis, Massac County	37.1424, -88.7106	1988 – dead
OSUM 12303	Ohio River	Little Chain Bar, Massac County	37.1834, -88.7929	1980 – live



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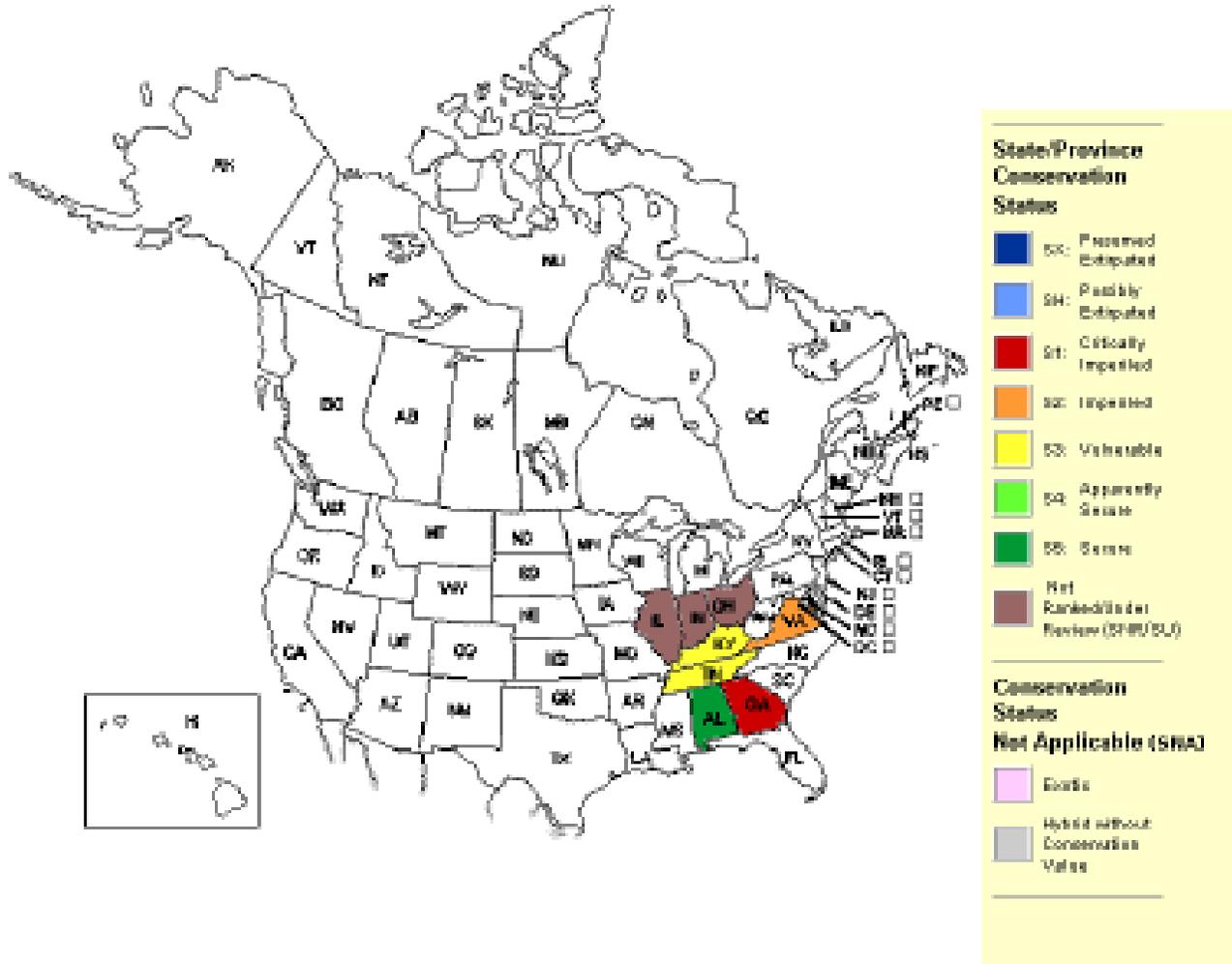


Figure 1. Range of *Laptaxis procerosa*. Map taken from NatureServe (2013).



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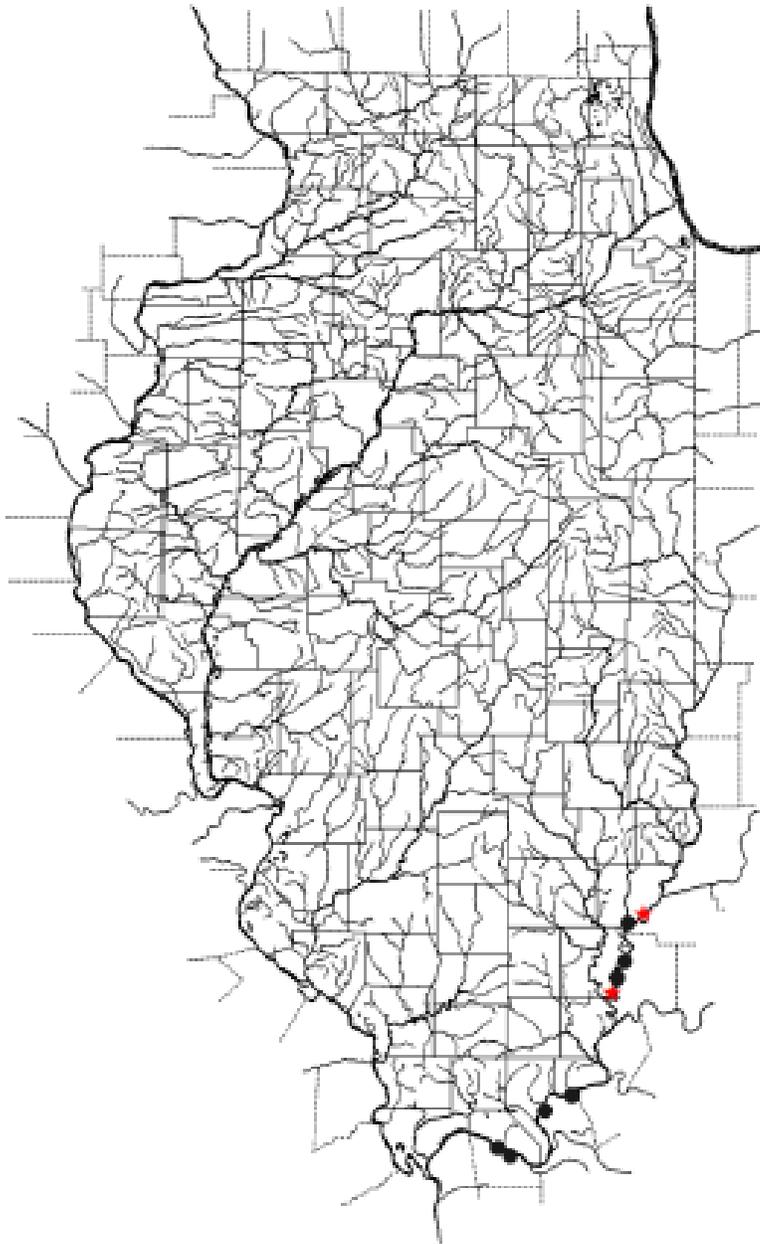


Figure 2. Range of *Leptoxis praerosa* within Illinois. Red stars indicate where live specimens have been collected since 1990, and black circles indicated where relict specimens have been found (data taken from natural history collections (e.g., the Illinois Natural History Survey, Champaign; the Ohio State University Museum of Zoology, Columbus; the University of Illinois Museum of Natural History, Champaign; the University of Michigan Museum of Zoology, Ann Arbor).

Preliminary listing decision excerpts from agenda item 8 of the 158th meeting, 05/17/2013

In the review of multiple species' recommendations during the agenda item discussion, Ms. Mankowski made recommendation for adding *Leptoxis praerosa* (Onyx Rocksnail) as an Illinois Endangered species. Vice-chair Kruse **moved** to approve the recommendation, Dr. Walk seconded the motion, and it was **approved** unanimously.



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MUSSELS

Elliptio crassidens (Elephant-ear) - Proposed Action: change from threatened to endangered

Reviewed at: 157th meeting, 02/08/2013; meeting minutes may contain additional information and discussion

Elephant-ear, *Elliptio crassidens* (Illinois threatened)

Listed as IL T, 3/17/1989

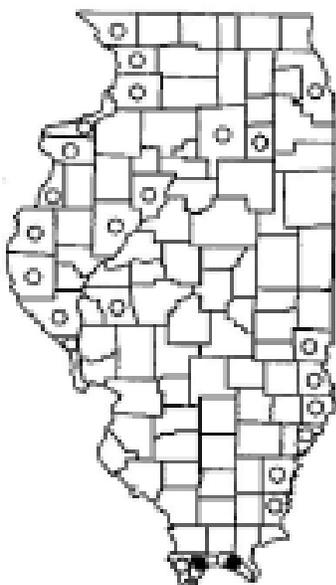
Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures;

Elliptio crassidens (Lamarck)

ELEPHANT-EAR

UNIONIDAE

Status: Threatened in Illinois



Present Distribution: The elephant-ear is known from the Mississippi River drainage, south and east in the Alabama, Tombigee, and Chattahoochee river systems (Parmalee 1967). In Illinois, it is presently restricted to the Ohio and Wabash rivers (IDNR Natural Heritage database, INHS Mollusk Collection).

Former Illinois Distribution: The elephant-ear formerly had a much larger range in Illinois with historic records from the Illinois, Mississippi, Ohio and Wabash rivers (Starnott 1971, Cummings and Meyer 1982). It was extirpated from the Illinois River by 1930.

Habitat: The elephant-ear inhabits rivers with swift-flowing currents, and a bottom composed of stones and coarse gravel usually at a depth of at least 2 m (Parmalee 1967).

Reason for Status: Populations of the elephant-ear have declined in Illinois, and it has been eliminated from the Illinois and upper Mississippi river systems. Since this species is presently restricted to the Ohio and Wabash Rivers in Illinois, it is threatened by dredging, impoundments, sand and gravel mining, siltation, and domestic, industrial, and agricultural pollution.

Management Recommendations: This mussel would benefit from efforts to restrict dredging, impoundments, and navigational improvements in the Wabash and Ohio Rivers. Additionally, there is a need for increased efforts to reduce undue siltation and pollution in the Wabash and Ohio Rivers.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nijboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals*. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.



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Illinois – Natural Heritage (Biotics 4) Database – last updated, November 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

The table below uses live and dead (dead/recent dead/some weathering) observations and does not include relict (relict/sub-fossil/fossil) observations.

Last Observation	Total # EOs	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-08-23	12	5	1	11	8	4

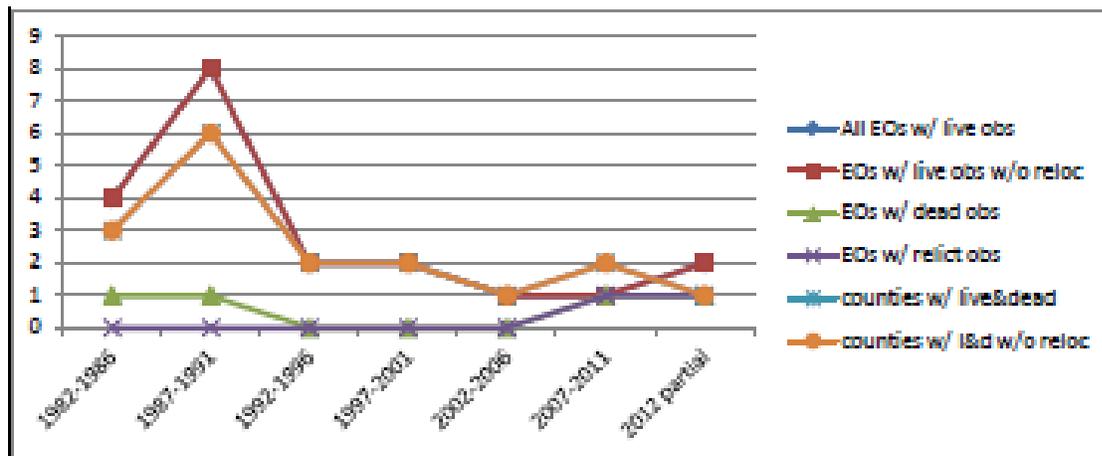
Observed EOs and counties with observations, for 5-year intervals, and any for 2012

The table and graph below have entries to indicate and separate the number of EOs where live animals were prescribed for relocation (as part of IDNR Incidental Take Authorization) or were relocated (as part of activities intended to help recover the species) during five-year interval with no subsequent observations, relative to the total number of EOs with live observations.

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EOs w/ live obs	4	8	2	2	1	1	2
EOs w/ dead obs	1	1	0	0	0	1	1
EOs w/ relict obs	0	0	0	0	0	1	1
Total EOs w/ live&dead	4	8	2	2	1	2	3
counties w/ live&dead	3	6	2	2	1	2	1

As terms are used in EO reports: live = live; dead = dead/recent dead/some weathering; relict = relict/sub-fossil/fossil
(R) = # of EOs where live individuals were relocated to another location as part of intended recovery activities, no subsequent observations
(P) = # of EOs where live individuals were prescribed for relocation as part of IDNR ITA, no subsequent observations

ESPB summary of potential IDNR Incidental Take Authorization impacts to species EOs					
EO and ITA info a/o	Total # of ITAs (# of counties)	# of potential ITA impacts to total EOs	# of potential ITA impacts to recent (<10 yrs old) EOs	% of total EOs potentially impacted by ITAs	% of recent (<10 yrs old) EOs potentially impacted by ITAs
11/2012	0	0	0	0	0



Mankowski notes and recommendation:

The number of observation of live and/or dead animals has decreased and remained depressed since the time the species was listed as threatened in 1989, despite good search effort. Ten EOs (83% of total) have been surveyed since 2002, but only 4 (33% of total) had live observations, while 5 (42% of total) had "surveyed with no



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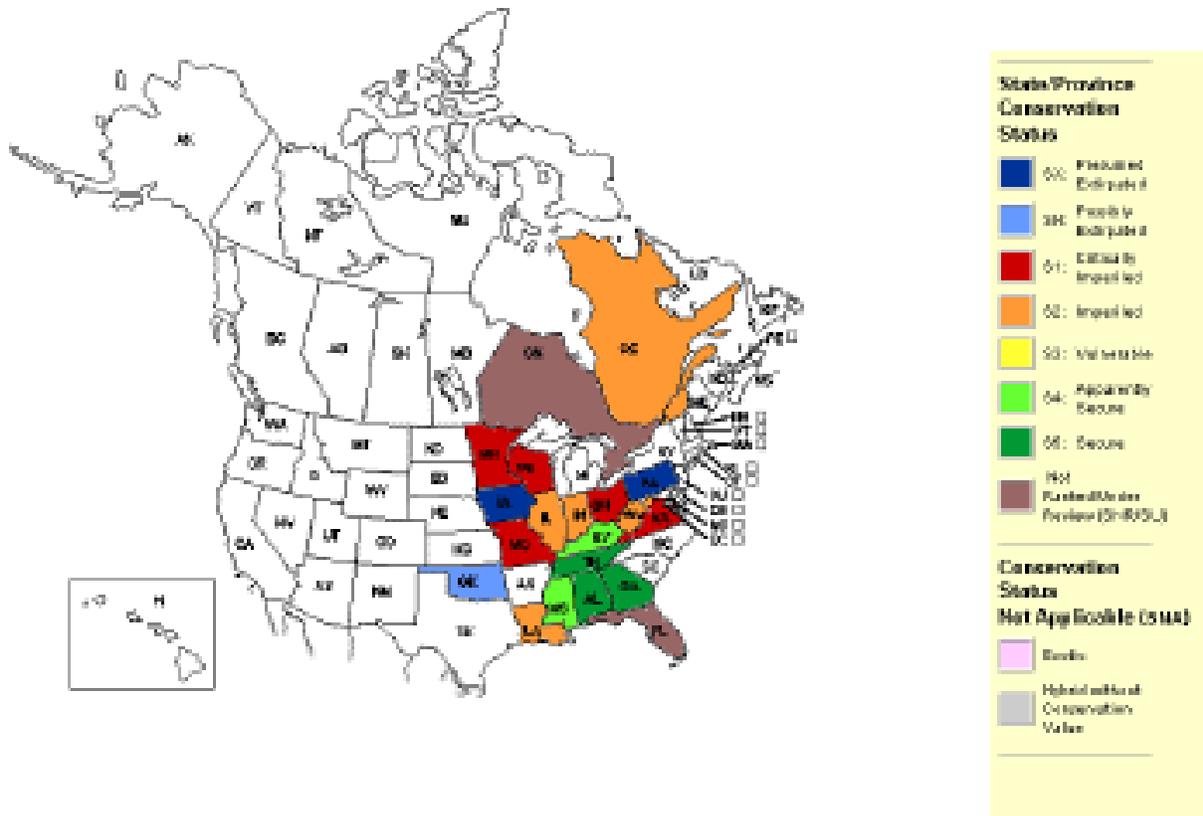
**ILLINOIS LIST OF ENDANGERED AND THREATENED ANIMAL SPECIES
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Public Hearing Documents: Individual species reviews and select Board discussion and determinations for species with ESPB preliminary approval for changes in listing status, addition to, or removal from, the Illinois List.

observation" (4) or "relict" (1) reports. Additionally, live or dead animals have only been observed in 5 of 25 counties with historic occurrences.

Mankowski recommendation: - change status from threatened to endangered

Elliptio crassidens



NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer/>. (Accessed March 3, 2012).

Preliminary listing decision excerpts from agenda item 8 of the 158th meeting, 05/17/2013

In the review of multiple species' recommendations during the agenda item discussion, Ms. Mankowski made recommendation to change from threatened to endangered the Elephant-ear (*Elliptio crassidens*). Dr. Walk **moved** to approve Ms. Mankowski's recommendation, Dr. Hofmann seconded the motion, and it was **approved** unanimously.



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Fusconaia ebena (Ebonyshell) - Proposed Action: change from threatened to endangered

Reviewed at: 157th meeting, 02/08/2013; meeting minutes may contain additional information and discussion

Ebonyshell, *Fusconaia ebena* (Illinois threatened)

Listed as IL T, 1/18/1994

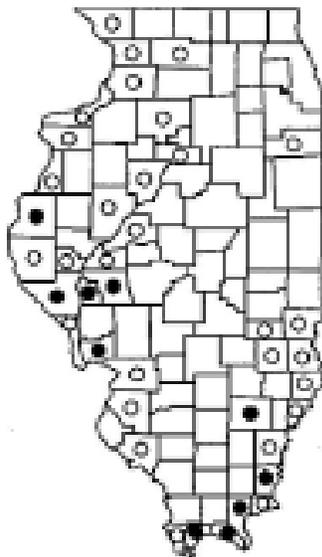
Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures;

***Fusconaia ebena* (Lea)**

EBONYSHELL

UNIONIDAE

Status: Threatened in Illinois



Present Distribution: The ebonyshell is known from the Mississippi River drainage south in the Alabama and Tombigbee rivers (Pannalee 1967).

Former Illinois Distribution: This species was formerly common throughout the large rivers in the state, but by 1967 was restricted to portions of the Mississippi, lower Wabash and Ohio rivers (Pannalee 1967).

Habitat: The ebonyshell is found in large rivers in sand and gravel substrates with swift currents (Pannalee 1967, Cummings and Mayer 1982).

Reason For Status: This species was formerly abundant in Illinois but has been greatly reduced due to pollution and siltation. This species is listed as endangered in Missouri and Wisconsin, threatened in Ohio, and special concern in Minnesota (Cummings and Mayer 1982).

Management Recommendations: This mussel would benefit from efforts to restrict dredging, impoundments, and navigational improvements on the large rivers of the state. Additionally, there is a need for increased efforts to reduce undue siltation and pollution in the Wabash, Ohio and Mississippi rivers.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals*. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.



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5-YEAR REVIEW AND REVISION ENDING IN 2014**

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Illinois – Natural Heritage (Biotics 4) Database – last updated, November 2012

(EO = element occurrence and is roughly equivalent to one or more local individuals)

The table below uses live and dead (dead/recent dead/some weathering) observations and does not include relict (relict/sub-fossil/fossil) observations.

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-08-15	33	13	1	33	18	12

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

The table and graph below have entries to indicate and separate the number of EOs where live animals were prescribed for relocation (as part of IDNR Incidental Take Authorization) or were relocated (as part of activities intended to help recover the species) during five-year interval with no subsequent observations, relative to the total number of EOs with live observations.

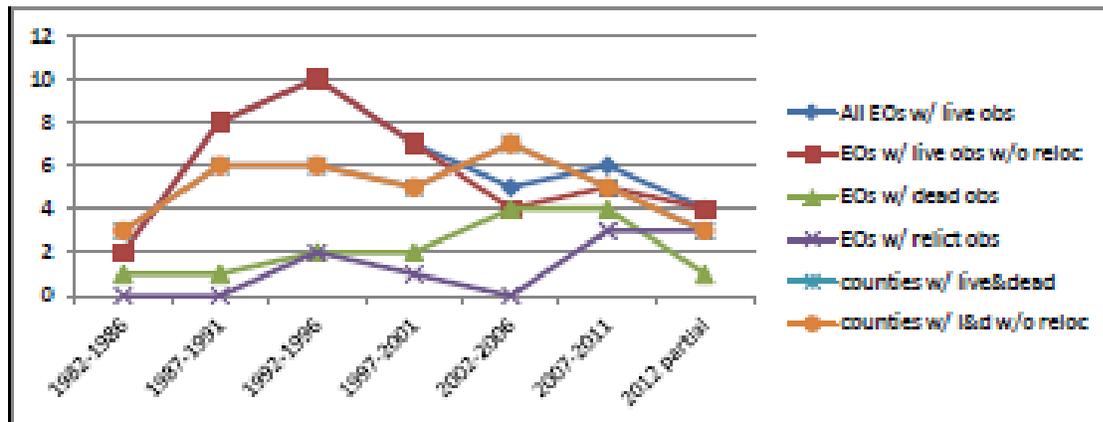
	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EOs w/ live obs	2	8	10	7	5 (1)	6 [1]	4
EOs w/ dead obs	1	1	2	2	4	4	1
EOs w/ relict obs	0	0	2	1	0	3	3
Total EOs w/ live&dead	3	8	10	7	8 (1)	8 [1]	4
counties w/ live&dead	3	6	6	5	7	5	3

As terms are used in EO reports: live = live; dead = dead/recent dead/some weathering; relict = relict/sub-fossil/fossil

[R] = # of EOs where live individuals were relocated to another location as part of intended recovery activities, no subsequent observations

[#] = # of EOs where live individuals were prescribed for relocation as part of IDNR ITA, no subsequent observations

ESPB summary of potential IDNR Incidental Take Authorization impacts to species EOs					
EO and ITA info a/o	Total # of ITAs (# of counties)	# of potential ITA impacts to total EOs	# of potential ITA impacts to recent (<10 yrs old) EOs	% of total EOs potentially impacted by ITAs	% of recent (<10 yrs old) EOs potentially impacted by ITAs
07/2011	1 (3)	3	1	10%	9%



Mankowski notes and recommendation:

The number of observation of live and/or dead animals has decreased and remained depressed since the time the species was listed as threatened in 1994, despite fairly good search effort. Twenty-one EOs (64% of total) have been surveyed since 2002, but only 10 (30% of total) had live observations, while 7 (21% of total) had "surveyed



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ILLINOIS LIST OF ENDANGERED AND THREATENED ANIMAL SPECIES

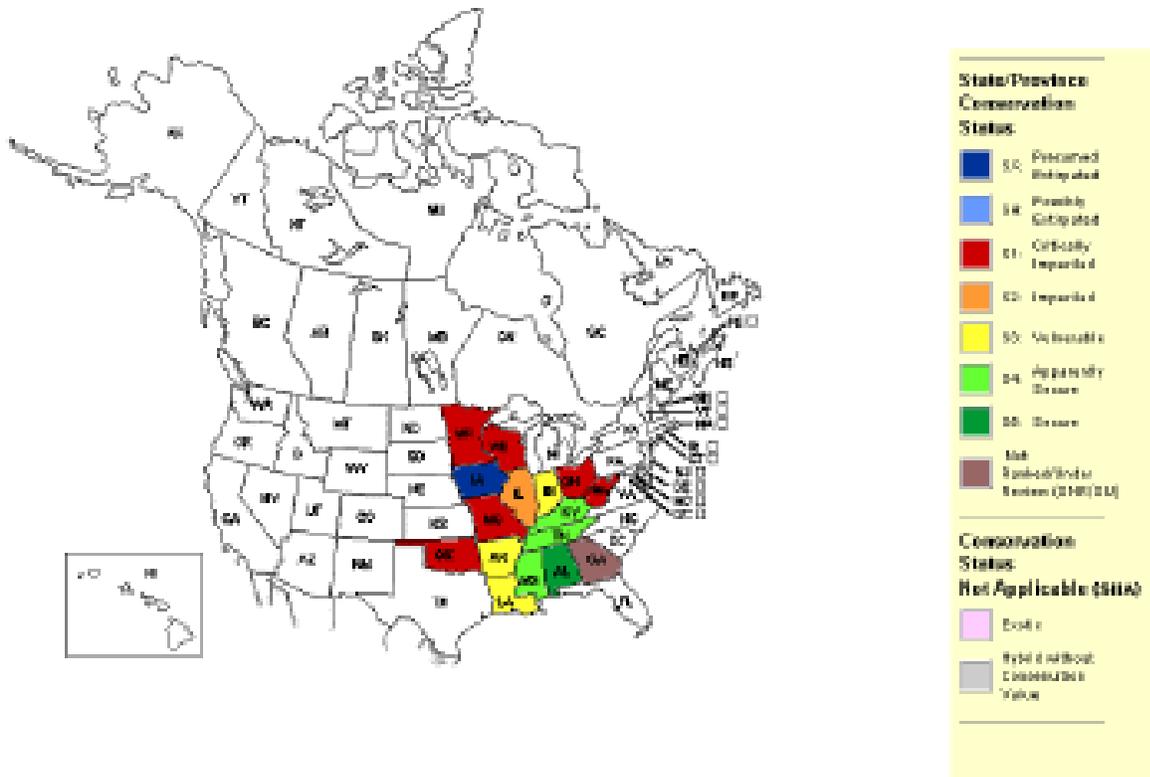
5-YEAR REVIEW AND REVISION ENDING IN 2014

Public Hearing Documents: Individual species reviews and select Board discussion and determinations for species with ESPB preliminary approval for changes in listing status, addition to, or removal from, the Illinois List.

with no observation" (4) or "relict" (3) reports. Additionally, since 2002, live or dead animals have been observed in only 13 of 39 counties with historic occurrences.

Mankowski recommendation: - change status from threatened to endangered

Fusconaia ebena



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available: <http://www.natureserve.org/explorer/>. [Accessed March 2, 2012].

Preliminary listing decision excerpts from agenda item 8 of the 158th meeting, 05/17/2013

In the review of multiple species' recommendations during the agenda item discussion, Ms. Mankowski made recommendation to change from threatened to endangered the Ebonyshell (*Fusconaia ebena*). Dr. Walk **moved** to approve Ms. Mankowski's recommendation, Dr. Hofmann seconded the motion, and it was **approved** unanimously.



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Leptodea leptodon (Scaleshell (Fed E)) - Proposed Action: add as endangered

Reviewed at: 161st meeting, 02/21/2014; meeting minutes may contain additional information and discussion

This action does not require a public hearing by the Board, but can be done during the same cycle and process as the 2014 List revision.

Federally endangered species that was considered extirpated from Illinois prior to Federal listing, so was not previously added to IL List with an Illinois listing status. Based on new discovery of one live specimen found and vouchered 14 May 2013 (Cummings, Widlow, Wyffels, Kirk) from the Illinois River, Marsailles Pool, Grundy Co., should be added to the IL List with an Illinois listing status. Data submitted to database June 18, 2013. Board staff confirmed data received and accepted by the Database, so Board staff recommends listing as Illinois endangered. Dr. Taft **moved** to approve staff recommendation, Dr. Walk seconded the motion, and it was **approved** unanimously.



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CRUSTACEANS

Caecidotea spatulata (Isopod) - Proposed Action: remove from endangered

Reviewed at: 158th meeting, 05/17/2013; meeting minutes may contain additional information and discussion

Isopod, *Caecidotea spatulata* (Illinois endangered)

Listed as ILE, 1/18/1994

Reason for listing: restricted habitats or low pops in IL;

Caecidotea spatulata Mackin and Hubricht

ISOPOD

ASELLIDAE

Status: Endangered in Illinois



Present Distribution: This species is known only from Illinois and Missouri (Peck and Lewis 1977).

Former Illinois Distribution: In Illinois this isopod is known only from St. Clair County. Recent attempts to find this species near the type locality in St. Clair County have been unsuccessful. (Page and Retzer 2002).

Habitat: In Illinois, this species is known to inhabit swales and springs (Peck and Lewis 1977).

Reason For Status: The areas in St. Clair County where this species is known to occur are highly industrial and threatened by industrial encroachment. Lewis (2000) visited 33 sites in St. Clair and Monroe counties, Illinois, and one site in St. Louis County, Missouri, but was not able to find this species.

Management Recommendations: Areas where this isopod is known or likely to occur should be protected from drainage, agricultural runoff and other actions that could potentially threaten the aquatic habitats this species depends on.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nijboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals*. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.



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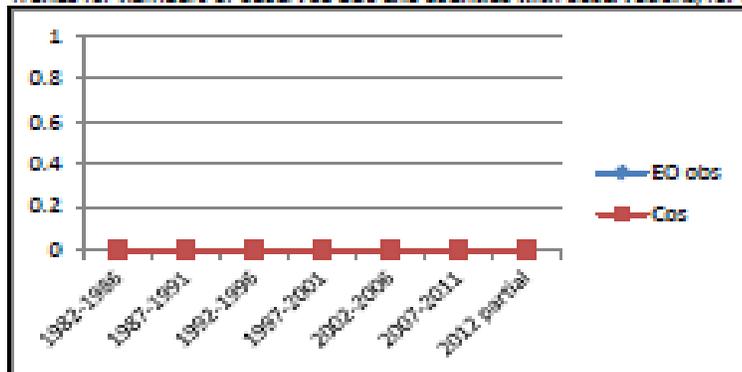
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)
 (EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
1937-04-18	1	0	0	1	1	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	0	0	0	0	0	0
Cos	0	0	0	0	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



Mankowski notes and recommendation:

This species has not been observed since 1937. There is only one EO for the species and there has been only one “surveyed with no observation” report for that EO (during 1997-2001 window). ESPB staff noted in the 03/15/13 draft 1st cut review that it would be good to have additional years of “surveyed with no observation” reports before making a recommendation for delisting as extirpated. Upon reconsideration of the EO data and species’ review, staff notes that when the Board listed the species in 1994 there was insufficient evidence to confirm any more recent observation of the 1937 occurrence information that was used to establish the singular EO for the species. Staff recommendation is that the species should be delisted because data/evidence was insufficient for initial listing and is insufficient to keep the species on the list.

Mankowski recommendation — remove from endangered. Data/evidence was insufficient for initial listing and is insufficient to keep the species on the list.

NatureServe Conservation Status in United States:

Illinois (SU), Missouri (SNR)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 22, 2012).

Preliminary listing decision excerpts from agenda item 8 of the 158th meeting, 05/17/2013

In the review of multiple species’ recommendations during the agenda item discussion, Ms. Mankowski made recommendation to remove from endangered the Isopod (*Caecidotea spatulata*). Dr. Walk **moved** to approve Ms. Mankowski’s recommendation, Dr. Hofmann seconded the motion, and it was **approved** unanimously.



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LEAFHOPPERS

Paraphlepsius lupalus (Leafhopper) - Proposed Action: remove from endangered

Reviewed at: 158th meeting, 05/17/2013; meeting minutes may contain additional information and discussion

Leafhopper, *Paraphlepsius lupalus* (Illinois endangered)

Listed as IL E, 1/18/1994

Reason for listing: restricted habitats or low pops in IL;

***Paraphlepsius lupalus* Hamilton**

LEAFHOPPER

CICADELLIDAE

Status: Endangered in Illinois



Present Distribution: This leafhopper is known only from a Lake County state park.

Former Illinois Distribution: This species is known only from northeastern Illinois.

Habitat: This species is apparently restricted to sand dunes near the shore of Lake Michigan.

Reason For Status: This leafhopper has a very restricted range. Extensive searches in other locations with suitable habitat have been unsuccessful in finding this species (R. Panzer personal communication).

Management Recommendations: Areas of the state park where this species occurs should be protected from unnecessary human disturbances. Populations of this species at this site should be monitored on a regular basis.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Henkert, and J.E. Ebinger, editors. 2006. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals*. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.



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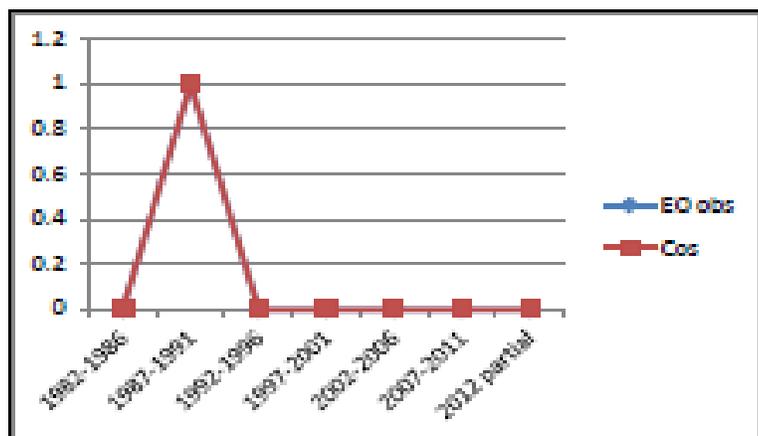
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
1991-08-21	1	0	1	1	1	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	1	0	0	0	0	0
Cos	0	1	0	0	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



Mankowski notes and recommendation:

This species is known from a singular location and has not been observed since 1991 by Dr. Ron Panzer. Dr. Chris Dietrich reported "surveyed with no observation" in 2004 and indicated he had learned via personal communication that Dr. Panzer had surveyed for the species many times since 1991, to no avail. Ms. Mankowski made request 03/12/13 to Dr. Panzer for survey dates that could be entered into the Database for those absence of presence reports. As of 04/19/2013, she had not heard back from Dr. Panzer.

Mankowski recommendation – if Dr. Panzer replies with absence of presence survey dates during adequate timeframe for Ms. Mankowski to have the information entered into the Database and re-do the species review, she will make recommendation for delisting as extirpated. If the data does not arrive, then the recommendation is for no change in status.

NatureServe Conservation Status in United States:

Illinois (S1)

(Notes: SX = presumed extirpated; SH = possibly extirpated; S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; SU = unranked [due to lack of information or substantially conflicting information]; SNR = not ranked/under review)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed February 22, 2012).



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Preliminary listing decision excerpts from agenda item 8 of the 158th meeting, 05/17/2013

In the review of multiple species' recommendations during the agenda item discussion, Ms. Mankowski made recommendation to remove from endangered the Leafhopper (*Paraphlepsius lupalus*). Dr. Walk **moved** to approve Ms. Mankowski's recommendation, Dr. Hofmann seconded the motion, and it was **approved** unanimously.



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BUTTERFLIES

Atrytone arogos (Arogos Skipper) - Proposed Action: remove from endangered

Reviewed at: 158th meeting, 05/17/2013; meeting minutes may contain additional information and discussion

Arogos Skipper, *Atrytone arogos* (Illinois endangered)

Listed as IL E, 3/17/1989

Reason for listing: restricted habitats or low pops in IL;

***Atrytone arogos* (Boisduval & Le Conte)**

AROGOS SKIPPER

HESPERIIDAE

Status: Endangered in Illinois



Present Distribution: The arogos skipper occurs from Minnesota and New York south to Florida and Texas (Pyle 1981). In Illinois, the only known colony occurred in a Mason County state nature preserve.

Former Illinois Distribution: This butterfly was first located in Illinois in the 1970s after long being suspected of occurring in the state. Searches for it in other parts of the state have been unsuccessful.

Habitat: The arogos skipper occurs in prairie areas that are dominated by little bluestem (*Schizachyrium scoparium*) and big bluestem (*Andropogon gerardii*). The larval food plants are big bluestem and little bluestem (Pyle 1981, Sedman and Hess 1985); adults are commonly encountered on pale coneflower (*Echinacea pallida*) (Heitzman and Heitzman 1987).

Reason for Status: This species is one of the rarest butterflies in Illinois, and is known from only one location in the state. It is possible that this skipper could be found in a few other locations in Illinois, but its population in the state is very low.

Management Recommendations: The one known Illinois population should be closely monitored and afforded complete protection. Research is needed to determine the influence of prairie fire on populations of this species.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals*. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.



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Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
1989-07-16	1	0	1	1	1	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	1	1	0	0	0	0	0
Cos	1	1	0	0	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals

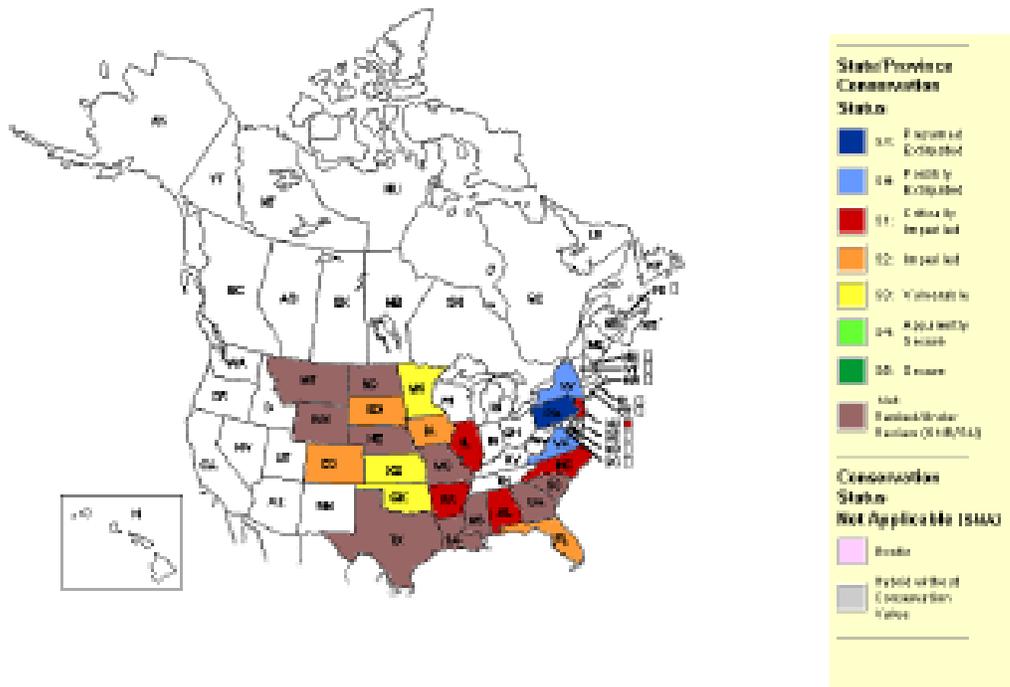
No graph produced.

Mankowski notes and recommendation:

Between 1980-1989, the species was observed in nine years; eight of those survey efforts collected all animals reported. It has not been observed at this singular location since 1989. During the time period from 1990-2003, the EO for this species was surveyed in seven years with "no observation" reported (in two of those years, the EO was visited twice).

Mankowski recommendation – delist as extirpated.

Atrytone arogos



NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed March 3, 2012).



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Preliminary listing decision excerpts from agenda item 8 of the 158th meeting, 05/17/2013

In the review of multiple species' recommendations during the agenda item discussion, Ms. Mankowski made recommendation to remove from endangered the the Arogos Skipper (*Atrytone arogos*). Dr. Walk **moved** to approve Ms. Mankowski's recommendation, Dr. Hofmann seconded the motion, and it was **approved** unanimously.



ILLINOIS ENDANGERED SPECIES PROTECTION BOARD

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Hesperia metea (Cobweb Skipper) - Proposed Action: change from threatened to endangered

Reviewed at: 158th meeting, 05/17/2013; meeting minutes may contain additional information and discussion

Cobweb Skipper, *Hesperia metea* (Illinois threatened)

Listed as IL T, 3/17/1989

Reason for listing: restricted habitats or low pops in IL;

Hesperia metea Scudder

COBWEB SKIPPER

HESPERIIDAE

Status: Threatened in Illinois



Present Distribution: The cobweb skipper is found from Minnesota and Maine south to Texas and Florida (Pyle 1981). It is presently known to occur in one southern and three west-central Illinois counties.

Former Illinois Distribution: In Illinois, this butterfly was first collected in 1978 and has since been found in three other counties.

Habitat: The cobweb skipper inhabits sand dunes, loess-sand prairies, loess hill prairies, and barrens (Sedman and Hess 1985). The larval food plants appear to be little bluestem and big bluestem (Sedman and Hess 1985, Holtzman and Holtzman 1987). Adults are frequently found on wild hyacinth (*Camassia scilloides*), wild strawberry (*Fragaria virginiana*), rose verbena (*Glandularia canadensis*), and dwarf larkspur (*Delphinium tricoqum*) (Holtzman and Holtzman 1987). This species may be dependent on fire, populations appear to be highest immediately following fire, and decline in subsequent years.

Reason for Status: This butterfly is found in very few locations in Illinois and appears to be dependent on a specific type of habitat that is rare in Illinois.

Management Recommendations: The cobweb skipper may be dependent on fire and is intolerant of vegetational change due to succession. Therefore management for early successional stages using fire appear to be important for this species' survival in Illinois. This species has a habit of relocating colonies.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals*. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.



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5-YEAR REVIEW AND REVISION ENDING IN 2014**

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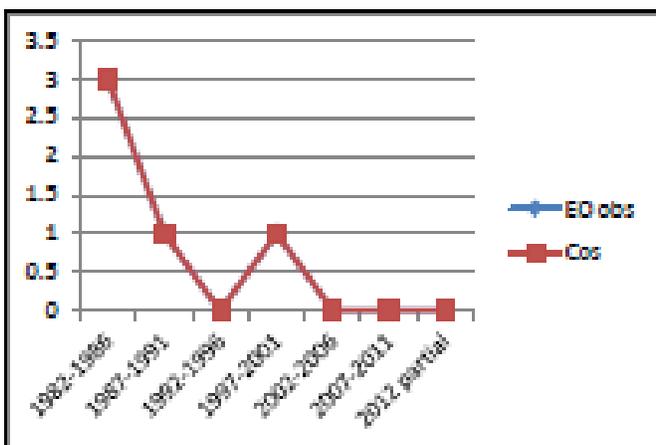
Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2000-04-13	5	0	0	5	4	0

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	3	1	0	1	0	0	0
Cos	3	1	0	1	0	0	0

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



Mankowski notes and recommendation:

There are five EOs for the species. It was most recently observed in 2000 at one EO, with the next most recent observation from 1989 at one of the other four EOs. There were “surveyed w/ no observation” reports at four EOs (80% of total) during the 2002-2006 window (three from single-year reports in 2005 and one reported in two subsequent years, 2004 and 2005). All four of the 2005 “surveyed w/ no observation” reports noted that the habitat at each location had become overgrown with forest and was probably no longer suitable for the species. It would be good to have additional confirming survey data and habitat evaluation information. However, the species is noted as intolerant to succession of vegetation, and while a 2000 report from the remaining EO observed individuals in a wooded ravine adjacent to a hill prairie, the lack of observation of the species and the associated habitat degradation described at 80% of EOs seems sufficient evidence that the species may be no longer be secure in Illinois consistent with the definition of state threatened.

Mankowski recommendation – change from threatened to endangered.

Preliminary listing decision excerpts from agenda item 8 of the 158th meeting, 05/17/2013

In the review of multiple species’ recommendations during the agenda item discussion, Ms. Mankowski made recommendation to change from threatened to endangered for Cobweb Skipper (*Hesperia metea*). Dr. Walk **moved** to approve Ms. Mankowski’s recommendation, Dr. Hofmann seconded the motion, and it was **approved** unanimously.



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Papaipema eryngii (Eryngium Stem Borer) - Proposed Action: change from endangered to threatened

Reviewed at: 158th meeting, 05/17/2013; meeting minutes may contain additional information and discussion

Eryngium Stem Borer, *Papaipema eryngii* (Illinois endangered)

Listed as IL E, 12/20/1991

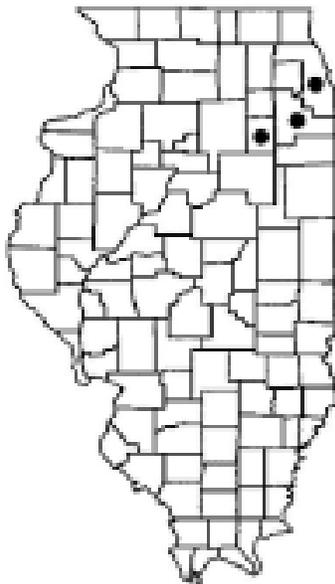
Reason for listing: very restricted geographic range of which IL is a part; restricted habitats or low pops in IL;

***Papaipema eryngii* Bird**

ERYNGIUM STEM BORER

NOCTUIDAE

Status: Endangered in Illinois



Present Distribution: The eryngium stem borer is found in northern Illinois and Indiana, Missouri, Oklahoma, Arkansas, Kentucky, and Virginia.

Former Illinois Distribution: This species was thought to be extinct in Illinois until its rediscovery in 1989 by Ron Panzer. It is now known to occur in a few state nature preserves in northeastern Illinois.

Habitat: A nocturnal, colonial species, the eryngium stem borer occurs only on large prairie areas that have abundant populations of rattlesnake master (*Eryngium yuccifolium*), its larval host plant.

Reason for Status: This species is dependent on large prairie areas with an abundance of rattlesnake master, presently an extremely rare habitat in Illinois.

Management Recommendations: Complete protection of this species is necessary. Management that benefits populations of its larval host plant (rattlesnake master) would also probably benefit this moth. Since *Papaipema* eggs are present in prairie litter during the spring and fall, fire could represent a potential threat to this species (Panzer 1988). However, mounting anecdotal evidence suggests that *Papaipema* moths can regularly survive partial burns provided that relatively large portions of their habitat remain unburned (Panzer 1988).

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur are shown as a solid circle; county records which may no longer be extant are shown as an open circle. An example of a species treatment is as follows:

Nyboer, R.W., J.R. Herkert, and J.E. Ebinger, editors. 2006. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 - Animals*. Illinois Endangered Species Protection Board, Springfield, Illinois. 181 pp.



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Illinois – Natural Heritage (Biotics 4) Database – last update February 2013 (except snails, Nov 2012)

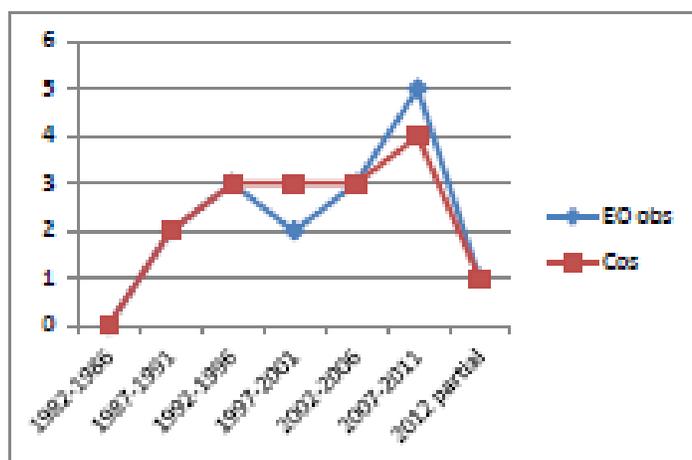
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-06-11	10	8	5	14	7	7

Observed EOs and counties with observations, for 5-year intervals, and any for 2012

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012 partial
EO obs	0	2	3	2	3	5	1
Cos	0	2	3	3	3	4	1

Trends for numbers of observed EOs and counties with observations, for 5-year intervals



Mankowski notes and recommendation:

Eight EOs (80% of total) have had observations since 2002 and five EOs (50% of total) are protected. Data from the 2007-2011 interval added five new EOs and three new counties for the species, doubling the numbers of total EOs and counties, and greatly enhancing the status and expanding the known distribution, statewide. While this increase in observations is only reflected in one, and the most recent, 5-year interval, four of the five new EOs had observations in more than one year during the time period. Only two EOs overall are based on single observations and no EOs have had “surveyed w/ no observation” reports without observation in subsequent years. Two EOs were established by stocking, one each in 1991 and 1993, but both have had subsequent observations and are not noted as receiving additional population augmentation or manipulation. It appears the species may be secure in Illinois beyond the definition of endangered.

Mankowski recommendation – change from endangered to threatened.

Preliminary listing decision excerpts from agenda item 8 of the 158th meeting, 05/17/2013

In the review of multiple species’ recommendations during the agenda item discussion, Ms. Mankowski made recommendation to change change from endangered to threatened for Eryngium Stem Borer (*Papaipema eryngii*). Dr. Walk **moved** to approve Ms. Mankowski’s recommendation, Dr. Hofmann seconded the motion, and it was **approved** unanimously.



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50 CFR Part 17, Volume 78, Number 189, Part 2 – September 30, 2013. Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Rufa Red Knot (*Calidris canutus rufa*); Proposed Rule.

50 CFR Part 17, Volume 78, Number 191, Part 3 - October 2, 2013. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List the Eastern Small-Footed Bat and the Northern Long-Eared Bat as Endangered or Threatened Species; Listing the Northern Long-Eared Bat as an Endangered Species; Proposed Rule.

50 CFR Part 17, Volume 78, Number 206, Part 2 - October 24, 2013. Endangered and Threatened Wildlife and Plants; Threatened Status for Dakota Skipper and Endangered Status for Poweshiek Skipperling; Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Dakota Skipper and Poweshiek Skipperling; Proposed Rules.

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**List of Endangered Species Protection Board Members and Staff
for the List Review and Revision ending in 2014**

Name	Position Title	Current Position Status
Lenore Beyer-Clow	Voting Member	Current Member
John Clemetsen	Voting Member, Secretary	Current Member
Dan Gooch	Voting Member, Chair	Current Member
Jim Herkert	Non-voting Member	Current Member
Joyce Hofmann	Voting Member	Current Member
Glen Kruse	Voting Member, Vice-Chair	No longer a Member
Susanne Masi	Voting Member	Current Member
James Robinett	Voting Member	Current Member
John Rogner	Non-voting Member	No longer a Member
Laurel Ross	Voting Member	Current Member
John Taft	Voting Member	Current Member
Jeffery Walk	Voting Member	Current Member
Anne Mankowski	Executive Director	Current Staff

**List of Illinois Endangered Species Protection Board Technical Expert Consultants
for the List Review and Revision ending in 2014**

Name	Taxonomic Group Expertise	Geographic and/or Specialization	Affiliation
Scott Ballard	Reptiles and Amphibians	Southern IL	IL Department of Natural Resources
Tara Beveroth	Birds	Statewide	IL Natural History Survey
Ron Brandon	Reptiles and Amphibians	Southern IL	Retired, Southern Illinois University
Brooks Burr	Fish	Southern IL, Statewide	Retired, Southern Illinois University
Tim Carter	Mammals	Southern IL, bats	Ball State University
Tim Cashatt	Invertebrates	Lepidoptera & Odonata	Illinois State Museum
Kevin Cummings	Invertebrates	Mussels	IL Natural History Survey
Chris Dietrich	Invertebrates	Homoptera, Terrest., Inverts.	IL Natural History Survey
Jim Herkert	Birds	Statewide	IL Department of Natural Resources
Ed Heske	Mammals	Statewide	IL Natural History Survey
Leon Hinz	Fish	Statewide	IL Natural History Survey
Joyce Hofmann	Mammals	Statewide	Retired, IL Natural History Survey
Jeff Hoover	Birds	Statewide	IL Natural History Survey
Meredith Mahoney	Reptiles and Amphibians	Statewide	Illinois State Museum
Rod McClanahan	Mammals	Southern IL, bats	U.S. Forest Service
Joe Merritt	Mammals	Statewide	Illinois Natural History Survey
Jim Mountjoy	Birds	Western IL	Knox College
Judy Pollock	Birds	Northeastern IL	Audubon Chicago
Mike Redmer	Reptiles and Amphibians	Statewide, Northern IL	U.S. Fish and Wildlife Service
Doug Stotz	Birds	Northeastern IL	Field Museum
Bob Szafoni	Invertebrates	Mussels	IL Department of Natural Resources
Chris Taylor	Fish, Invertebrates	Statewide, Crustacea	IL Natural History Survey
Steve Taylor	Invertebrates	Heteroptera, Cave Inverts.	IL Natural History Survey
Trent Thomas	Fish	Statewide	IL Department of Natural Resources
Jeremy Tiemann	Fish, Invertebrates	Statewide, Snails, Mussels	IL Natural History Survey
Frank Veraldi	Fish	Northern IL, Lake Michigan	US Army Corps of Engineers
Jeff Walk	Birds	Statewide	The Nature Conservancy
Mike Ward	Birds	Statewide	IL Natural History Survey
Jim Wiker	Invertebrates	Lepidoptera	Affiliate, Illinois State Museum
Phil Willink	Fish	Northern IL, Lake Michigan	Shedd Aquarium



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