ILLINOIS ENDANGERED SPECIES PROTECTION BOARD

MINUTES OF THE 156th MEETING

MIDEWIN NATIONAL TALLGRASS PRAIRIE, WILMINGTON, IL

9 NOVEMBER, 2012
(Approved at the 157th meeting, February 8, 2013)

BOARD MEMBERS PRESENT: Chair Dan Gooch, Vice-chair Glen Kruse, Secretary John Clemetsen, Dr. Joyce Hofmann, Ms. Susanne Masi, Ms. Laurel Ross, Dr. John Taft, Dr. Jeff Walk.

BOARD MEMBERS ABSENT: Mr. John Rogner.

BOARD MEMBER VACANCIES: One.

OTHERS PRESENT: Ms. Michelle Parker and Mr. Jim Robinett (John G. Shedd Aquarium), Ms. Jeannie Barnes (Illinois Natural History Survey), Mr. Randy Heidorn (Illinois Nature Preserves Commission), Ms. Kathi Davis, Dr. Jim Herkert, and Mr. Don McFall (Illinois Department of Natural Resources), and Ms. Anne Mankowski (Endangered Species Protection Board).

156-1 Call to Order Welcome and Introduction of Guests
Chair Gooch called the meeting to order at 9:33 AM, asked Board members to introduce themselves and noted that there was a quorum. He then asked audience members to introduce themselves.

156-2 Adoption of Agenda
Chair Gooch asked if there were any changes to the agenda. None were noted and Ms. Ross **moved** to adopt the agenda, Dr. Hofmann seconded the motion, and it was **approved** unanimously.

156-3 Approval of Minutes of the 155th (08/10/12) Meeting
Chair Gooch asked if there were any corrections to the minutes of the 155th meeting. Dr. Hofmann noted a correction from "Mr." to "Dr." for Joe Merritt in the listing of "Others Present". Ms. Masi asked for the addition of "for plants in northeastern Illinois." to the end of the 4th sentence, 3rd paragraph, under item 155-14. Ms. Mankowski indicated she would make the changes to the final iteration. Dr. Hofmann **moved** to approve the minutes as amended, Ms. Masi seconded the motion and it was **approved** unanimously.

156-4 ESPB Staff Report
Ms. Mankowski, Director of the Illinois Endangered Species Protection Board, gave her report (Attachment A).

During her report, Ms. Mankowski acknowledged audience members Jim Robinett and Michelle Parker from the Shedd Aquarium, reminding the Board of the recently forged partnership for endangered and threatened species research between the Board and the Shedd. Chair Gooch asked Mr. Robinett, Vice President of Legislation and Regulation, if he would like to provide the Board with any update of Shedd activities. Mr. Robinett reviewed that Dr. Chuck Knapp, Vice President of Conservation and Research, was involved with negotiating the partnership with the Board and securing the resources necessary to hire Philip Willink, who started at the Shedd in May of 2012 and has begun work to compile distribution data for threatened and endangered Illinois fish species, identify knowledge gaps, conduct follow-up surveys,

and attempt to determine factors that contribute to the decline or persistence of species. Mr. Robinett added that the Shedd also looks forward to opportunities for working with the Board on endangered and threatened species outreach and educational resources. Ms. Mankowski and Chair Gooch indicated that the Board welcomed that opportunity and thanked Mr. Robinett for his presentation and the Shedd's partnership.

156-5 IDNR Staff Report

Dr. Herkert, Director of IDNR Office of Resource Conservation, and Mr. McFall, Chief of IDNR Division of Natural Heritage, gave their report (Attachment B).

During Dr. Herkert's presentation about "Operation Endangered Species", the Board noted that the IDNR's recovery plan for the Alligator Snapping Turtle was never approved by the Board and asked when the IDNR might expect to present it to the Board for consideration for approval, as prescribed by IDNR Assistant Director John Rogner. Dr. Herkert said he was not sure of a timeframe, but thought they would try for the Board's 157th meeting, to be held February 8, 2013. Chair Gooch asked how it was that Pontiac High School selected the Alligator Snapping Turtle? Dr. Herkert indicated that the lead teacher from Pontiac HS was directed to the species by IDNR staff. Dr. Walk asked what role the IDNR would play in developing curriculum materials for the schools participating in the project, noting that it seemed important to ensure that students are educated about all aspects of endangered species listing and conservation/recovery, including the reasons for and threats associated with species becoming endangered, and how those and other aspects (habitat requirements, genetic considerations, etc.) are managed when planning and implementing recovery strategies, and then how monitoring and follow-up reporting are necessary to properly evaluate successes and failures of actions. Dr. Herkert indicated that he was not sure whether the IDNR would address those elements by becoming directly involved in building curriculum materials or would rely on the Pontiac HS project leaders to develop materials based on information provided in the final species recovery plan.

156-6 INPC Staff Report

Mr. Heidorn, Acting Director of the Illinois Nature Preserves Commission, gave his report (Attachment C).

156-7 Board Appointments

Ms. Mankowski reported that since the August 2012 meeting, the Governor's Office had confirmed reappointments for Chair Gooch, Vice-chair Kruse, and Dr. Hofmann. The Board had not received information regarding any action on Board recommended reappointments for Ms. Masi or Dr. Taft or for appointment of Dr. Brooks Burr.

156-8 2012 Ethics Training for Appointees to State Boards and Commissions

Ms. Mankowski reported that all appointed members and staff completed the required annual training.

156-9 ESPB Publication – The Illinois Endangered Species Protection Act at 40: a Review of the Act's Provisions and the Illinois List of Endangered and Threatened Species

Ms. Mankowski reported that the subject document was posted to the ESPB website and email notice of the posting was sent. She encouraged Board members to familiarize themselves with the document. She explained that the ESPA at 40 document reviews several issues related to maintaining the IL List that will be appropriate to consider as the Board reviews and revises as necessary the IL List review process prior to the next 5-year review (ending in 2019). The report also reviews several issues related to ESPB/IDNR coordination, IDNR E&T Possession Permits, IDNR Incidental Take Authorization, and recovery planning that ESPB Chair Gooch, ESPB Member Walk, and Ms. Mankowski will begin discussing over several months with IDNR. As preparation and background for future discussions that may involve the

entire Board, Ms. Mankowski will begin sending Board members review documents about respective issues.

156-10 Process for vetting and nominating potential new Board Members and for training newly appointed Board Members

Dr. Walk reviewed a proposed framework that he and Ms. Mankowski had prepared for the Board to use in identifying and vetting candidates, recommending new members, and training new appointees to the Board. He explained that according to the Illinois Endangered Species Protection Act, Board members are appointed by the Governor's Office, and in making appointments, the Governor gives consideration to recommendations from conservation groups. The Board provides recommendations for new members to the Governor's Office in that capacity. Prior to 2010, the Board made such recommendations to the Director of the Illinois Department of Natural Resources (IDNR) who then forwarded to the Governor's Office the Board's recommendation and conveyed support for the same. Beginning in 2010, the Governor's office began a required self-nomination process for any individual wishing to serve on a state board or commission via the Appointment.Illinois.Gov web-portal. In reviewing candidates for Board membership, the Governor's office considers those individuals who have completed the web-based self-nomination process and the Board continues its recommendation process as supplemental to that on-line process. The Board discussed the process proposed by Dr. Walk and agreed to its use.

156-11 Board Discussion about Whether the Board Should Maintain a "Watch List"

Chair Gooch introduced the agenda item by explaining that the Board had discussed the item many times over many years, including at the previous meeting. He added that the Board wants and needs a means by which to maintain some type of informal list of species for which the Board has questions about status and distribution, but has struggled with what fully the list would address (what exactly are we "watching" for), how it is intended to or might be used by the Board and others, and the administrative or operational means for maintaining such a list.

Dr. Taft reviewed that he had contacted all Illinois-adjacent states to gain information about respective uses of such lists. Chair Gooch noted that some states have "watch lists" or "species of concern" language in their legislation so there is a legal meaning attached to the designation and those agencies have the authority and responsibility to maintain such a list. There was discussion that criteria vary, so some designations on these lists by other states may mean a level of concern due to rarity (below what might be considered "threatened"), due to uncertainty, or some other classification. The question was asked whether a copy of the Board's old list was available? No one was sure. There was discussion that such a Board "sanctioned" list had been misused in the past by individuals or entities seeking grants, protection of properties, or for the IDNR to perform consultation when "watch list" species were present. It was noted that while such assertions may not have legal bearing, dealing with them and responding is an administrative burden and confuses the public discourse. Chair Gooch commented that based on examples cited in the current discussion and what he had seen in the past, he maintained concern that such a list can divert Board, IDNR, INPC, and other agency/organization attention and already inadequate resources away from endangered and threatened species. Dr. Herkert suggested the Board focus less on the harm associated with such a list and consider what actual utility might be gained. He noted that in the past, maintaining such a list had never resulted in the Board gaining additional and useful information for the species in question. Dr. Taft suggested that some plants that had been listed as endangered or threatened perhaps never should have been listed and if there had been a "watch list" to serve as a holding place while gathering more information, maybe questions would have been answered prior to their being added as endangered or threatened.

There was general consensus that the Board needs to track species for which there are questions. Chair Gooch recommended that rather than formalizing any type of "listing", as the Board moves through the

current List review, individual Board members should recommend such species and research needs and they might be added to the Board's research list or noted in meeting minutes. Ms. Ross endorsed Chair Gooch's idea as a good compromise of addressing the need, but not creating another bureaucratic or administrative level. Chair Gooch asked if there was a specific motion on the topic resulting from the discussion and there was none.

156-12 2014 Illinois List Review: A Review of the Process, Outstanding Species Issues, and Board Preliminary Approvals to Date

Ms. Mankowski reviewed the Illinois List 5-year review process and schedule including information about legal requirements, individual species' status and distribution data and information that is being considered, and the process by which she and the Board are engaging advice of the ESPB technical expert consultants (ESPB TECs) (see Attachment D).

156-13 2014 Illinois List Review: Recommendation for Changes to the Lists of Illinois Endangered and Threatened Amphibians and Reptiles

Ms. Mankowski presented her recommendations for listing status changes for amphibians (see Attachment E) and for reptiles (see Attachment F) and engaged Board members in reviewing the species data and information compiled and answered Board member questions.

Ms. Mankowski reviewed that she recommended no changes to the status of any currently listed species, nor to add any species, to the list of amphibians. Secretary Clemetsen **moved** to approve Ms. Mankowski's recommendation for no status changes to the current list of amphibians and Ms. Ross seconded the motion. Dr. Walk stated that he understood the Hellbender is difficult to survey, but noted that there were no observations of the species for 20 years and asked if the Board has a standard for how long a species would go without observation before it might be considered for delisting. Ms. Mankowski replied that the Board developed some time ago guidelines for plants, where discussion for possible delisting would be triggered after 30 years of no observations, but noted that those guidelines did not include standards about required search effort or allowances for differing species ecology. She stated that she was not aware of any similar guidelines for animals and asked Dr. Herkert if he recalled. Dr. Herkert responded that none had been established for animals, explaining the Board's reluctance to try to standardize required search effort and time periods across species with differing ecology and survey requirements. Dr. Walk had a question about how secure should be considered a species such as the Silvery Salamander, which is at the edge of its range in Illinois and occurs in only a few locations in an overall small geographic, but many of its occurrences are protected? Chair Gooch commented that he and Ms. Mankowski had been discussing the same thing about other species and suggested that the Board probably needs to have a broader discussion about the topic of listing status for species with limited distribution in the state and the relative protection status of occurrences at some time interim to the List review. Ms. Mankowski responded that for the Silvery Salamander, there are four occurrences in the state and all are protected, but also that the distribution of the four occurrences only represents a portion of its historic distribution in the state. She noted that she believes the types of species they were discussing are those that should be priorities for developing status review triggers. Dr. Walk stated that he did not propose amendment to the motion on the floor. The Board voted on the motion to make no status changes to the current list of amphibians and it was **approved** unanimously.

Ms. Mankowski reviewed that she recommended no changes to the status of any currently listed species, nor to add any species, to the list of reptiles. Vice-chair Kruse **moved** to approve Ms. Mankowski's recommendation for no status changes to the list of reptiles and Dr. Walk seconded the motion. Dr. Walk asked for clarification regarding ESPB TEC Mike Redmer's comment about the scientific name for Eastern Massasauga. Ms. Mankowski explained that Mr. Redmer provided copy of a scientific paper that made official clarification for the Eastern Massasauga to be recognized as a species and not a subspecies

and he recommended that Illinois make a scientific name change that dropped the subspecies designation. Ms. Mankowski had provided Mr. Redmer a response and explained to the Board that the Board had never used the subspecies designation and it was never used in the Administrative Rule that constitutes the legal Illinois List, so no change is necessary. She noted that the Illinois Natural Heritage (Biotics 4) Database does use the subspecies designation and she had forwarded to them a recommendation for the correction. Dr. Taft noted confusion and asked why the Smooth Softshell was listed as endangered when it had so many occurrences as compared to the Mississippi Green Watersnake that only had one occurrence and was listed as threatened. Ms. Mankowski replied that the Smooth Softshell was just listed in the previous List revision (2009) and that the status was based on information available at that time and since then additional occurrence information has been submitted to the Database. She noted that recent occurrences should be considered in the context of historic range and distribution and suggested that based on the information to date and what comes in over the next few years, it will probably be looked at more closely during the next review. For the Mississippi Green Watersnake, she explained that it had never been known from much more than its current distribution. Dr. Taft did not amend the motion on the floor. The Board voted on the motion to make no status changes to the current list of reptiles and it was **approved** unanimously.

All Board preliminarily approved revisions to the Illinois lists of endangered and threatened amphibians and reptiles during the meeting, included:

Board preliminarily approved revisions to the Illinois List - amphibians

Endangered to threatened:	None
Threatened to endangered:	None
Remove from endangered:	None
Remove from threatened:	None
Add as endangered:	None
Add as threatened:	None
No listing status change:	
Ambystoma platineum	Silvery Salamander
Ambystoma jeffersonianum	Jefferson Salamander
Cryptobranchus alleganiensis	Eastern Hellbender
Desmognathus conanti	Spotted Dusky Salamander
Gastrophryne carolinensis	Eastern Narrowmouth Toad
Hemidactylium scutatum	Four-toed Salamander
Hyla avivoca	Bird-voiced Treefrog
Nectrurus maculosus	Mudpuppy
Pseudacris illinoensis	Illinois Chorus Frog

Board preliminarily approved revisions to the Illinois List - reptiles

Endangered to threatened:	None
Threatened to endangered:	None

Remove from endangered:	None
Remove from threatened:	None
Add as endangered:	None
Add as threatened:	None

No listing status change:

Apalone mutica	Smooth Softshell
Clemmys guttata	Spotted Turtle
Clonophis kirtlandi	Kirtland's Snake
Crotalus horridus	Timber Rattlesnake
Emydoidea blandingii	Blanding's Turtle
Heterodon nasicus	Plains Hog-Nosed Snake
Kinosternon flavescens	Yellow Mud Turtle
Macrochelys temminckii	Alligator Snapping Turtle
Masticophis flagellum	Coachwhip
Nerodia cyclopion	Mississippi Green Watersnake
Nerodia fasciata	Broad-banded Watersnake
Pantherophis emoryi	Great Plains Rat Snake
Pseudemys concinna	River Cooter
Sistrurus catenatus	Eastern Massasauga
Tantilla gracilis	Flathead Snake
Terrapene ornata	Ornate Box Turtle
Thamnophis sauritus	Eastern Ribbonsnake
Tropidoclonion lineatum	Lined Snake

156-14 Next Meeting Information

The Board's next regularly scheduled meeting will be February 8, 2013 at 9:30 AM at Midewin National Tallgrass Prairie.

May 17, 2013
August 16, 2013
November 15, 2013

156-15 Public Comment Period (3 minutes per person)

There were no public comments.

156-16 Other Business (Board members complete travel forms and time reporting sheets)

Board members completed travel forms and time reporting sheets.

156-17 Adjournment

Secretary Clemetsen **moved** to adjourn, Ms. Masi seconded the motion, and it was **approved** unanimously. The meeting was adjourned at 12:00 PM.

Attachment A

Illinois Endangered Species Protection Board staff report
for the 156th Meeting, November 9, 2012
Submitted by Anne Mankowski, Director

The Board currently only has one staff, its Director; all activities were conducted by the ESPB Director unless otherwise noted. Ms. Mankowski has not been able to complete all required work in the course of a 37.5-hour work week. Since the last staff report, Ms Mankowski has worked the following overtime hours toward ESPB and IDNR duties: August: claimed = 55.5, donated = 10.5; September: claimed = 69.5, donated = 6.5; October: claimed = 50.0, donated = 1.5.

1. Illinois List of Endangered and Threatened Species Review and Revision ending in 2014
The Board has begun work on the next five-review of the List; the process usually takes about two years. The Board is required by law to base its listing decisions on scientific evidence. Ms. Mankowski spent a great deal of time compiling species information, with some assistance from the IDNR Natural Heritage Database staff. She also spent a great deal of time communicating with the EPSB technical expert consultants for species status and distribution information/evidence and review of ESPB staff listing status recommendations in preparation for the Board's consideration.

2. Work on the 40 Years of the Illinois Endangered Species Protection Act Publication
The final document, the *Illinois Endangered Species Protection Act at 40: A Review of the Act's Provisions and the Illinois List of Endangered and Threatened Species*, was posted to the Board's website in September, 2012.

3. ESPB-led project to contract surveys to update endangered and threatened animal occurrence records that are greater than 10 years old
Ms. Mankowski continued working on USFWS State Wildlife Grant FFY2012 materials for the subject project. As of May 2012, there were 2,958 endangered and threatened species animal occurrences in the Database and more than 25% had not been re-visited/re-surveyed within the last 10 years. The project will address IDNR administrative regions 1-4 (region 5 is being addressed under a separate project) and may update as many as 500 records. The project will not initiate survey work until the 2013 field season or later.

4. ESPB Website
Ms. Mankowski spent time working with IDNR web support staff on updates to the ESPB website. The ESPB website serves as the web portal for ESPB and IDNR administered endangered and threatened species program information.

5. ESPB Budget
Ms. Mankowski continues working with IDNR on multiple budget assignments related to the FY2013 and FY2014 budgets. She forwarded to IDNR Director Miller and IDNR Chief Fiscal Officer Stotts, the ESPB FY2014 budget request that the Board approved at the August, 2012 meeting.

6. ESPB Research/Strategic Projects Program
Ms. Mankowski continues administration of IDNR research projects.

9. Meetings, Presentations, and other Publications
Ms. Mankowski participates in IDNR ORC twice-monthly administrative meetings.

Ms. Mankowski participated in the 62nd Natural Areas Evaluation Committee (NAEC) meeting held at IDNR headquarters August 21, 2012. The ESPB is a voting member of the NAEC. Meetings planned for September and October were cancelled.

Ms. Mankowski attended the 212th meeting of the Illinois Nature Preserves Commission held on September 11, 2012 in Waterloo, Illinois. She presented a report of ESPB activities.

Ms. Mankowski and Dr. Jim Herkert, with Dr. Dan Ludwig, held a September 28, 2012 meeting of the Illinois Blanding's Turtle recovery planning team at Midewin National Tallgrass Prairie, in Wilmington, Illinois. Ms. Mankowski is administering an ESPB contract with Dr. Rich King as the lead author of a partial draft and the planning team continues working on a partial first draft. After the planning team completes a partial first draft, Ms. Mankowski and Dr. Herkert will then coordinate between ESPB and IDNR and within IDNR in developing a complete first draft.

10. Coordination with IDNR and INPC:
Ms. Mankowski coordinated with the Endangered Species Program ORC, Division of Wildlife ORC, Impact Assessment Section OREP, Office of Land Management, Office of Law Enforcement, Office of Legal Counsel, Office of Strategic Services, Media Relations, and Illinois Nature Preserves Commission, on multiple matters, including:

- Met with IDNR ORC Director, Jim Herkert, to review ESPB/IDNR coordination of endangered and threatened species work.
- Assisted IDNR Fiscal with responding to the Auditor's Office requests for information and explanation regarding mandates of the IL Endangered Species Protection Act.
- Met with IDNR ORC Watershed Protection Manager, Ann Holtrop, to review the relationship, and opportunities for coordination, between the ESPB IL List review and revision and IL Wildlife Action Plan Species in Greatest Need of Conservation review and revision. Additional aspects of the IWAP document and revision were also discussed.
- Provided review and comments to IDNR OREP on draft proposed amendments to the Illinois Endangered Species Protection Act.
- Provided information requested by IDNR ORC relative to its strategic planning and budgeting for results processes.
- Met with and provided assistance to IDNR OLC in reviewing the Illinois Endangered Species Protection Act and the administrative rules that support it as they relate to various endangered and threatened species issues.
- Provided recommendations to IDNR regarding issues related to authorizations for incidental taking of endangered and threatened species and permits for possession of specimens or products of endangered or threatened species.
- Provided review and comments to the Illinois Nature Preserves Commission regarding proposed translocation of Wooly Milkweed (*Asclepias lanuginosa*).
- Provided recommendations to Natural Heritage Biologist, Mark Guetersloh, regarding proposed reintroduction of formerly listed Powdery Thalia (*Thalia dealbata*).
- In conjunction with Natural Heritage Biologist, Terry Esker, continued project management of the Illinois Barn Owl (*Tyto alba*) recovery project.
- Continued project management for the development of a Blanding's Turtle (*Emydoidea blandingii*) recovery plan.
- Provided to IDNR ORC information about the endangered and threatened species translocation approval coordination process between IDNR and ESPB that is supposed to precede issuance of an IDNR Endangered and Threatened Species Possession Permit for projects involving translocation.
- Provided review, comments, and questions to IDNR on three draft incidental take authorizations: Clay mining in Pulaski County, involving Spotted Dusky Salamander (*Desmognathus conanti*); FAP 301 (US 20) over Rock River, Winnebago County, involving the Black Sandshell (*Ligumia recta*); and, FAP 885 (IL 146) over Peters Creek, Hardin County, involving the Kentucky Crayfish (*Orconectes kentuckiensis*).
- Handled over 100 phone and email requests for ESPB and E&T information from the public and other state and federal agencies including referring those related to IDNR E&T consultation, incidental take, data, and permit programs, etc.

10. Coordination with other Agencies
- Ms. Mankowski communicated with Philip Willink and Jim Robinett of the Shedd Aquarium about partnership between the Board, IDNR, and the Shedd for work on aquatic endangered and threatened animal species monitoring and research.

- Ms. Mankowski met briefly with Joyce Blumenshine from the Sierra Club following the September 11, 2012 Illinois Nature Preserves Commission Meeting. Ms. Blumenshine was an audience member at the INPC meeting and asked to discuss with Ms. Mankowski the issues related to IDNR mining permits and IDNR endangered and threatened species consultation that the Board had addressed as an agenda item at its August 10, 2012 meeting.
- Ms. Mankowski provided the Illinois Audubon Society information and review of a Grand Victoria – Vital Lands grant proposal related to protection of a site in Lee County that harbors several listed species.

11. Field Work

- None.

12. Other General Administration and Clerical Work

- Prepared and routed Board member and staff travel vouchers and timesheets.
- Per Open Meetings Act requirements, contracted public notice publication for a change in the starting time of the 156th, November 9, 2012, ESPB meeting. Prepared and routed vendor payment. Sent email notice of the same to ESPB email distribution list and made respective changes to the ESPB website.
- Contracted to have Board member and staff nameplates made. Prepared and routed vendor payment.
- Conducted administration related to Board research projects.
- Conducted updates to ESPB budget tracking on ORC sharepoint.
- Regularly distributed information to Board members via email and hardcopy mailings.
- Per Ethics Act requirements, distributed to Board members information regarding revolving door prohibitions and coordinated response for IDNR Ethics Officer.
- Attended a two-day Rutan training held at IDNR in Springfield.
- All aspects of preparation for the November 9, 2012, 156th ESPB meeting.

Illinois Department of Natural Resources report to the Illinois Endangered Species Protection Board at the 156th meeting, November 9, 2012

Natural Heritage Database fee
DNRs Sustainability Package of new user fees is now working its way through the legislative process. The Sustainability Package includes a fee for data requests from the natural heritage database. The fee will be authorized in the Natural Areas Preservation Act by amending the act. Fees collected will be deposited into the Natural Areas Acquisition Fund and used to support the database. Database staff fill about 400 data requests per year.

Natural Heritage Database
In October, database staff mapped and/or did data entry of 162 E&T occurrences, both new and updates and received 88 records of E&T species.

Illinois Wildlife Action Plan
Chris Evans began work August 27 as the Illinois Wildlife Action Plans Invasive Species Campaign coordinator. DNR received a federal SWG grant to obtain Chris' services for the next three years. He will work closely with Jody Shimp, the DNRs Invasive Species Campaign lead.

Hines Emerald Dragonfly Habitat Conservation Plan
In regards to the ongoing Hine's Emerald Dragonfly Habitat Conservation Plan (HCP): The Director of the U.S. Fish and Wildlife Service recently approved an amendment to the Section 6 HCP grant. This amendment will allow the partnership to produce a *final report* and meet the conservation objectives and goals of the grant by its current closing date of December 31, 2012. This amendment changes the scope of the agreement by *amending* the grant deliverables identified in the original proposal. Specifically, the grant deliverable changes from "a complete HCP accepted by the U.S. Fish and Wildlife Service and judged to be adequate to assure the continued existence of the Hine's emerald dragonfly in the Lower Des Plaines River Valley (in northeast Illinois) while allowing incidental take of the species as described in the HCP" <u>to</u> "a final report documenting: 1) recovery actions identified for implementation; 2) the results of monitoring and survey activities; 3) habitat management actions identified as necessary for the HCP; 4) analysis of impacts of partner activities: and 5) the results of research into mitigation opportunities." To assist the IDNR and USFWS in fulfilling the new scope of the grant, we are asking the grant partners to prepare a report as outlined above and describe how the information garnered from the work completed will assist in the development of an HCP for the Hine's emerald dragonfly in the Lower DesPlaines River Valley.

"Operation Endangered Species"
State Farm Insurance company recently awarded both Pontiac Township High School and the Illinois Department of Natural Resources a grant in the amount of $100,000.00 for "Operation Endangered Species" in Illinois. This is a cooperative effort that will directly benefit the recovery of the alligator snapping turtle in Illinois. A formal check presentation ceremony is scheduled for November 9, 2012 in Pontiac.

Oil-Dri Corporation Incidental Take Authorization

On October 19, 2012, DNR was notified by Oil-Dri Corporation of America that a settlement in the amount of $150,000.00 will be provided to DNR as compensation for the potential take of the State endangered spotted dusky salamander at various absorbent clay mining sites in Pulaski County, Illinois. This incidental take has been active for over 7 years and we are very happy to finally reach a resolution.

Midwest Wind Energy Regional Multi-State Habitat Conservation Plan

An upcoming focus group meeting is scheduled at 9:30-12:30pm on November 14th at the IDNR building in Springfield (Lake Level Rooms B &C, One Natural Resources Way, Springfield). The primary purpose of the focus group meeting is to obtain needed input into development of a Strategic Mitigation Framework using a Green Infrastructure Approach being prepared by The Conservation Fund for the Midwest Wind Energy Regional Multi-State Habitat Conservation Plan (MSHCP). In preparation for this meeting, the following materials are available through Joe Kath: Draft focus group meeting agenda; Frequently Asked Questions about the Midwest Wind Energy Regional MSHCP Section 6 Grant prepared by The Conservation Fund; Two peer reviewed articles from the journal Environmental Practice on green infrastructure (Allen 2012 & Lerner/Allen 2012); A green infrastructure and landscapes report prepared by The Conservation Fund; Draft list of potential focal/surrogate species for green infrastructure network design prepared by The Conservation Fund; Plan synthesis and SWAP summary prepared by The Conservation Fund; and a GIS data quality assessment matrix prepared by The Conservation Fund. This focus group session is by invite-only and has been coordinated with Joe Kath (joe.kath@illinois.gov<mailto:joe.kath@illinois.gov>) Illinois' state focus group coordinator. Please contact Joe if you wish to attend and/or have any questions.

Rabbitsfoot mussel

On October 15, 2012, the USFWS proposed to protect the rabbitsfoot mussel under the Endangered Species Act. Current evidence suggests that the rabbitsfoot may become threatened with extinction in the foreseeable future. As a result, the Service has proposed to protect the species under the Endangered Species Act, and is seeking new information from the public and the scientific community that will assist the agency in making a final determination. The Service first identified the rabbitsfoot as a candidate for ESA protection in 1994. It historically occurred in river systems within 15 states but is now found in 51 rivers and creeks in 13 states (Alabama, Arkansas, Illinois, Indiana, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Ohio, Oklahoma, Pennsylvania, and Tennessee). The Service is proposing to list the rabbitsfoot as threatened and designate critical habitat. Service biologists have identified 2,138 miles of stream channels in 12 states (Alabama, Arkansas, Kansas, Kentucky, Illinois, Indiana, Mississippi, Missouri, Ohio, Oklahoma, Pennsylvania, and Tennessee) that may contain stream channel habitat essential to the conservation of these species.

To: Endangered Species Protection Board Members

From: Randy Heidorn

Date: November 9, 2012

Subject: Illinois Nature Preserves Commission (INPC) report for the Endangered Species Protection Board (ESPB)

The INPC has changed the way we report our activities. Information is compiled on staff activities and provided as attachments to this memo. Additional information on INPC operations and protection efforts follows:

Governor Quinn appointed Dr. Penelope DauBach of Fults, IL to replace Dr. Richard Keating as member of the INPC.

The 212th meeting of the INPC was held at the Monroe County Annex in Waterloo, Illinois on September 11, 2012. Dr. David Thomas was elected Chair of the INPC. Donald R. Dann was elected Vice Chair. George Covington was elected Secretary. All officers serve for one year.

The following sites were protected at the 212th meeting of the INPC:

1. Parcels approved for registration as an Illinois land and water reserve (LWR) include:
   a. Embarrass Ridges, Coles Co., 141 acres owned by Grand Prairie Friends, qualifies as a forest larger than 100 acres supporting 17 species of birds that are moderately or highly sensitive to forest fragmentation.
   b. Addition to Sweet Fern Savanna LWR, Kankakee Co., 3.4 acres owned by private individual protecting high quality dry-mesic savanna of the Kankakee Sands Section of the Grand Prairie Natural Division and habitat for fifteen threatened or endangered plants and three endangered animals.
2. Given preliminary approval for dedication as an Illinois Nature Preserve (NP):
   a. Springbrook Prairie, Du Page Co. 1,529 acres owned by the Forest Preserve District of DuPage County protecting habitat for five birds and three plants listed as state endangered or threatened.
   b. William G. Well and Pleasant Hill Wetland Buffer additions to Dokum Mskoda Sedge Meadow NP, Lake Co., 20.5 acres owned by Conserve Lake County and the Pleasant Hill Homeowners Association providing buffer to wetlands containing state endangered plant species.
   c. Nachusa Grasslands, Lee and Ogle Co., 987.76 acres owned by The Nature Conservancy (TNC) including the core area of a much larger restored prairie ecosystem that includes prairie, woodland, savanna and wetlands of the Oregon Section of the Rock River Hill Country Natural Division
   d. Addition to the proposed Slough Creek Fen NP, 35.2 acres owned by McHenry County Conservation District protecting mesic savanna of the Morainal Section of the Northeast Morainal Nature Division.
   e. Pruett Woods, Saline Co., 17.08 acres of privately-owned land protecting high quality wet-mesic floodplain forest in the Bottomlands Section of the Wabash Border Natural Division
3. Parcels given final approval for NP dedication include:
   a. Addition to Sundrop Prairie NP, Cook Co., 0.591 acres owned by TNC protecting high quality mesic prairie of the Chicago Lake Plain Section of the Northeastern Morainal Natural Division.
   b. Addition to Liberty Prairie NP, Lake Co., 11.07 acres owned by Libertyville Township providing buffer to the prairie wetland complex.
   c. Buffer addition to Hopewell Hill Prairies NP, Marshall Co., 2.2 acres owned by a private individual, buffer for hill prairies.

Attached to this document you will find selected excerpts from the INPC staff report that was prepared for our 212th meeting. This includes information on major milestones, lists of monitoring and other biological surveys completed, a list of known threats to sites within the nature preserves system and IDNR consultations and CERPs (Comprehensive Environmental Review Program) where INPC staff members were consulted.

Attachment D

2014 Illinois List Review: A Review of the Process, Outstanding Species Issues, and Board Preliminary Approvals to Date

Illinois Endangered Species Protection Board

Required 5-year review and revision of the Illinois List of Endangered and Threatened Species, ending in 2014

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One Natural Resources Way, Springfield, Illinois 62702 - 1271, (217) 785-8687; FAX (217) 785-2438

ESPB 2014 Illinois List review and revision

E&T amphibian and reptile lists review

ESPB 156th meeting 11/09/12
Midewin National Tallgrass Prairie
Wilmington, IL

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ESPB 2014 Illinois List review and revision

- Illinois Endangered Species Protection Act – 1972

- First Illinois List of Endangered and Threatened Species – 1981

- There have 6 revisions of the Illinois List (1984, 1989, 1994, 1999, 2004, 2009), the 2014 revision is the 7th

- 132 technical experts have assisted the ESPB with revisions to date – 2014 revision will bring that total to 146

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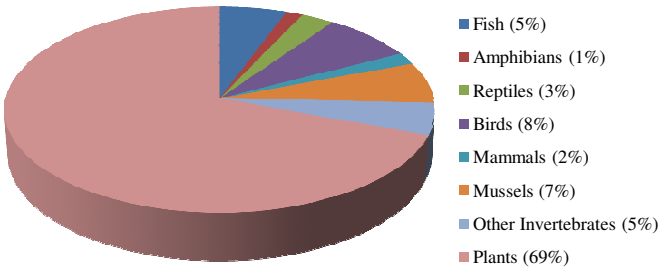
ESPB 2014 Illinois List review and revision

The ESPB has listed a total 644 species since the first Illinois List.



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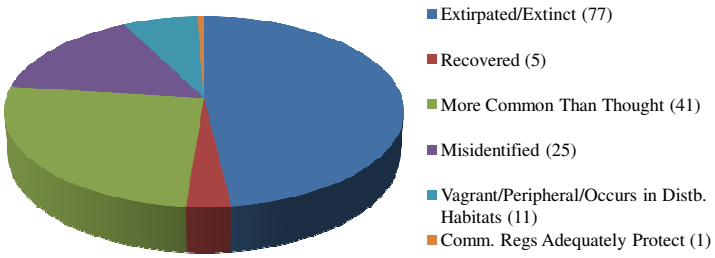
ESPB 2014 Illinois List review and revision

The ESPB has delisted a total of 160 species since the first revision of the Illinois List.



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ESPB 2014 Illinois List review and revision

The current (2011) Illinois List includes 484 species.

	Endangered	Threatened	Totals
Fish	19	12	31
Amphibians	3	6	9
Reptiles	10	8	18
Birds	25	5	30
Mammals	5	4	9
Invertebrates	43	12	55
Total Animals	**105**	**47**	**152**
Plants	251	81	332
TOTALS	**356**	**128**	**484**

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ESPB 2014 Illinois List review and revision

The ESPA (520 ILCS 10/2) definitions “endangered” and “threatened” species:

“Endangered Species" means any species of plant or animal classified as endangered under the Federal Endangered Species Act of 1973, P.L. 93-205, and amendments thereto, plus such other species which the Board may list as in danger of extinction in the wild in Illinois due to one or more causes including but not limited to, the destruction, diminution or disturbance of habitat, overexploitation, predation, pollution, disease, or other natural or manmade factors affecting its prospects of survival.

"Threatened Species" means any species of plant or animal classified as threatened under the Federal Endangered Species Act of 1973, P.L. 93-205, and amendments thereto, plus such other species which the Board may list as likely to become endangered in the wild in Illinois within the foreseeable future.

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ESPB 2014 Illinois List review and revision

The ESPA (520 ILCS 10/7) also stipulates :

The Board may list, as endangered or threatened, species of animals or plants which have reproduced in or otherwise significantly used, as in migration or overwintering, the area which is now the State of Illinois, if there is scientific evidence that the species qualify as endangered or threatened as these terms are defined in this Act.

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ESPB 2014 Illinois List review and revision

ESPB criteria for listing species as endangered or threatened on the Illinois List

- Species included in the Federal list of Endangered or Threatened species.
- Species proposed for Federal Endangered or Threatened status, which occur in Illinois.
- 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.
- Species which exhibit very restricted geographic ranges of which Illinois is a part.
- Species which exhibit restricted habitats or low populations in Illinois.
- Species which are significant disjuncts in Illinois, i.e., the Illinois population is far removed from the rest of the species' range.

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ESPB 2014 Illinois List review and revision

ESPB criteria for delisting species from the Illinois List

- A peripheral species that presently occurs only in disturbed/non-native habitats in Illinois.
- A species now considered to be only a vagrant breeding species in Illinois.
- All native populations are now considered to be extirpated in Illinois.
- Illinois records for this species are now believed to be based on mis-identified specimens.
- Now known to be more common in Illinois than previously thought.
- Commercial fishing regulations determined by the Illinois Department of Natural Resources provide adequate protection for this species in Illinois.
- The species is now considered extinct.
- A species now considered to be recovered from endangerment or the threat of endangerment in Illinois.

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ESPB 2014 Illinois List review and revision

The Illinois List review and revision process:
(in compliance with the ESPA (520 ILCS 10/1) and the Illinois Administrative Procedures Act (5 ILCS 100/1))

1. The Board and its staff review and evaluate available data collected since the original and current List were generated. The Board is required to base listing decision on scientific evidence. When conducting the 5-year review and revision, the Board consults with its technical expert consultants (ESPB TECs).
2. Board staff compile and present recommendations for changes to the List (additions, deletions, or change in status from one category to another) at one or more Board meetings and the Board preliminarily approves a list of proposed changes.
3. The Board holds a public hearing for comments on the proposed changes to the List. The hearing record remains open for two weeks.
4. After considering public comments received, the Board makes final approval of changes at a subsequent meeting and submits the List to the IDNR.

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ESPB 2014 Illinois List review and revision

The Illinois List review and revision process (continued):
(in compliance with the ESPA (520 ILCS 10/1) and the Illinois Administrative Procedures Act (5 ILCS 100/1))

5. IDNR conducts an internal review of the List and submits Administrative Rule changes to the Secretary of State for publication in the Illinois Register and review by the Joint Committee on Administrative Rules (JCAR). This first notice for Administrative Rule changes to the List published in the Illinois Register includes a 45-day comment period.
6. If substantive comments are received during the 45-day comment period, the IDNR, with assistance from the Board, provides a response to comments to the JCAR.
7. JCAR approves the List at a regularly scheduled meeting of its committee.
8. Upon approval by JCAR, the IDNR submits the final Administrative Rule changes to the List to the Secretary of State for publication in the Illinois Register and the List becomes official.

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ESPB 2014 Illinois List review and revision

What are we considering in our review:

- The IDNR Natural Heritage (Biotics 4) Database is used as a primary source of information. In this review, we are using mostly "last observed" data that only illustrates the most recent observation of each element occurrence for a species.
- Information reviewed for each species includes range in Illinois (present and historic), abundance in Illinois (total numbers, if known), number of known populations or locations where it occurs, number of these locations which are known to be protected from disturbance, the types of threats the species faces, and how fragile or sensitive the species is (species biology/ecology).
- For currently listed species, we aren't starting from scratch, but are reviewing whether there has been a change in status and distribution that warrants a change in listing status.

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ESPB 2014 Illinois List review and revision

Our process to date and planned:

January 2012

ESPB staff made request to IDNR ORC to submit to the Database any outstanding Element Occurrence (EO) status and distribution information and to submit to ESPB staff recommendations supported by evidence for status changes for currently listed species and for addition of new species.

ESPB staff made request to over 50 research and resource management institutions to submit to the Database any EO status and distribution information.

February/March 2012

The Board and staff vetted 42 ESPB TECs to advise the Board in the List review and ESPB staff made request to the ESPB TECs to submit to the Database any EO status and distribution information and to submit to ESPB staff recommendations supported by evidence for status changes for currently listed species and addition of new species.

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ESPB 2014 Illinois List review and revision

Our process to date and planned, continued:

April 2012

ESPB staff began reviewing by taxonomic group, currently listed species against Database information, ESPB TEC and IDNR recommendations and evidence, and preparing 1st cut lists of recommended changes to the list of endangered and threatened species.

May 16, 2012 Board meeting

The Board reviewed the bird list and made preliminary approval of proposed changes.

August 10, 2012 Board meeting

The Board reviewed the mammal list and made preliminary approval of proposed changes.

November 9, 2012 Board meeting

The Board will review the amphibian and reptile lists.

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ESPB 2014 Illinois List review and revision

Our process to date and planned, continued:

February 8, 2013 Board meeting

Planned - Fish and mussel lists review.

May 17, 2013 Board meeting

Planned - Other invertebrates and part of the plant lists review.

August 16, 2013 Board meeting

Planned – Remainder of plant list review.

November 15, 2013 Board meeting

Planned - The Board will review outstanding taxonomic group list issues and confirm preliminary approval of proposed changes to the IL List of Endangered and Threatened Species (List).

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ESPB 2014 Illinois List review and revision

Our process to date and planned, continued:

December 2013/January 2014
Planned - the Board holds a public hearing for proposed changes to the List.

January/February 2014
Planned – the Board and staff review and consider comments and evidence received during the two-week public hearing record period.

Beginning February 2014
Planned – at a Board meeting open to the public, the Board reviews its determinations regarding public hearing evidence and either makes final approval to proposed List changes or revises proposed changes and schedules another public hearing for the new changes.
– if another public hearing is held, the Board repeats the cycle for considering evidence and reviewing determinations until it approves as final its proposed changes to the List.
– once proposed changes to the List have been approved as final by the Board, staff will work with IDNR to propose amendments to respective Administrative Rules. The Administrative Rule amendment process may take 6-9 months.

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ESPB 2014 Illinois List review and revision

Outstanding List review items that will be revisited before the Board confirms preliminary approval of respective proposed changes, to date:

Birds:

Peregrine falcon – proposed for delisting - review 2011, 2012, and (if available) 2013 data.

Chuck-will's-widow – proposed for addition as T- confirm EOs are in the Database.

Mammals:

Woodrat – no Board action, IDNR recommends E to T – data from reports was not in/confirmed by Database; proposal for status change needs to be submitted to ESPB.

Golden Mouse – no Board action, IDNR recommends delisting - data from reports was not in/confirmed by Database; proposal for status change needs to be submitted to ESPB.

Rice Rat – no Board action, IDNR recommends delisting with data available by 2014 - data from reports was not in/confirmed by Database; proposal for status change needs to be submitted to ESPB.

Eastern Small-footed Bat – proposed for addition as T – contract another year of surveys; confirm EOs are in the Database.

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ESPB 2014 Illinois List review and revision

- Now we'll look at one currently listed species account as review of the information that has been considered.
- Then review currently listed species proposed for status change and any questions about those not proposed for status change.
- Then review species proposed for addition.

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ESPB 2014 Illinois List review and revision

Reminders:

- Because of the Board's designated process for selecting and utilizing expert consultants and requirements of the Open Meetings Act, any "meeting" of such experts needs to be conducted in a meeting open to the public.
- The current meeting satisfies that requirement, but please note that this is a business meeting of the Board that is open to the public and not a "public hearing".
- Only those individuals identified as presenters on the agenda will be recognized to participate in discussion. In the interest of time and to facilitate development of meeting minutes and the administrative record for the List review process, please keep discussion brief and focused.
- If members of the audience wish to address the Board on this agenda item, they may do so during the public comment period at the end of the meeting, by requesting to present their own agenda item at a subsequent Board meeting, or during the required public hearing that is part of the List review process and will be held at a time after the Board has confirmed preliminary approval for any changes to the List (currently anticipated for early 2014).

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ESPB 2014 Illinois List review and revision

So, before we move along…..

Any questions?

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Attachment E

Re: Agenda Items 156-13: Copy of the 2014 Illinois List Review: Staff recommendation for changes to the list of Illinois endangered and threatened amphibians

ILLINOIS ENDANGERED SPECIES PROTECTION BOARD

One Natural Resources Way, Springfield, Illinois 62702 - 1271, (217) 785-8687; FAX (217) 785-2438

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

ESPB staff 1st cut final recommendations for Amphibians

Prepared by Anne Mankowski

1st cut draft dated 09/14/12, updated as 1st cut final 10/26/2012

This is the 1st cut final recommendations that will be presented to the Board at the 11/09/12 meeting.

Contents:

(This is a compilation of otherwise stand-alone documents; I didn't spend a lot of time crafting, so it isn't pretty)

1. List of any pre-1st cut draft recommendations and evidence from ESPB TECs and IDNR for species listing status change or additions to the Illinois List and Mankowski response/notes (begins page 2).

   List of post-1st cut draft recommendations and evidence from ESPB TECs and IDNR for species listing status change or additions to the Illinois List and Mankowski response/notes (begins page 2)

2. ESPB staff list of recommended changes from endangered to threatened, threatened to endangered, remove from endangered, remove from threatened, add as endangered, add as threatened, and species for which no change is recommended (page 4).

3. List of species under Federal review – implications to the Illinois List (page 4).

4. Table 1. Currently listed species – last observed, total occurrences, total seen since Jan 2002, # of protected occurrences, # of counties w/ occurrences, # of topographic quads w/ occurrences (page 5).

5. Table 2. Currently listed species -element occurrences and counties with occurrences for respective 5-year intervals ending in 2011 (page 5).

6. Currently listed species individual reviews (begins page6) – each review includes:
   a. Date of listing, reason for listing;
   b. ESPB status and distribution publication species acct;
   c. species data from Tables 1 and 2;
   d. 1982-2011 5-year element occurrence trend graph;
   e. 1992-2011 5-year element occurrence dot maps;
   f. status review triggers (if any) and listing status change recommendation (if any); and
   g. NatureServe conservation status, lower 48.

7. Recommendations for species to be added as endangered or threatened (if any) (page 40).

(1) List of pre-1st cut draft recommendations and evidence received from ESPB TECs and IDNR by 08/31/12 deadline for species listing status change or additions to the Illinois List and Mankowski response/notes; and, (2) and (3) List of post-1st cut draft recommendations and evidence received from ESPB TECs and IDNR by 09/28/12 deadline for species listing status change or additions to the Illinois List and Mankowski response/notes (some of the same information below is included in both the amphibian and reptile reports)

1a. ESPB TECs recommendations/evidence received prior to 1st cut draft

From: Mike_Redmer@fws.gov [mailto:Mike_Redmer@fws.gov]
Sent: Thursday, September 06, 2012 9:14 AM
To: Mankowski, Anne
Subject: Fw: Five year review of Illinois TE herp list.

(as an fyi) … the (USFW) Service has been petitioned to federally list a number of herps nationwide, including several that occur in Illinois. All of those are already listed by the state…

At this time, the only change I would recommend to the IESPB is that they recognize a name change for the Eastern massasauga rattlesnake as a species "Sistrurus catenatus" instead of as a subspecies "S. c. catenatus." The evidence justifying this change has been mounting for about ten years (Rich K. has also been involved with this, and can probably add more if we want to discuss), and is summarized by the Crother et al proposal to the ICZN. The US Fish and Wildlife Service recognized this change starting in 2011.

1b. Mankowski 09/14/12 notes on ESPB TECs recommendation/evidence received prior to 1st cut draft

ESPB TEC notice of new USFWS petition noted. ESPB staff will monitor progress of USFWS actions and advise ESPB if/when changes may affect the Illinois List.

ESPB TEC name change recommendation accompanied by publication (citation provided below) noted.

The scientific name S. catenatus is the name that has been used by ESPB since the species was listed in 1994. The ESPB and IDNR have used S. catenatus in all iterations of Title 17 IL Admin. Code. Part 1010 (Illinois List of Endangered and Threatened Fauna), so it is the scientific nomenclature legally attributed to this species on the Illinois List. Therefore, no name change on the Illinois List is necessary for this species.

The Illinois Natural Heritage (Biotics 4) Database uses the subspecies, S. c. catenatus, naming convention. ESPB will make recommendation (accompanied by the publication) for the name change to the Database.

Crother, B.I., J.M. Savage and J.T. Holycross. 2011. Crotalinus catenatus Rafinesque, 1818 (currently Sistrurus catenatus) and Crotalus tergeminus Say in James, 1822 (currently Sistrurus tergeminus; Reptilia, Serpentes): proposed conservation of usage by designation of neotypes for both species. Bulletin of Zoological Nomenclature 68(4) December 2011; 4 pp.

2a. ESPB TECs recommendations/evidence received in response to 1st cut draft

Mike Redmer provided recommended edits to multiple species accounts from Nyboer et all (2006) and Mankowski (2010) ESPB Status and Distribution publications.

Mr. Redmer suggested there were errors in EO location/year information in the 1st cut draft reviews for several species.

Mr. Redmer provided comment that EO information for several species may be missing from the Database.

2b. Mankowski notes on ESPB TECs recommendation/evidence received in response to 1st cut draft

The ESPB 2014 List review exercise is not requesting proposed edits to species accounts from previously published ESPB Status and Distribution publications – Nyboer et al 2006 and Mankowski 2010. Suggested editorial comments noted.

Corrections were identified and made to one EO location/year entry in the 1st cut draft species review for the Four-toed Salamander. The correction did not change ESPB staff listing status recommendation for the species.

Suggested errors in EO location/year in 1st cut draft reviews for other species were reviewed against the database and the information in the review was found to be correct according to the Database.

Comment that EO information for several species may be missing from the Database was not supported by evidence. Mr. Redmer was asked to provide to the Database EO information and evidence for any occurrences that he was aware of. Mr. Redmer was asked if he was proposing alternate listing status recommendations based on his comments. He did not respond. In the absence of evidence to the contrary, Ms. Mankowski maintains her ESPB staff Amphibian listing status recommendations.

3a. ESPB TECs recommendations/evidence received in response to 1st cut draft

Scott Ballard provided recommended edits to multiple species accounts from Nyboer et all (2006) and Mankowski (2010) ESPB Status and Distribution publications.

Mr. Ballard suggested there were errors in EO location/year information in the 1st cut draft reviews for several species.

Mr. Ballard provided comment that EO information may be missing from the Database.

3b. Mankowski notes on ESPB TECs recommendation/evidence received in response to 1st cut draft

The ESPB 2014 List review exercise is not requesting proposed edits to species accounts from previously published ESPB Status and Distribution publications – Nyboer et al 2006 and Mankowski 2010. Suggested editorial comments noted.

Suggested errors in EO location/year in 1st cut draft reviews for identified species were reviewed against the database and the information in the review was found to be correct according to the Database.

Comment that EO information for several species may be missing from the Database was not supported by evidence. Mr. Ballard was asked to provide to the Database EO information and evidence for any occurrences that he was aware of. Mr. Ballard was asked if he was proposing alternate listing status recommendations based on his comments and he replied that he was not. In the absence of evidence to the contrary, Ms. Mankowski maintains her ESPB staff Amphibian listing status recommendations.

ESPB staff listing status recommendations

Endangered to threatened: None

Threatened to endangered: None

Remove from endangered: None

Remove from threatened: None

Add as endangered: None

Add as threatened: None

No listing status change recommended: (data do not warrant change)

Ambystoma platineum	Silvery Salamander
Ambystoma jeffersonianum	Jefferson Salamander
Cryptobranchus alleganiensis	Eastern Hellbender
Desmognathus conanti	Spotted Dusky Salamander
Gastrophryne carolinensis	Eastern Narrowmouth Toad
Hemidactylium scutatum	Four-toed Salamander
Hyla avivoca	Bird-voiced Treefrog
Nectrurus maculosus	Mudpuppy
Pseudacris illinoensis	Illinois Chorus Frog

Species under Federal review – implications to the Illinois List:

Cryptobranchus alleganiensis, Eastern Hellbender. USFWS action - 12-month finding (warranted or not warranted for listing); part of 404 SE aquatic species - 12-month finding work after MDL work plan (probably after FFY2016). Currently Illinois endangered.

Table1. Currently listed species – last observed, total occurrences, total seen since Jan 2002, # of protected occurrences, # of topographic quads with occurrences (Illinois Natural Heritage Biotics 4 Database, August 2012).

SCIENTIFIC_NAME	S_PRIMARY_COMMON_NAME	Current Status	Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
Ambystoma jeffersonianum	Jefferson Salamander	T	2010-03-17	12	12	0	6	2	2
Ambystoma platineum	Silvery Salamander	E	2011-02-28	4	4	4	3	2	2
Cryptobranchus alleganiensis	Eastern Hellbender	E	1990-08-08	3	0	0	3	2	0
Desmognathus conanti	Spotted Dusky Salamander	E	2011-09-15	16	15	1	5	2	2
Gastrophryne carolinensis	Eastern Narrowmouth Toad	T	2011-06-13	17	8	3	13	6	2
Hemidactylium scutatum	Four-toed Salamander	T	2012-05-23	10	7	3	11	9	8
Hyla avivoca	Bird-voiced Treefrog	T	2010-07-28	12	10	4	12	7	6
Nectrurus maculosus	Mudpuppy	T	2012-07-30	26	11	3	4	16	1
Pseudacris illinoensis	Illinois Chorus Frog	T	2011-03-03	29	19	3	32	10	9

Table 2. Currently listed species -element occurrences and counties with occurrences for respective 5-year intervals ending in 2011 (some 2012 also) (Illinois Natural Heritage Biotics 4 Database, August 2012).

SCIENTIFIC_NAME	S_PRIMARY_COMMON_NAME	EO 1982-1986	EO 1987-1991	EO 1992-1996	EO 1997-2001	EO 2002-2006	EO 2007-2011	EO 2012	# Cos with records from 1982-1986	# Cos with records from 1987-1991	# Cos with records from 1992-1996	# Cos with records from 1997-2001	# Cos with records from 2002-2006	# Cos with records from 2007-2011	# Cos with records from 2012
Ambystoma jeffersonianum	Jefferson Salamander	0	2	3	1	1	12		0	2	2	1	1	2	
Ambystoma platineum	Silvery Salamander	0	1	1	1	1	4		0	1	1	1	1	2	
Cryptobranchus alleganiensis	Eastern Hellbender	0	1	0	0	0	0		0	1	0	0	0	0	
Desmognathus conanti	Spotted Dusky Salamander	2	3	0	3	16	5		1	2	0	2	2	2	
Gastrophryne carolinensis	Eastern Narrowmouth Toad	0	6	1	1	3	6		0	3	1	1	1	2	
Hemidactylium scutatum	Four-toed Salamander	0	2	1	4	6	3		0	2	1	4	6	3	
Hyla avivoca	Bird-voiced Treefrog	0	0	11	7	3	9		0	0	6	4	5	5	
Nectrurus maculosus	Mudpuppy	1	0	2	6	1	9	2	1	0	2	5	1	9	3
Pseudacris illinoensis	Illinois Chorus Frog	6	10	17	10	10	14		6	7	9	7	6	6	

Currently listed species individual reviews – each review includes:

a. Date of listing, reason for listing;
b. ESPB status and distribution publication species acct;
c. species data from Tables 1 and 2;
d. 1982-2011 5-year element occurrence trend graph;
e. 1992-2011 5-year element occurrence dot maps;
f. status review triggers (if any) and listing status change recommendation (if any); and
g. NatureServe conservation status, lower 48.

Ambystoma jeffersonianum	Jefferson Salamander	begins	pg. 6
Ambystoma platineum	Silvery Salamander		pg. 10
Cryptobranchus alleganiensis	Eastern Hellbender		pg. 13
Desmognathus conanti	Spotted Dusky Salamander		pg. 16
Gastrophryne carolinensis	Eastern Narrowmouth Toad		pg. 20
Hemidactylium scutatum	Four-toed Salamander		pg. 24
Hyla avivoca	Bird-voiced Treefrog		pg. 28
Nectrurus maculosus	Mudpuppy		pg. 32
Pseudacris illinoensis	Illinois Chorus Frog		pg. 36

Jefferson salamander, Ambystoma jeffersonianum (Illinois threatened)

Listed as IL T, 4/26/1999
Reason for listing: restricted habitats or low pops in IL;

Ambystoma jeffersonianum (Green)

JEFFERSON SALAMANDER **AMBYSTOMATIDAE** **Status:** Threatened in Illinois

Present Distribution: Jefferson salamanders occur from southern New York to western Virginia, Kentucky, southern Indiana (Conant and Collins 1991), and were recently found in eastern Illinois.
Former Illinois Distribution: This species was first found in Illinois in 1990. It is presently restricted to the Wabash Border Division in the east-central part of the state (Phillips *et al.* 1999).
Habitat: The Jefferson salamander occurs in upland deciduous forests, especially beech-maple forests. It usually hides in rodent burrows or beneath leaf litter, logs, and other surface objects. It hibernates underground or in rotting logs and breeds in small ephemeral ponds. The presence of fish in breeding ponds reduces reproductive success (Phillips *et al.* 1999).
Reason for Status: This species is presently known from only a few populations in two Illinois counties, having a very restricted range in the state.
Management Recommendations: Ponds where Jefferson salamanders breed should be protected from draining and should not be stocked with fish which prey on eggs and larvae.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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.

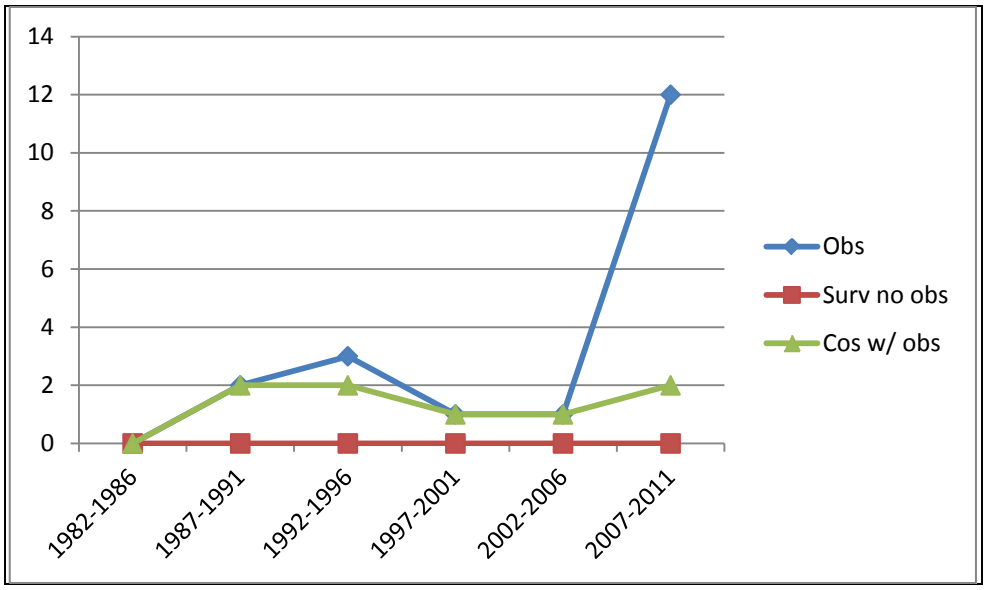
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2010-03-17	12	12	0	6	2	2

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

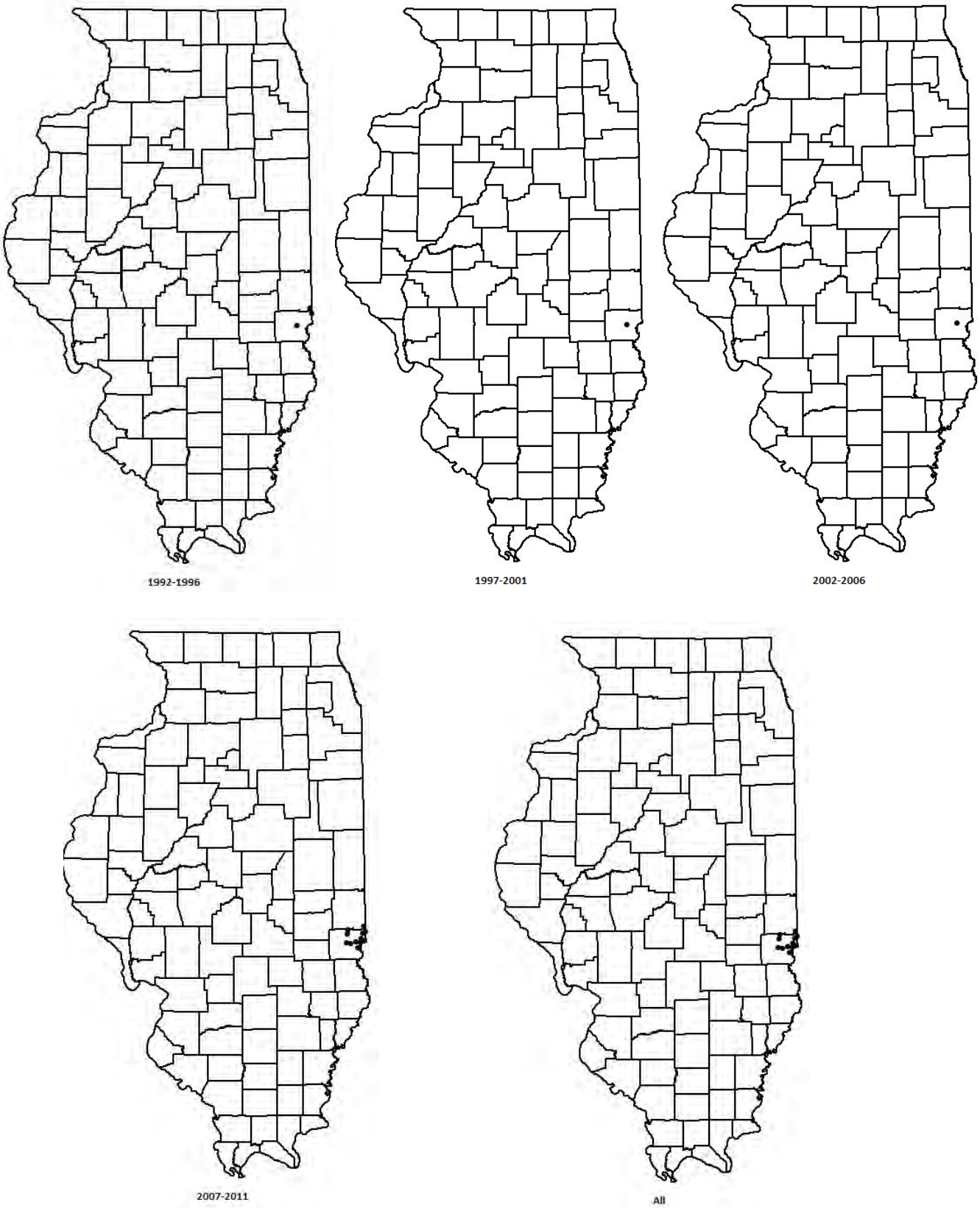
	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	0	2	3	1	1	12
Surv no obs	0	0	0	0	0	0
Cos w/ obs	0	2	2	1	1	2

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

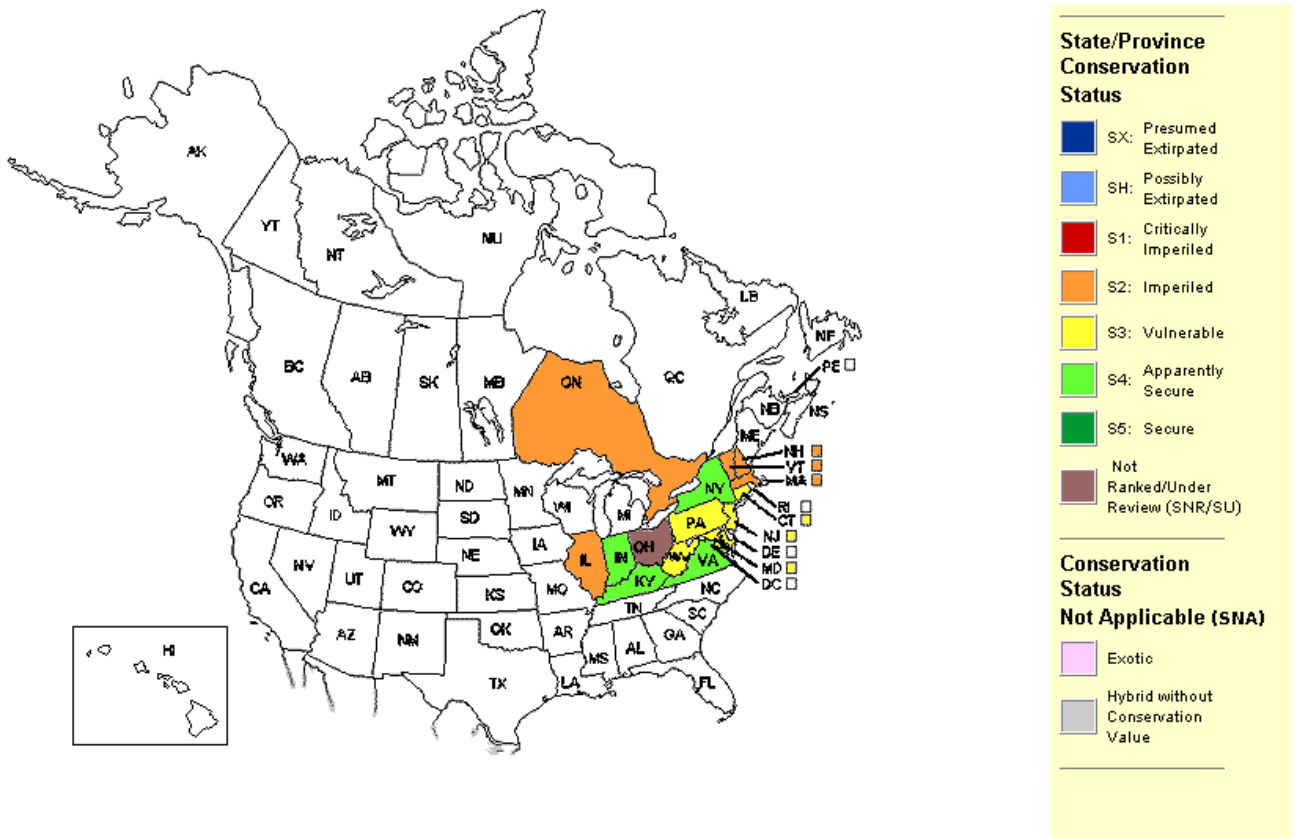


Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)



Ambystoma jeffersonianum



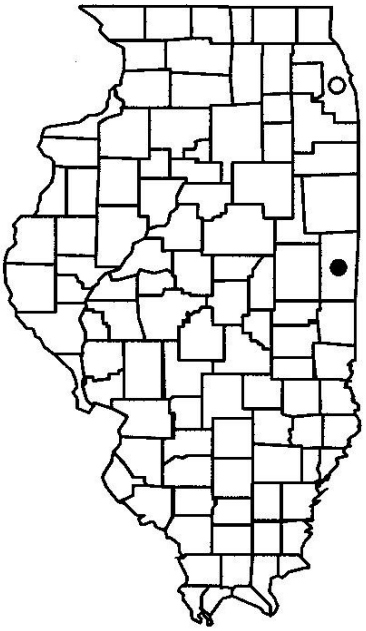
NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed March 2, 2012).

Silvery salamander, Ambystoma platineum (Illinois endangered)

Listed as IL E, 12/31/1977
Reason for listing: restricted habitats or low pops in IL;

Ambystoma platineum (Cope)

SILVERY SALAMANDER **AMBYSTOMATIDAE** **Status:** Endangered in Illinois



Present Distribution: This unisexual polyploid species is known from scattered localities in Massachusetts, New Jersey, Ohio, Michigan, Indiana, Illinois, and Ontario (Uzzell 1967, Morris 1974, Weller *et al.* 1978). In Illinois, there is only one native population at Middle Fork Woods Nature Preserve, Vermilion County. A second, introduced population, occurs in Cook County. Repeated attempts to find this species in other seemingly suitable localities in Vermilion County have been fruitless (Pollowy 1992).
Former Illinois Distribution: This species was first recorded in Illinois in 1973 (Morris 1974), and there are no known native populations anywhere in Illinois except Middle Fork Woods Nature Preserve.
Habitat: The native Illinois colony inhabits a wooded upland and adjacent mesic ravine. The species breeds in a nearby vernal pond that becomes dry by mid-to late summer or earlier. A requirement of this species at Middle Fork Woods is the presence of the small-mouthed salamander (*Ambystoma texanum*). Silvery salamander eggs require spermatophores from the small-mouthed salamander to initiate embryonic development (Morris and Brandon 1984, Phillips *et al.* 1991).
Reason for Status: The population at Middle Fork Woods seems to have only a marginal existence. A population reduction of 64% was documented during the 1980s (Phillips *et al.* 1991). This trend may be reversing as recent surveys show a slight increase in the 1990s (Phillips *et al.* 2001). The small-mouthed salamander population at this location has declined significantly, placing the future of Illinois' only native silvery salamander population in further jeopardy.
Management Recommendations: The silvery salamander population at Middle Fork Woods is protected by a nature preserve. Since the original breeding pond did not always fill or dried before the salamander larvae were able to transform into the terrestrial stage, a second pond was constructed in 1996. Larvae have successfully transformed from the new pond in the breeding seasons since the pond was created. Hydroperiod, numbers of breeding adults, and number of transforming larvae should be monitored at both ponds.

KEY

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Nÿboer, 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.

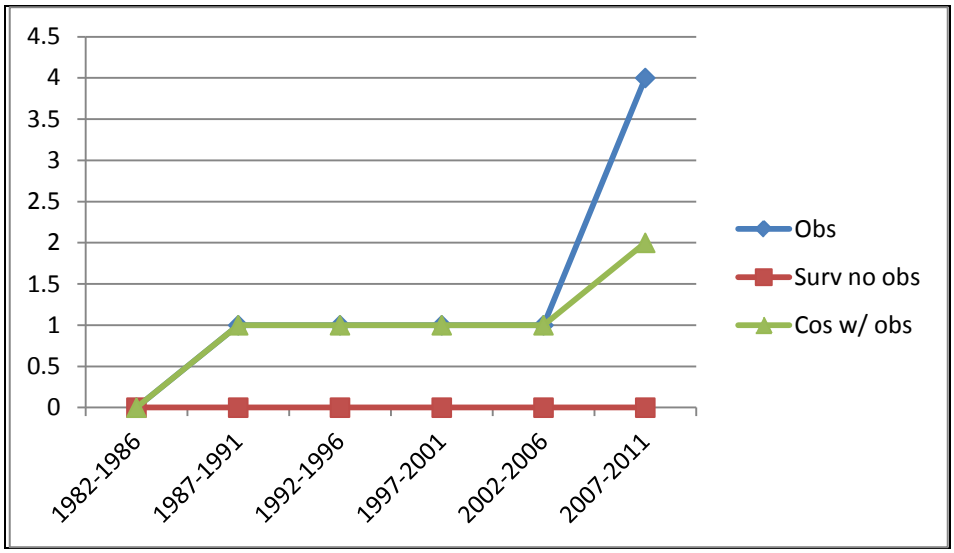
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2011-02-28	4	4	4	3	2	2

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	0	1	1	1	1	4
Surv no obs	0	0	0	0	0	0
Cos w/ obs	0	1	1	1	1	2

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)

1992-1996

1997-2001

2002-2006

2007-2011

All

Eastern hellbender, Cryptobranchus alleganiensis (Illinois endangered)

Listed as IL E, 1/18/1994
Reason for listing: restricted habitats or low pops in IL;

Cryptobranchus alleganiensis (Daudin)

HELLBENDER **CRYPTOBRANCHIDAE** **Status:** Endangered in Illinois

Present Distribution: The hellbender occurs from southeastern New York to southern Illinois, northeastern Mississippi, and northern parts of Alabama and Georgia; it is also disjunct in Missouri and northern Arkansas (Conant and Collins 1991). In Illinois there are no known extant sites.
Former Illinois Distribution: All records for the hellbender in Illinois are from the lower Wabash, Mississippi, and Ohio rivers and their major tributaries (Stein and Smith 1959, Smith 1961).
Habitat: This species is found in rivers and large streams with swift running water and ample cover. Cavities under submerged rocks and logs are important as nest sites and daytime retreats (Conant and Collins 1991).
Reason for Status: The hellbender was considered extirpated in Illinois (Post 1991) until an individual from White County was discovered in 1990.
Management Recommendations: Searches for this species should be conducted in suitable locations in southern Illinois. Efforts to restore the water quality of the Ohio and Wabash rivers would also improve the chances of recovery for this species in Illinois.

KEY

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Nÿboer, 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.

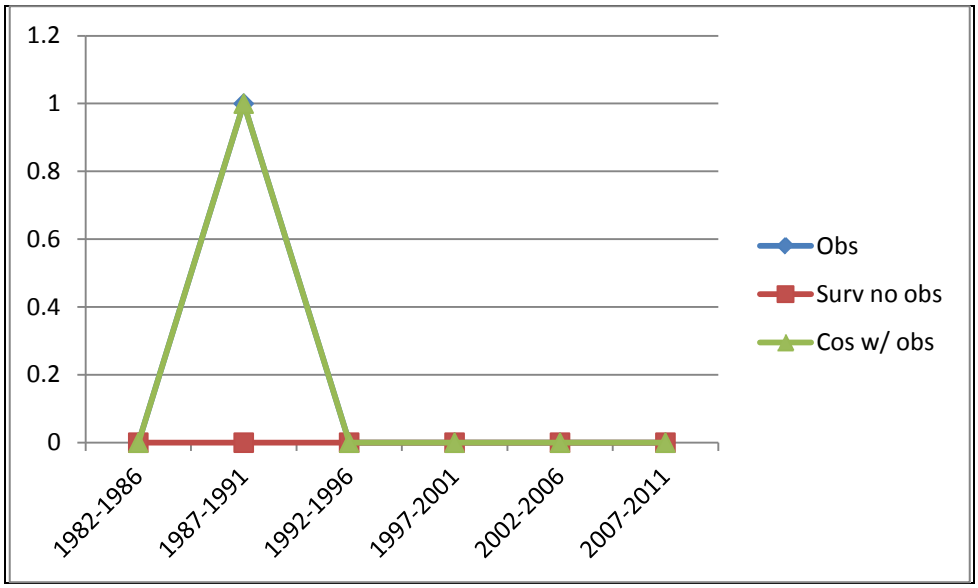
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
1990-08-08	3	0	0	3	2	0

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	0	1	0	0	0	0
Surv no obs	0	0	0	0	0	0
Cos w/ obs	0	1	0	0	0	0

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

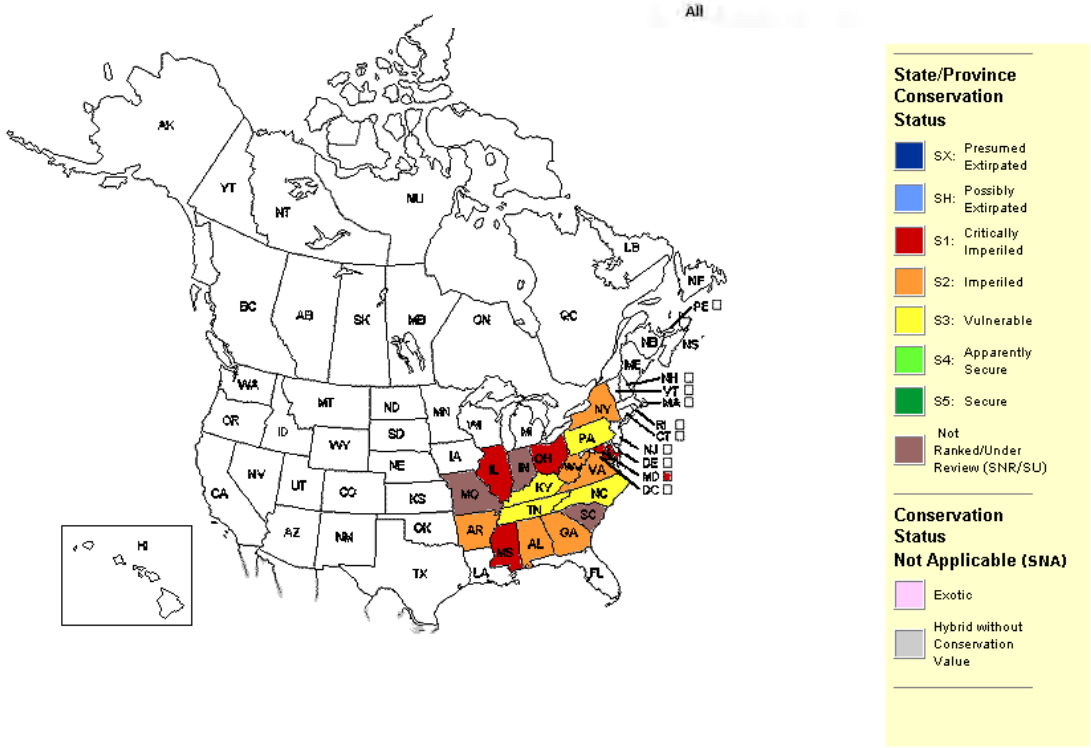


Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)

No observed occurrences 1992-2011.

Cryptobranchus alleganiensis



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).

Spotted dusky salamander, Desmognathus conanti (Illinois endangered)

Listed as IL E, 12/31/1977
Reason for listing: restricted habitats or low pops in IL;

Desmognathus conanti Rossman

SPOTTED DUSKY SALAMANDER **PLETHODONTIDAE** **Status:** Endangered in Illinois

Present Distribution: *Desmognathus conanti* (spotted dusky salamander) occurs in Illinois, western Kentucky, and western Tennessee to the Gulf of Mexico and east to the Florida panhandle. In Illinois, it is known from a few locations in Pulaski County, and one location (possibly introduced) in Johnson County. Most occurrences are within the Cretaceous Hills Section of the Coastal Plain Division. The specimens from Union County that were cited by Smith (1961) bear erroneous locality data (Brandon and Huheey 1979).
Former Illinois Distribution: Within historic time, the range of this salamander in Illinois was probably much the same as at present. Deforestation and other human activities may have destroyed some colonies.
Habitat: Throughout most of the species' range, the dusky salamander is an inhabitant of woodland seeps, springs, and streams (Conant and Collins 1991). In Illinois, cold, rocky springs in heavily forested ravines provide optimum habitat (Brandon and Huheey 1979).
Reason for Status: Dusky salamanders are considered endangered because of their sensitivity to habitat disturbances and the limited area they occupy in Illinois. Although one population is protected by a nature preserve, modification of habitat adjoining the preserve could adversely affect this population. Other colonies may be subject to decimation or eradication by habitat disturbances, principally deforestation and degradation of water quality.
Management Recommendations: Sites harboring the largest number of dusky salamanders should be afforded protection from habitat degradation.
Note: In Herkert (1992) this species was referred to as *Desmognathus fuscus*.

KEY

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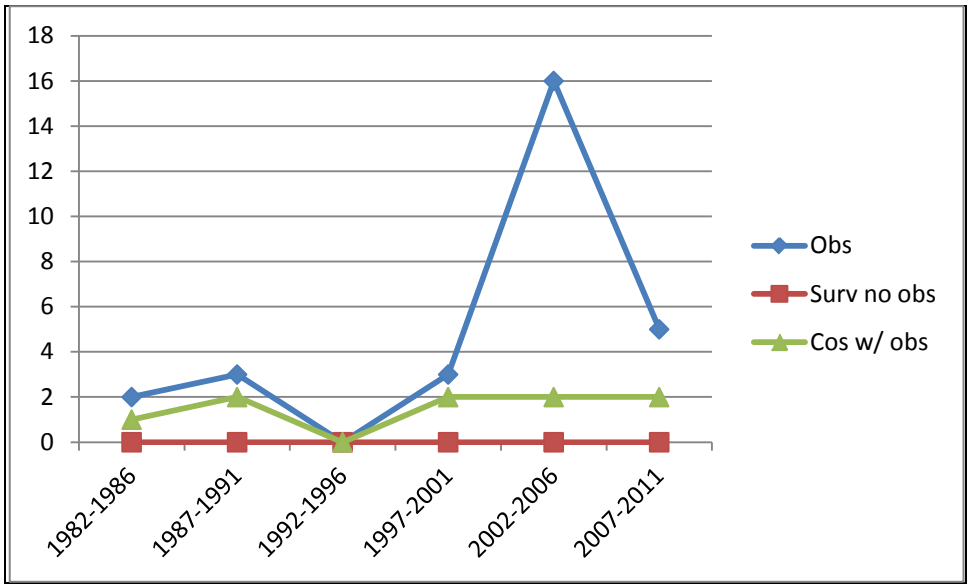
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2011-09-15	16	15	1	5	2	2

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	2	3	0	3	16	5
Surv no obs	0	0	0	0	0	0
Cos w/ obs	1	2	0	2	2	2

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)

1992-1996

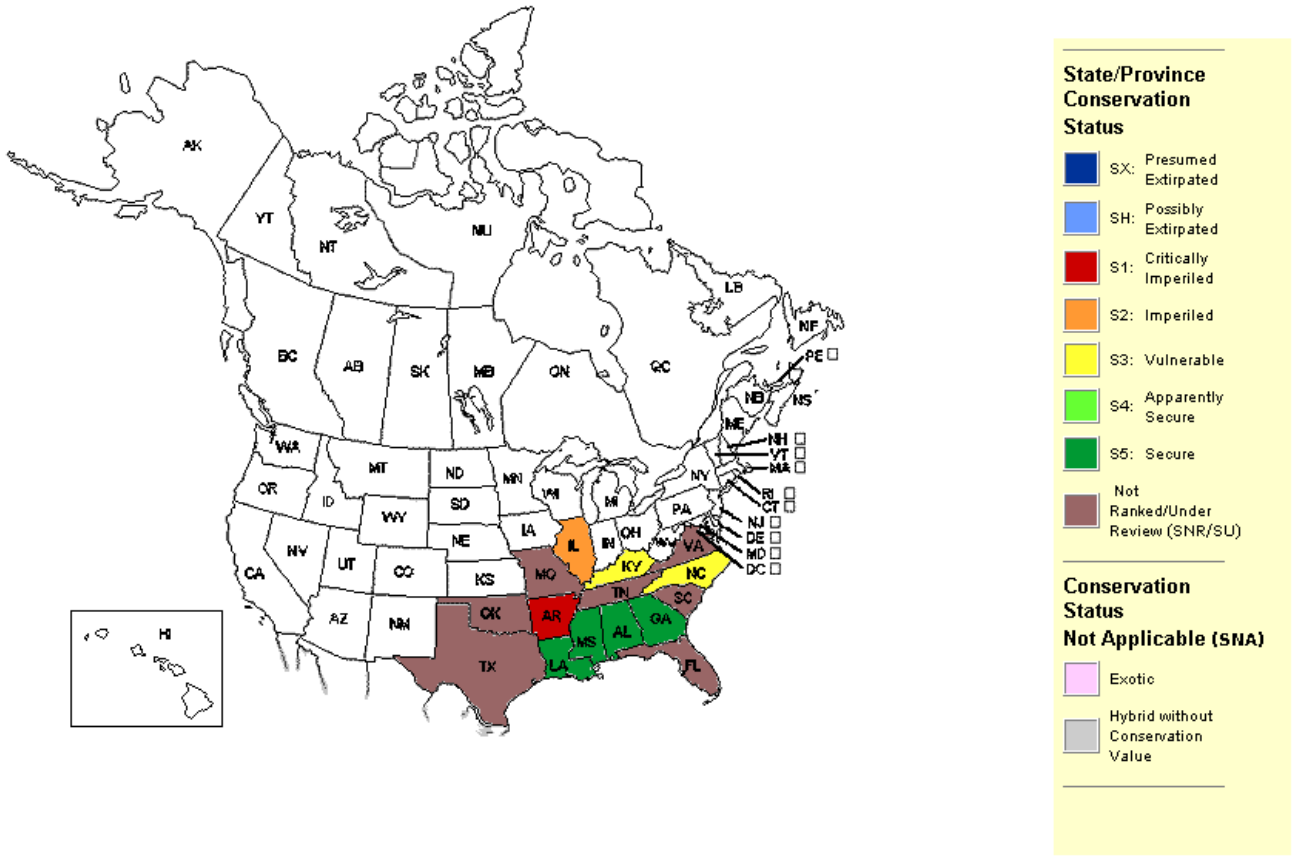
1997-2001

2002-2006

2007-2011

All

Desmognathus conanti



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).

Eastern narrowmouth toad, Gastrophryne carolinensis (Illinois threatened)

Listed as IL T, 9/1/2004
Reason for listing: restricted habitats or low pops in IL;

Gastrophryne carolinensis (Holbrook)

EASTERN NARROWMOUTH TOAD **MICROHYLIDAE** **Status:** Threatened in Illinois

Present Distribution: The eastern narrowmouth toad ranges in the southeastern United States from southern Missouri east through southern Kentucky and Tennessee to Maryland and south through Florida to eastern Texas (Conant and Collins 1991). In Illinois this species is presently known from only two or possibly three viable, disjunct populations in the southern part of the state (Phillips *et al.* 1999).

Former Illinois Distribution: The eastern narrowmouth toad has always had a limited distribution in Illinois, historically being known from six counties, all located along the Mississippi and Ohio rivers in southern Illinois (Phillips *et al.* 1999).

Habitat: In Illinois this species occurs in open, moist areas with abundant ground cover where it feeds regularly on ants. It breeds in temporary and permanent waters such as ponds, lakes, swamp edges, marshy fields, and roadside ditches (Phillips *et al.* 1999).

Reason For Status: The eastern narrowmouth toad has never been common in Illinois. It is presently know from two counties in the state, a reduction from six historical county records from before 1980. Presently this species is only known from Monroe County. Limestone mining and road widening threaten the largest population.

Management Recommendations: The few areas harboring concentrations of this species should be acquired and protected from habitat disturbance. Also efforts should be made to monitor these populations and to determine the reasons for the extirpation of this species from previously known populations.

KEY

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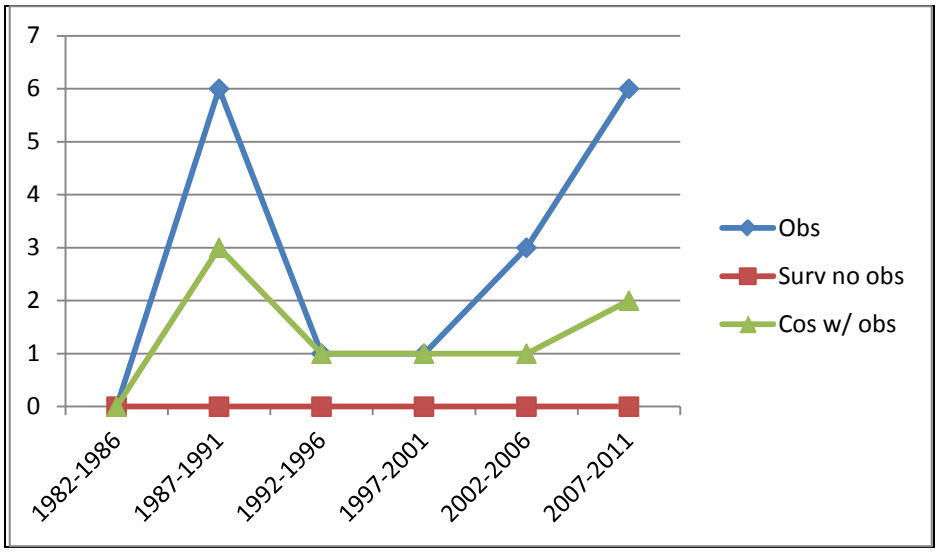
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2011-06-13	17	8	3	13	6	2

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	0	6	1	1	3	6
Surv no obs	0	0	0	0	0	0
Cos w/ obs	0	3	1	1	1	2

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)

1992-1996

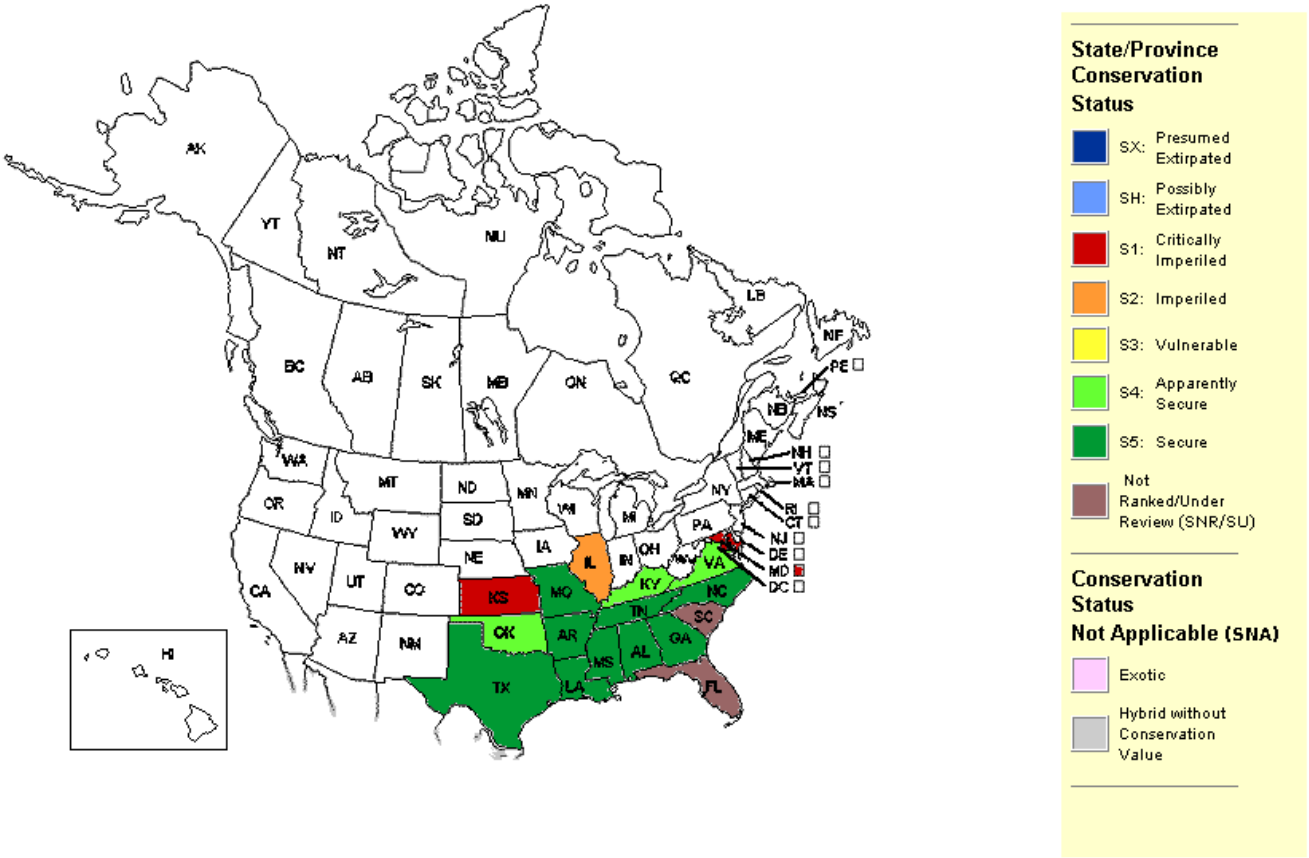
1997-2001

2002-2006

2007-2011

All

Gastrophryne carolinensis



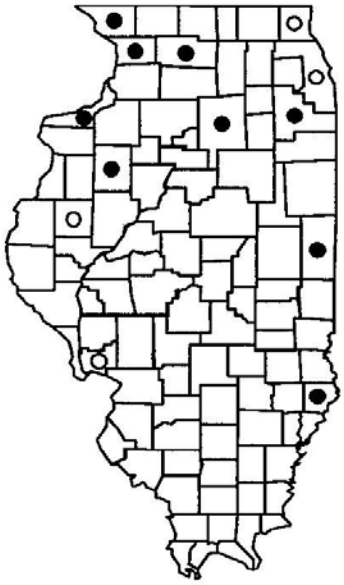
NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed March 2, 2012).

Four-toed salamander, Hemidactylium scutatum (Illinois threatened)

Listed as IL T, 1/18/1994
Reason for listing: restricted habitats or low pops in IL;

Hemidactylium scutatum (Temminck and Schlegel)

FOUR-TOED SALAMANDER **PLETHODONTIDAE** **Status:** Threatened in Illinois



Present Distribution: The four-toed salamander has a spotty distribution from Nova Scotia to Wisconsin and south to Alabama with disjunct populations in many states (Conant and Collins 1991).
Former Illinois Distribution: Smith (1961) considered this species extremely rare in the state, with its Illinois distribution including only Cook and Lake counties. Between 1965 and 1991, seven disjunct populations of this species have been reported in Illinois (Brandon and Ballard 1991).
Habitat: In Illinois, four-toed salamanders are found in boggy woodland ponds, sphagnum areas adjacent to woodlands, and springfed headwaters of small woodland streams. Adults are terrestrial, while larvae are aquatic.
Reason for Status: This species is presently known from about 11 isolated relict populations in Illinois. Many Illinois populations have shown a historical pattern of decline. Populations in Cook and Lake counties were probably extirpated by habitat destruction.
Management Recommendations: Current populations of this species should be surveyed and periodically monitored to identify populations requiring specific management actions.

KEY

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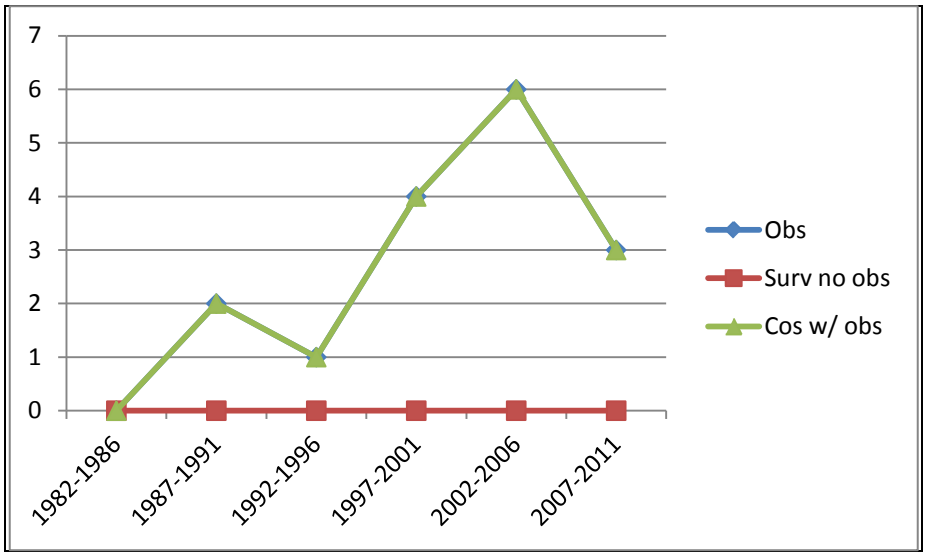
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-05-23	10	7	3	11	9	8

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	0	2	1	4	6	3
Surv no obs	0	0	0	0	0	0
Cos w/ obs	0	2	1	4	6	3

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)

1992-1996

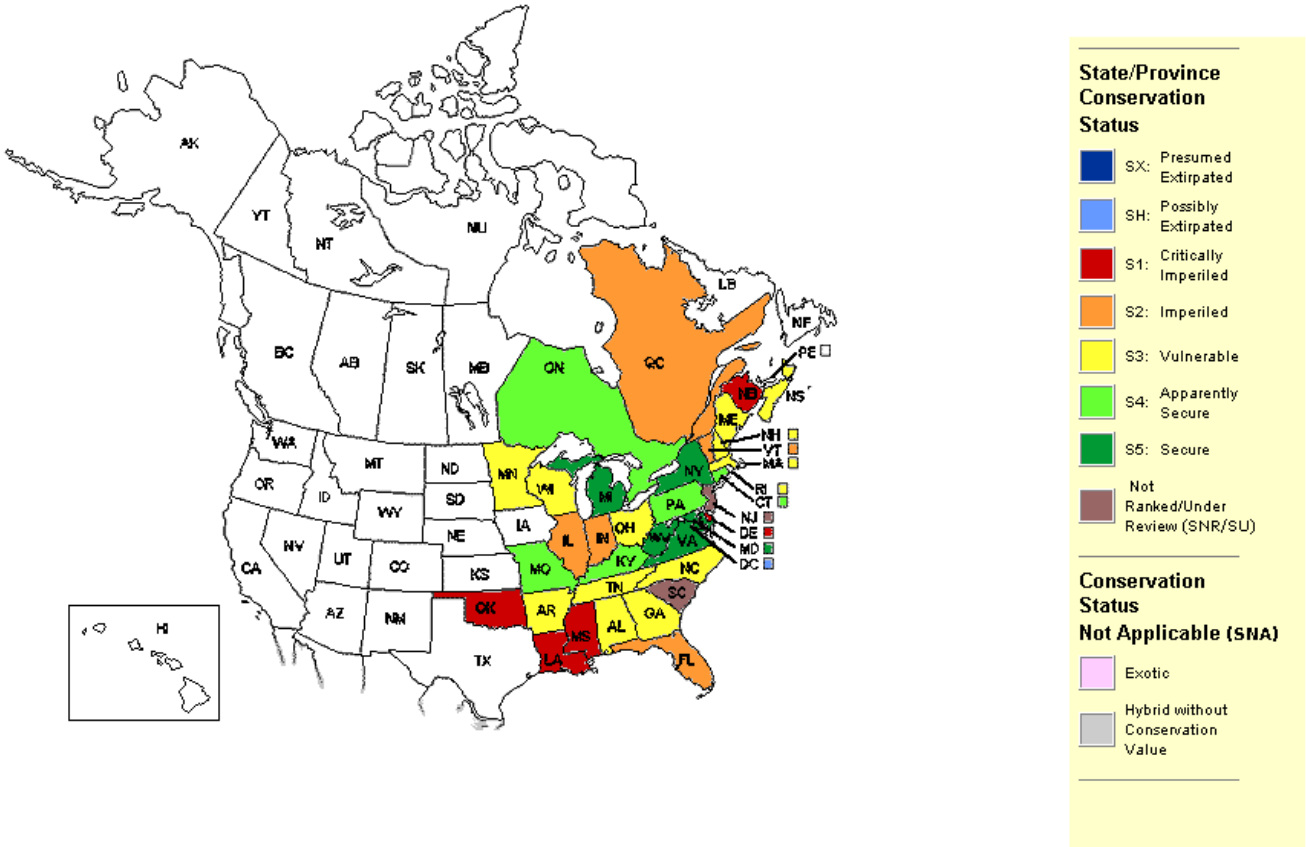
1997-2001

2002-2006

2007-2011

All

Hemidactylium scutatum



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).

Bird-voiced tree frog, Hyla avivoca (Illinois threatened)

Listed as IL T, 4/26/1999
Reason for listing: restricted habitats or low pops in IL;

Hyla avivoca Viosca

BIRD-VOICED TREEFROG **HYLIDAE** **Status:** Threatened in Illinois

Present Distribution: The bird-voiced treefrog occurs from southern Illinois to Louisiana and east to the Florida panhandle, east-central Georgia, and adjacent South Carolina; isolated colonies also occur in Georgia, Alabama, Louisiana, Arkansas, and Oklahoma (Conant and Collins 1991). In Illinois, the bird-voiced treefrog occurs only in the extreme southern part of the state. Redmer *et al.* (1999) provide details of the distribution and natural history of the bird-voiced treefrog in Illinois.
Former Illinois Distribution: The bird-voiced treefrog has always been restricted to southern Illinois. The state population has been reduced due to habitat destruction and degradation.
Habitat: In Illinois, bird-voiced treefrogs are restricted to bald cypress-tupelo swamps and nearby wet hardwood forests. They require closed canopy forests.
Reason for Status: Bird-voiced treefrogs in Illinois are threatened due to reduced population size and their dependence on a rare and vulnerable habitat.
Management Recommendations: Swamps where bird-voiced treefrogs occur should be protected from destruction, degradation, and altered hydrology. Presently, extensive efforts are being undertaken to preserve much of the remaining bald cypress-tupelo swamp habitat in southern Illinois, which should be beneficial for this species.

KEY

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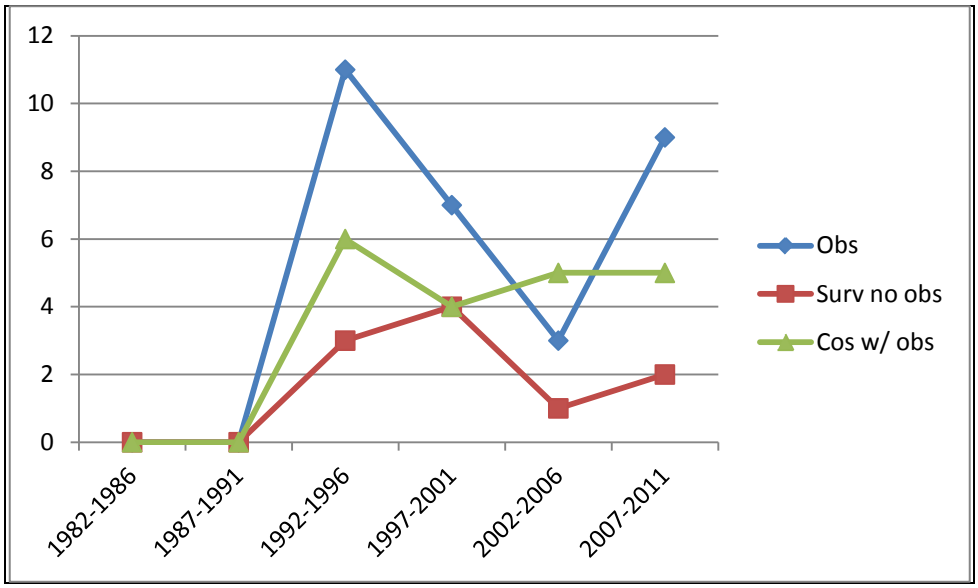
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2010-07-28	12	10	4	12	7	6

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

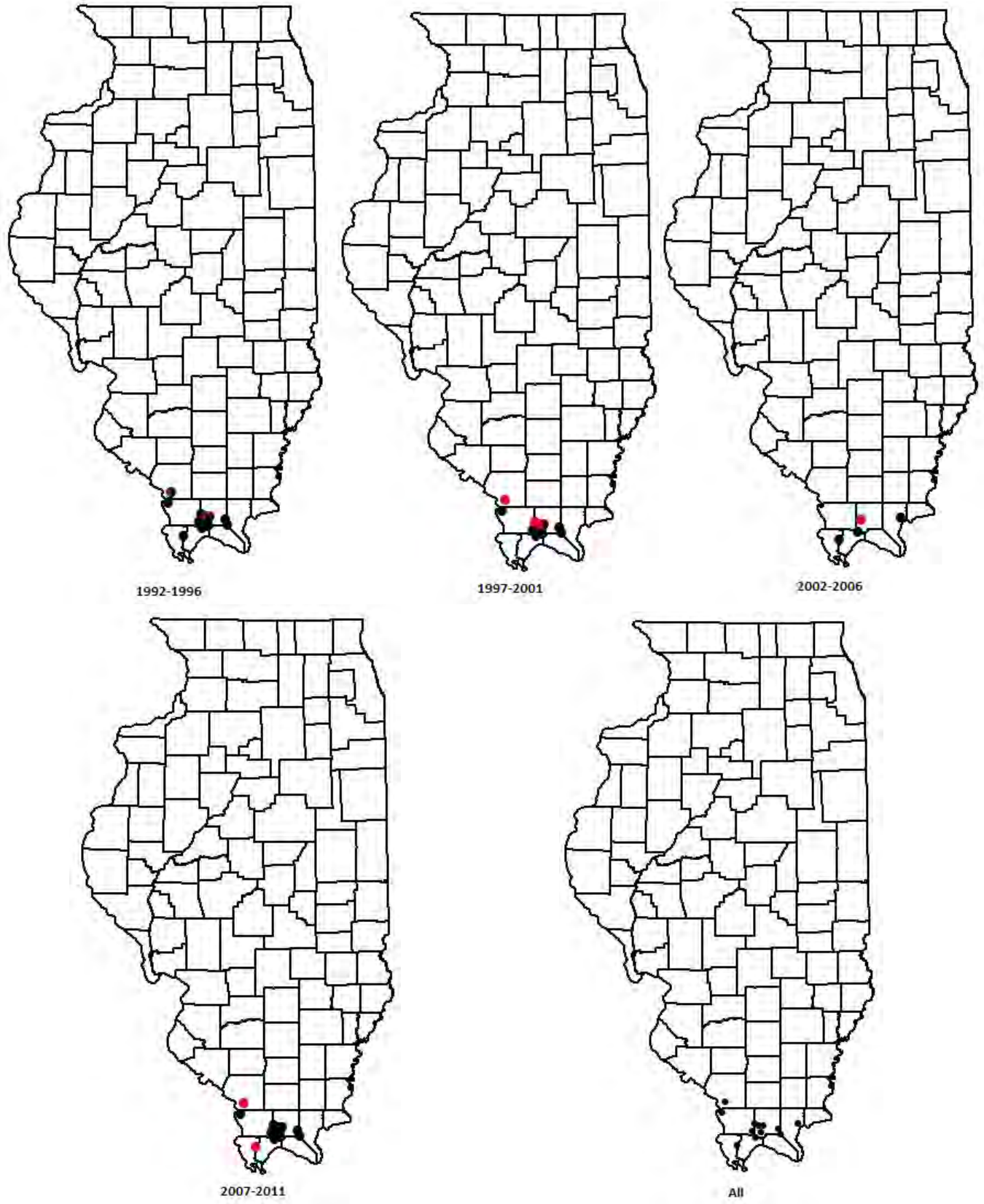
	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	0	0	11	7	3	9
Surv no obs	0	0	3	4	1	2
Cos w/ obs	0	0	6	4	5	5

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

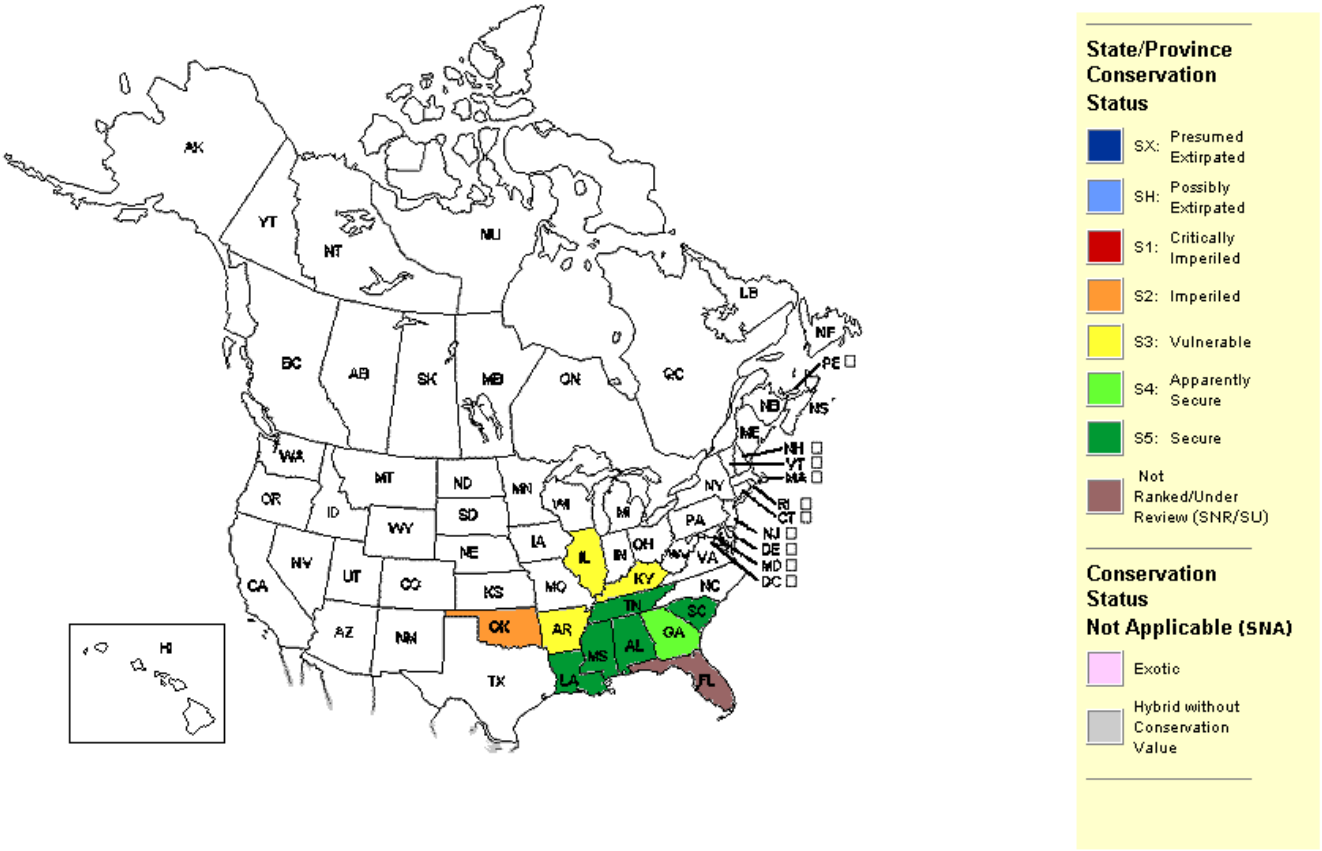


Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)



Hyla avivoca



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).

Mudpuppy, Necutrus maculosus (Illinois threatened)

Listed as IL E – in error - 10/30/2009; Listed as IL T, 8/20/2010
Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures

Necturus maculosus **(Rafinesque, 1818)**
Mudpuppy **PROTEIDAE**

Illinois Status: Threatened
Federal Status: None
Present Distribution: South Quebec, Lake Champlain drainage, and eastern New York, west to southeastern Manitoba and eastern Kansas, south to the Tennessee River system (Conant and Collins 1991). The Illinois Natural Heritage Database documents recent (post-2000) records from Champaign, Greene, Jersey, Kankakee, Pulaski, and Will counties (IDNR 2010).
Former Illinois Distribution: Phillips et al (1999) report this species from 31 counties prior to 1999, with 26 counties known for only pre-1980 records.
Habitat: Habitats include lakes, ponds, rivers, and large creeks, preferably with clear waters, but can include turbid water if gravel headwaters are available for reproduction (Phillips et al 1999).
Reason for Status: Numerous anecdotal observations indicate that this species may still be fairly abundant in near-shore areas of Lake Michigan including areas just off shore of downtown Chicago. However, recent observations in inland streams and rivers are few. In some cases turbidity may lead to difficulty in detection, though trapping (which can be effective) in some known streams has rarely resulted in captures.
Management Recommendations: *Necturus* is the only known glochidial host of the salamander mussel (*Simpsonaias ambigua*). The latter species is listed as endangered in Illinois and is currently undergoing a status review for possible Federal listing by the US Fish & Wildlife Service. Conserving mudpuppy populations may be a key in conserving/recovering the mussel. Additional surveys would increase knowledge of the species status and distribution in the state. Increased attention to watershed planning should consider the habitat of this species.

Key
The narratives in this section are accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur within the last 10 years (post-2000) according to the Illinois Natural Heritage Database are shown as a solid circle; county records which may no longer be extant (pre-2000) are shown as an open circle. An example of a species treatment is as follows:

Citation: Mankowski, A., editor. 2010. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 4 - 2009 and 2010 Changes to the Illinois List of Endangered and Threatened Species. Illinois Endangered Species Protection Board, Springfield, Illinois. iii + 38 pp.

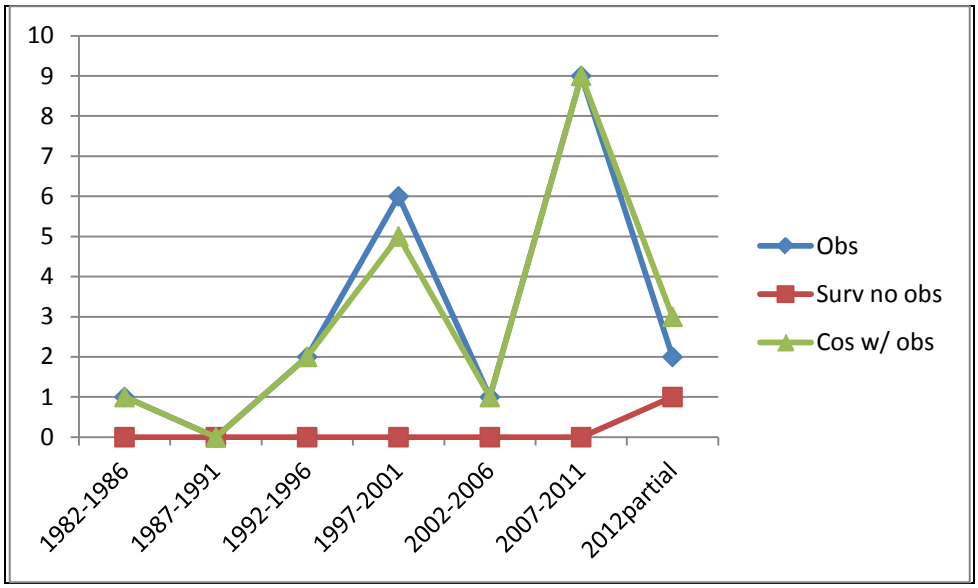
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-07-30	26	11	3	4	16	1

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

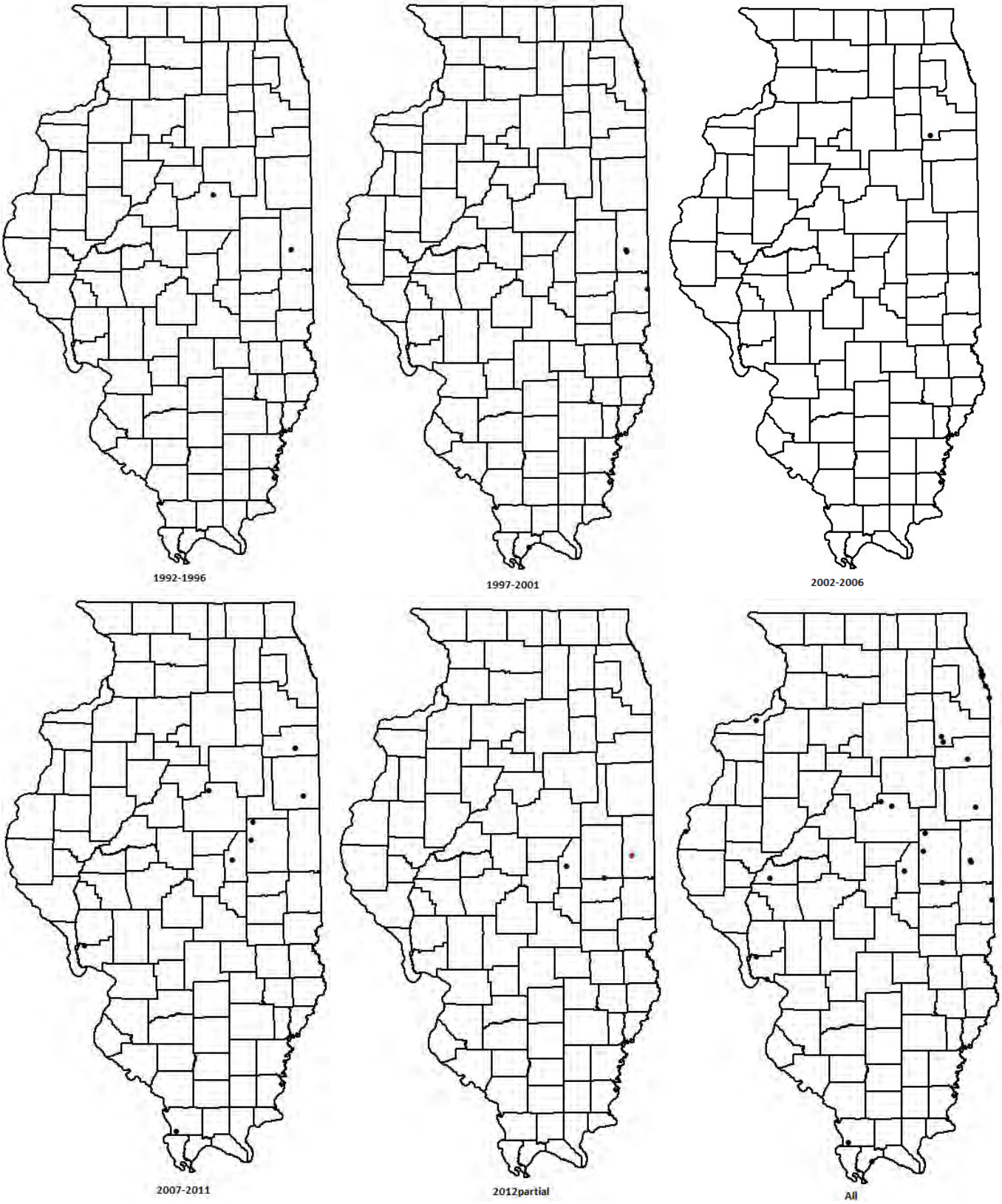
	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012partial
Obs	1	0	2	6	1	9	2
Surv no obs	0	0	0	0	0	0	1
Cos w/ obs	1	0	2	5	1	9	3

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

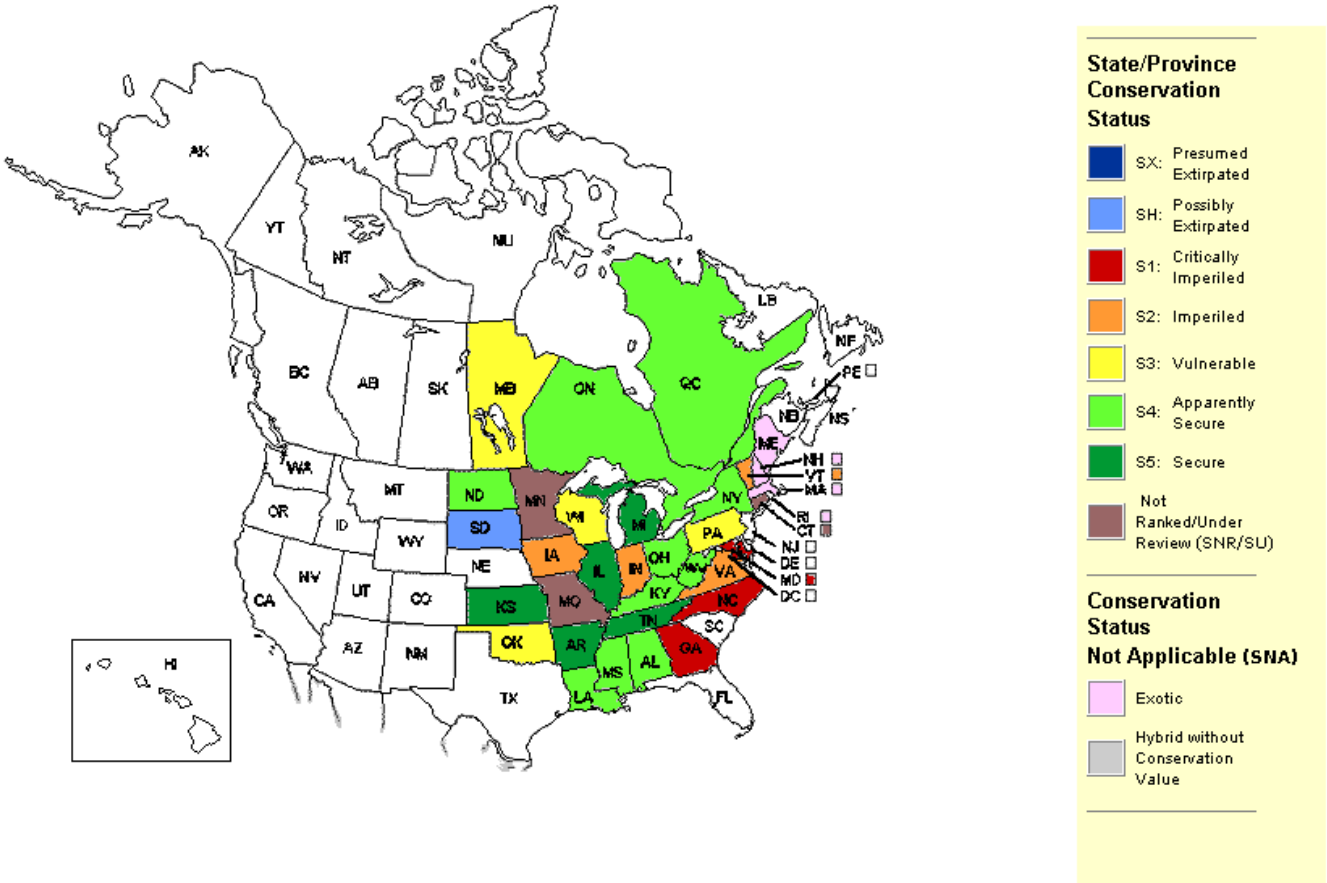


Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)



Necturus maculosus



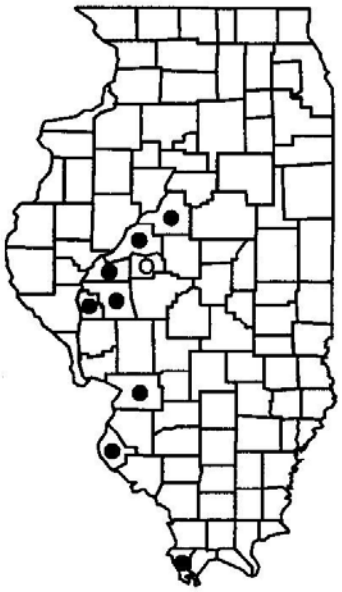
NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed March 2, 2012).

Illinois chorus frog, Pseudacris illinoensis (Illinois threatened)

Listed as IL T, 12/31/1977
Reason for listing: restricted habitats or low pops in IL; significant disjuncts in IL - IL pop far removed from rest of species' range

Pseudacris streckeri Wright & Wright

ILLINOIS CHORUS FROG **HYLIDAE** **Status:** Threatened in Illinois



Present Distribution: The principal range of this frog is from central Texas and adjacent Louisiana through Oklahoma to extreme south-central Kansas. Several disjunct populations comprising the subspecies *Pseudacris streckeri illinoensis* (Illinois chorus frog) occur in Arkansas, Missouri, and Illinois (Smith 1966). The chorus frog occupies three widely separated sandy floodplain areas in Illinoisalong the Illinois River in the central part of the state; near the Mississippi River in Madison and Monroe counties; and near the junction of the Ohio and Mississippi rivers in extreme southern Illinois.
Former Illinois Distribution: This species was first collected in Illinois in 1921 from Morgan County. Within Illinois this frog apparently has not occupied a range much more extensive than at present. Taubert *et al.* (1981) reported only 25 known localities in the state, but Brown and Rose (1988) reported finding an additional 36 localities in the lower Illinois River basin.
Habitat: This frog requires open sandy areas of river lowlands. Ideal habitat of this type is available on the central Illinois sand prairies, adjacent to the Illinois River. These frogs are fossorial and seldom seen except during the February-April breeding season.
Reason for Status: The Illinois chorus frog is considered threatened because its restriction to sand areas subjects it to habitat degradation. Much of the original sand prairie is being modified by cultivation, and most of the known populations in the state are small. Brown and Rose (1988) report that nearly two-thirds of the choruses they surveyed contained fewer than 20 males. Investigations undertaken by Beltz (1991) suggest that many historic locations in Cass, Morgan, Menard, and Scott counties no longer support populations of Illinois chorus frogs.
Management Recommendations: Areas harboring large concentrations of this species should be acquired and protected from habitat disturbances. Some reforested blowouts could be returned to their natural state by removing undergrowth.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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.

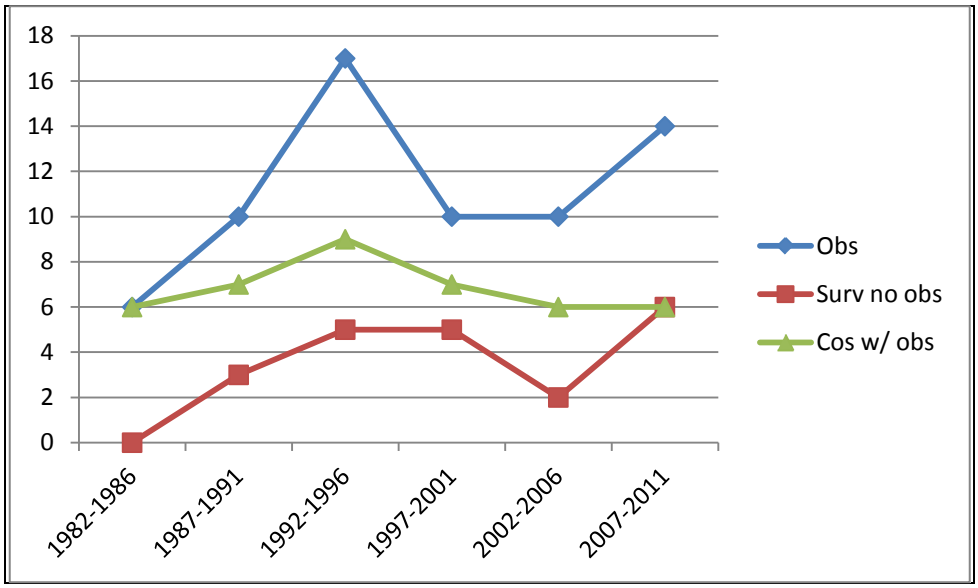
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2011-03-03	29	19	3	32	10	9

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

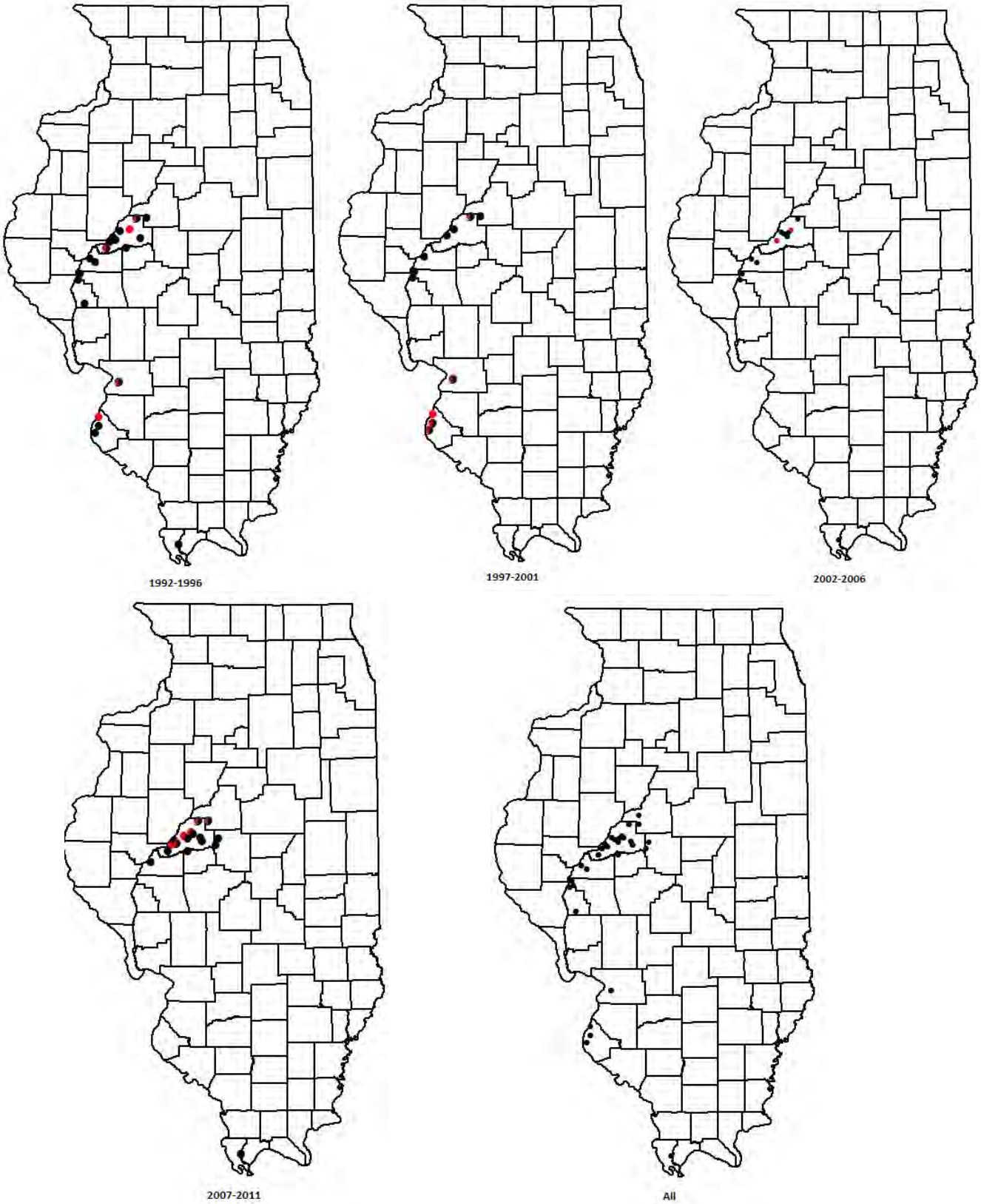
	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	6	10	17	10	10	14
Surv no obs	0	3	5	5	2	6
Cos w/ obs	6	7	9	7	6	6

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)



Recommendations for species to be added as endangered or threatened (if any)

Staff recommendation: no recommendations for species to be added as endangered or threatened.

Attachment F

Re: Agenda Items 156-13: Copy of the 2014 Illinois List Review: Staff recommendation for changes to the list of Illinois endangered and threatened reptiles

ILLINOIS ENDANGERED SPECIES PROTECTION BOARD

One Natural Resources Way, Springfield, Illinois 62702 - 1271, (217) 785-8687; FAX (217) 785-2438

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

ESPB staff 1st cut final recommendations for Reptiles

Prepared by Anne Mankowski

1st cut draft dated 09/14/12, updated as 1st cut final 10/26/2012

This is the 1st cut final recommendations that will be presented to the Board at the 11/09/12 meeting.

Contents:

(This is a compilation of otherwise stand-alone documents; I didn't spend a lot of time crafting, so it isn't pretty)

1. List of any pre-1st cut draft recommendations and evidence from ESPB TECs and IDNR for species listing status change or additions to the Illinois List and Mankowski response/notes (begins page 2).

   List of post-1st cut draft recommendations and evidence from ESPB TECs and IDNR for species listing status change or additions to the Illinois List and Mankowski response/notes (begins page 2)

2. ESPB staff list of recommended changes from endangered to threatened, threatened to endangered, remove from endangered, remove from threatened, add as endangered, add as threatened, and species for which no change is recommended (page 4).

3. List of species under Federal review – implications to the Illinois List (page 4).

4. Table 1. Currently listed species – last observed, total occurrences, total seen since Jan 2002, # of protected occurrences, # of counties w/ occurrences, # of topographic quads w/ occurrences (page 5).

5. Table 2. Currently listed species -element occurrences and counties with occurrences for respective 5-year intervals ending in 2011 (page 5).

6. Currently listed species individual reviews (begins page 7) – each review includes:
   a. Date of listing, reason for listing;
   b. ESPB status and distribution publication species acct;
   c. species data from Tables 1 and 2;
   d. 1982-2011 5-year element occurrence trend graph;
   e. 1992-2011 5-year element occurrence dot maps;
   f. status review triggers (if any) and listing status change recommendation (if any); and
   g. NatureServe conservation status, lower 48.

7. Recommendations for species to be added as endangered or threatened (if any) (page 75).

(1) List of pre-1st cut draft recommendations and evidence received from ESPB TECs and IDNR by 08/31/12 deadline for species listing status change or additions to the Illinois List and Mankowski response/notes; and, (2) and (3) List of post-1st cut draft recommendations and evidence received from ESPB TECs and IDNR by 09/28/12 deadline for species listing status change or additions to the Illinois List and Mankowski response/notes (some of the same information below is included in both the amphibian and reptile reports)

1a. ESPB TECs recommendations/evidence received prior to 1st cut draft

From: Mike_Redmer@fws.gov [mailto:Mike_Redmer@fws.gov]
Sent: Thursday, September 06, 2012 9:14 AM
To: Mankowski, Anne
Subject: Fw: Five year review of Illinois TE herp list.

(as an fyi) … the (USFW) Service has been petitioned to federally list a number of herps nationwide, including several that occur in Illinois. All of those are already listed by the state…

At this time, the only change I would recommend to the IESPB is that they recognize a name change for the Eastern massasauga rattlesnake as a species "Sistrurus catenatus" instead of as a subspecies "S. c. catenatus." The evidence justifying this change has been mounting for about ten years (Rich K. has also been involved with this, and can probably add more if we want to discuss), and is summarized by the Crother et al proposal to the ICZN. The US Fish and Wildlife Service recognized this change starting in 2011.

1b. Mankowski 09/14/12 notes on ESPB TECs recommendation/evidence received prior to 1st cut draft

ESPB TEC notice of new USFWS petition noted. ESPB staff will monitor progress of USFWS actions and advise ESPB if/when changes may affect the Illinois List.

ESPB TEC name change recommendation accompanied by publication (citation provided below) noted.

The scientific name S. catenatus is the name that has been used by ESPB since the species was listed in 1994. The ESPB and IDNR have used S. catenatus in all iterations of Title 17 IL Admin. Code. Part 1010 (Illinois List of Endangered and Threatened Fauna), so it is the scientific nomenclature legally attributed to this species on the Illinois List. Therefore, no name change on the Illinois List is necessary for this species.

The Illinois Natural Heritage (Biotics 4) Database uses the subspecies, S. c. catenatus, naming convention. ESPB will make recommendation (accompanied by the publication) for the name change to the Database.

Crother, B.I., J.M. Savage and J.T. Holycross. 2011. Crotalinus catenatus Rafinesque, 1818 (currently Sistrurus catenatus) and Crotalus tergeminus Say in James, 1822 (currently Sistrurus tergeminus; Reptilia, Serpentes): proposed conservation of usage by designation of neotypes for both species. Bulletin of Zoological Nomenclature 68(4) December 2011; 4 pp.

2a. ESPB TECs recommendations/evidence received in response to 1st cut draft

Mike Redmer provided recommended edits to multiple species accounts from Nyboer et all (2006) and Mankowski (2010) ESPB Status and Distribution publications.

Mr. Redmer suggested there were errors in EO location/year information in the 1st cut draft reviews for several species.

Mr. Redmer provided comment that EO information for several species may be missing from the Database.

2b. Mankowski notes on ESPB TECs recommendation/evidence received in response to 1st cut draft

The ESPB 2014 List review exercise is not requesting proposed edits to species accounts from previously published ESPB Status and Distribution publications – Nyboer et al 2006 and Mankowski 2010. Suggested editorial comments noted.

Corrections were identified and made to one EO location/year entry in the 1st cut draft species review for the Eastern Massasauga. The correction did not change ESPB staff list review recommendation for the species.

Suggested errors in EO location/year in 1st cut draft reviews for other species were reviewed against the database and the information in the review was found to be correct according to the Database.

Comment that EO information for several species may be missing from the Database was not supported by evidence. Mr. Redmer was asked to provide to the Database EO information and evidence for any occurrences that he was aware of. Mr. Redmer was asked if he was proposing alternate listing status recommendations based on his comments. He did not respond. In the absence of evidence to the contrary, Ms. Mankowski maintains her ESPB staff Amphibian list review recommendations.

3a. ESPB TECs recommendations/evidence received in response to 1st cut draft

Scott Ballard provided recommended edits to multiple species accounts from Nyboer et all (2006) and Mankowski (2010) ESPB Status and Distribution publications.

Mr. Ballard suggested there were errors in EO location/year information in the 1st cut draft reviews for several species.

Mr. Ballard provided comment that EO information may be missing from the Database.

Mr. Ballard commented that he supported Mr. Redmer's (09/06/12) suggested nomenclature change for Eastern Massausauga (see 1a, above).

3b. Mankowski notes on ESPB TECs recommendation/evidence received in response to 1st cut draft

The ESPB 2014 List review exercise is not requesting proposed edits to species accounts from previously published ESPB Status and Distribution publications – Nyboer et al 2006 and Mankowski 2010. Suggested editorial comments noted.

Suggested errors in EO location/year in 1st cut draft reviews for identified species were reviewed against the database and the information in the review was found to be correct according to the Database.

Comment that EO information for several species may be missing from the Database was not supported by evidence. Mr. Ballard was asked to provide to the Database EO information and evidence for any occurrences that he was aware of. Mr. Ballard was asked if he was proposing alternate listing status recommendations based on his comments and he replied that he was not. In the absence of evidence to the contrary, Ms. Mankowski maintains her ESPB staff Amphibian list review recommendations.

Ms. Mankowski alerted Mr. Ballard to her 09/14/12 explanation regarding the suggested nomenclature change for Eastern Massasauga (see 2a, above) – the ESPB already uses the "updated" nomenclature and will recommend the Database adopts it also.

ESPB staff listing status recommendations

Endangered to threatened: None

Threatened to endangered: None

Remove from endangered: None

Remove from threatened: None

Add as endangered: None

Add as threatened: None

No listing status change recommended: (data do not warrant change)

Apalone mutica	Smooth Softshell
Clemmys guttata	Spotted Turtle
Clonophis kirtlandi	Kirtland's Snake
Crotalus horridus	Timber Rattlesnake
Emydoidea blandingii	Blanding's Turtle
Heterodon nasicus	Plains Hog-Nosed Snake
Kinosternon flavescens	Yellow Mud Turtle
Macrochelys temminckii	Alligator Snapping Turtle
Masticophis flagellum	Coachwhip
Nerodia cyclopion	Mississippi Green Watersnake
Nerodia fasciata	Broad-banded Watersnake
Pantherophis emoryi	Great Plains Rat Snake
Pseudemys concinna	River Cooter
Sistrurus catenatus	Eastern Massasauga
Tantilla gracilis	Flathead Snake
Terrapene ornata	Ornate Box Turtle
Thamnophis sauritus	Eastern Ribbonsnake
Tropidoclonion lineatum	Lined Snake

Species under Federal review – implications to the Illinois List:

Clonophis kirtlandi, Kirtland's Snake. USFWS action - 12-month finding (warranted or not warranted for listing); part of 404 SE aquatic species - 12-month finding work after Multi-District Litigation (MDL) work plan (probably after FFY2016). Currently Illinois threatened.

Sistrurus catenatus, Eastern Massasauga. USFWS action - Proposed listing /CH rule or not warranted determination; by end of FFY15 (Sep 2015). Currently Illinois endangered.

Table1. Currently listed species – last observed, total occurrences, total seen since Jan 2002, # of protected occurrences, # of topographic quads with occurrences (Illinois Natural Heritage Biotics 4 Database, August 2012).

SCIENTIFIC_NAME	S_PRIMARY_COMMON_NAME	Current Status	Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
Apalone mutica	Smooth Softshell	E	2012-07-20	20	18	1	26	17	14
Clemmys guttata	Spotted Turtle	E	2010-09-17	2	2	2	2	1	1
Clonophis kirtlandi	Kirtland's Snake	T	2012-05-11	37	12	6	32	17	10
Crotalus horridus	Timber Rattlesnake	T	2012-07-30	54	21	12	56	25	14
Emydoidea blandingii	Blanding's Turtle	E	2012-08-07	144	82	44	107	28	22
Heterodon nasicus	Plains Hog-Nosed Snake	T	2011-09-17	25	11	6	27	14	12
Kinosternon flavescens	Yellow Mud Turtle	E	2009-07-14	16	7	1	15	8	4
Macrochelys temminckii	Alligator Snapping Turtle	E	1984-11-15	1	0	0	1	1	0
Masticophis flagellum	Coachwhip	E	2006-05-26	2	1	3	4	2	1
Nerodia cyclopion	Mississippi Green Watersnake	T	2010-10-14	1	1	0	1	1	1
Nerodia fasciata	Broad-banded Watersnake	E	2004-03-28	1	1	0	1	1	1
Pantherophis emoryi	Great Plains Rat Snake	E	2011-05-13	3	2	2	6	3	3
Pseudemys concinna	River Cooter	E	2006-08-16	6	1	0	11	6	3
Sistrurus catenatus	Eastern Massasauga	E	2011-10-05	13	4	4	17	11	7
Tantilla gracilis	Flathead Snake	T	2011-05-13	5	3	4	5	3	1
Terrapene ornata	Ornate Box Turtle	T	2012-06-18	48	38	13	50	31	28
Thamnophis sauritus	Eastern Ribbonsnake	T	2012-05-16	10	7	1	11	8	7
Tropidoclonion lineatum	Lined Snake	T	2009-06-04	9	1	0	6	6	4

Table 2. Currently listed species -element occurrences and counties with occurrences for respective 5-year intervals ending in 2011 (some 2012 also) (Illinois Natural Heritage Biotics 4 Database, August 2012).

SCIENTIFIC_NAME	S_PRIMARY_COMMON_NAME	EO 1982-1986	EO 1987-1991	EO 1992-1996	EO 1997-2001	EO 2002-2006	EO 2007-2011	EO 2012	# Cos with records from 1982-1986	# Cos with records from 1987-1991	# Cos with records from 1992-1996	# Cos with records from 1997-2001	# Cos with records from 2002-2006	# Cos with records from 2007-2011	# Cos with records from 2012
Apalone mutica	Smooth Softshell	1	0	2	2	4	9	4	2	0	2	2	4	10	5
Clemmys guttata	Spotted Turtle	0	2	2	2	2	2		0	1	1	1	1	1	
Clonophis kirtlandi	Kirtland's Snake	10	11	8	5	6	10	1	8	7	7	5	5	7	1
Crotalus horridus	Timber Rattlesnake	4	21	36	19	13	19	2	4	17	20	14	9	9	2
Emydoidea blandingii	Blanding's Turtle	12	26	26	44	52	53	9	10	13	12	17	13	18	8
Heterodon nasicus	Plains Hog-Nosed Snake	1	8	9	8	5	7		1	6	8	7	4	7	
Kinosternon flavescens	Yellow Mud Turtle	9	2	4	4	1	6		6	3	4	4	1	3	
Macrochelys temminckii	Alligator Snapping Turtle	1	0	0	0	0	0		1	0	0	0	0	0	
Masticophis flagellum	Coachwhip	0	0	0	0	1	0		0	0	0	0	1	0	
Nerodia cyclopion	Mississippi Green Watersnake	0	1	1	0	1	1		0	1	1	0	1	1	
Nerodia fasciata	Broad-banded Watersnake	0	0	0	0	1	0		0	0	0	0	1	0	
Pantherophis emoryi	Great Plains Rat Snake	2	1	1	1	0	2		2	2	1	1	0	2	
Pseudemys concinna	River Cooter	3	2	2	3	2	0		5	3	3	4	2	0	
Sistrurus catenatus	Eastern Massasauga	3	5	4	8	4	4		3	7	6	7	6	5	
Tantilla gracilis	Flathead Snake	1	2	0	0	2	2		1	1	0	0	1	1	
Terrapene ornata	Ornate Box Turtle	0	2	6	8	18	30	9	0	2	6	7	13	25	8
Thamnophis sauritus	Eastern Ribbonsnake	1	5	3	0	4	3	2	2	4	5	0	3	6	3
Tropidoclonion lineatum	Lined Snake	1	0	1	2	1	1		2	0	2	2	2	2	

Currently listed species individual reviews – each review includes:

a. Date of listing, reason for listing;
b. ESPB status and distribution publication species acct;
c. species data from Tables 1 and 2;
d. 1982-2011 5-year element occurrence trend graph;
e. 1992-2011 5-year element occurrence dot maps;
f. status review triggers (if any) and listing status change recommendation (if any); and
g. NatureServe conservation status, lower 48.

Apalone mutica	Smooth Softshell	begins	pg. 7
Clemmys guttata	Spotted Turtle		pg. 11
Clonophis kirtlandi	Kirtland's Snake		pg. 14
Crotalus horridus	Timber Rattlesnake		pg. 18
Emydoidea blandingii	Blanding's Turtle		pg. 22
Heterodon nasicus	Plains Hog-Nosed Snake		pg. 26
Kinosternon flavescens	Yellow Mud Turtle		pg. 30
Macrochelys temminckii	Alligator Snapping Turtle		pg. 34
Masticophis flagellum	Coachwhip		pg. 37
Nerodia cyclopion	Mississippi Green Watersnake		pg. 41
Nerodia fasciata	Broad-banded Watersnake		pg. 44
Pantherophis emoryi	Great Plains Rat Snake		pg. 47
Pseudemys concinna	River Cooter		pg. 51
Sistrurus catenatus	Eastern Massasauga		pg. 55
Tantilla gracilis	Flathead Snake		pg. 59
Terrapene ornata	Ornate Box Turtle		pg. 62
Thamnophis sauritus	Eastern Ribbonsnake		pg. 66
Tropidoclonion lineatum	Lined Snake		pg. 70

Smooth softshell turtle, Apalone mutica (Illinois endangered)

Listed as IL E, 10/30/2009
Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures

Apalone mutica **(LeSueur, 1827)**
Smooth Softshell Turtle **TRIONYCHIDAE**

Illinois Status: Endangered
Federal Status: None
Present Distribution: Central United States, the Ohio, Mississippi, and Missouri rivers and their tributaries; streams draining to the Gulf of Mexico, from extreme western Florida to eastern Texas (Conant and Collins 1991). The Illinois Natural Heritage Database documents recent (post-2000) records from Calhoun, Cass, Cumberland, Fulton, Jackson, Lawrence, Mason, Menard, Peoria, Pike and Sangamon counties (IDNR 2010). Additionally, Anderson et al (2002) and Barko and Briggler (2006), recorded the species from locations in Hancock and Alexander and Union counties, respectively.
Former Illinois Distribution: Phillips et al (1999) report this species from 34 counties primarily along the border and larger interior rivers in Illinois prior to 1999, with 30 counties known for only pre-1980 records.
Habitat: Predominantly a river turtle, it inhabits rivers and large streams with sand substrate, bars, and banks. Uncommon in lakes (Phillips et al 1999).
Reason for Status: While this species is susceptible to trapping, it has not been captured in abundance at any site except for a recently sampled section of the Sangamon River in Menard County. Other sampling efforts at known sites on the Middlefork Vermilion, Wabash, and Embarrass Rivers have been unsuccessful in capturing additional animals. Sampling may be particularly difficult on large rivers (e.g., Wabash and Mississippi).
Management Recommendations: Poor water quality and lack of suitable nesting habitat may be an issue for this species. Increased attention to watershed planning should consider the habitat of this species. Additional survey efforts may help verify the status of the species in streams where recent efforts were unsuccessful.

Key
The narratives in this section are accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur within the last 10 years (post-2000) according to the Illinois Natural Heritage Database are shown as a solid circle; county records which may no longer be extant (pre-2000) are shown as an open circle. An example of a species treatment is as follows:

Citation: Mankowski, A., editor. 2010. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 4 - 2009 and 2010 Changes to the Illinois List of Endangered and Threatened Species. Illinois Endangered Species Protection Board, Springfield, Illinois. iii + 38 pp.

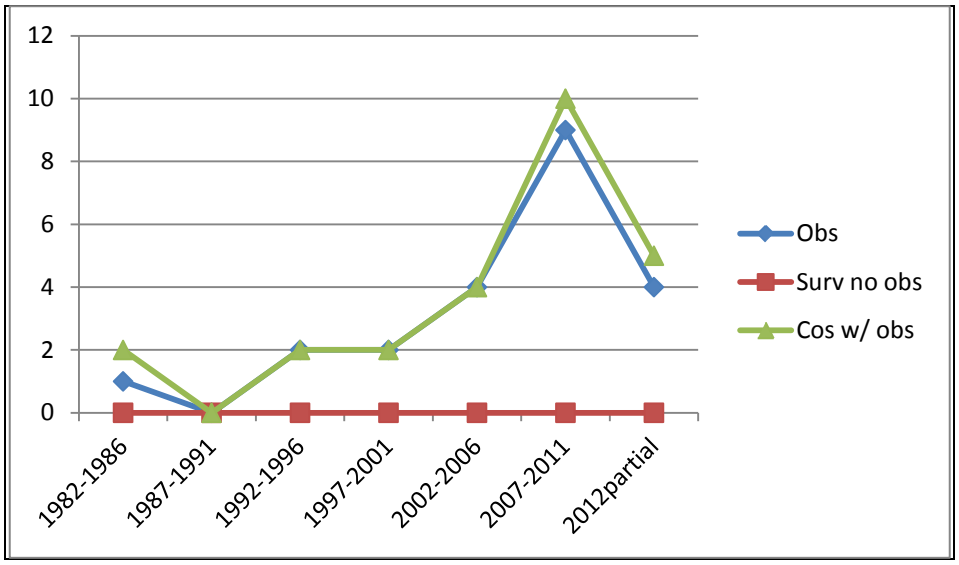
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-07-20	20	18	1	26	17	14

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

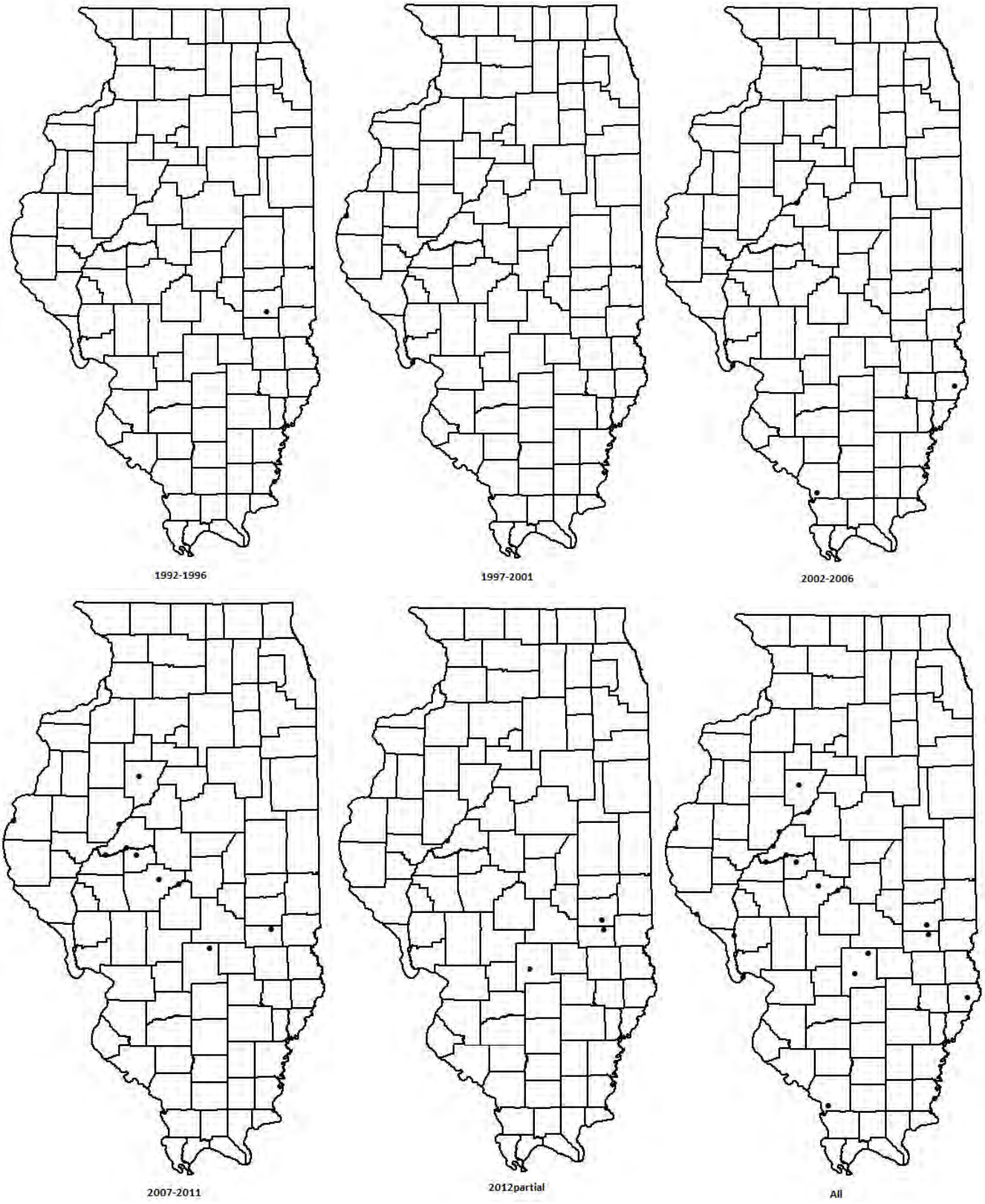
	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012partial
Obs	1	0	2	2	4	9	4
Surv no obs	0	0	0	0	0	0	0
Cos w/ obs	2	0	2	2	4	10	5

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

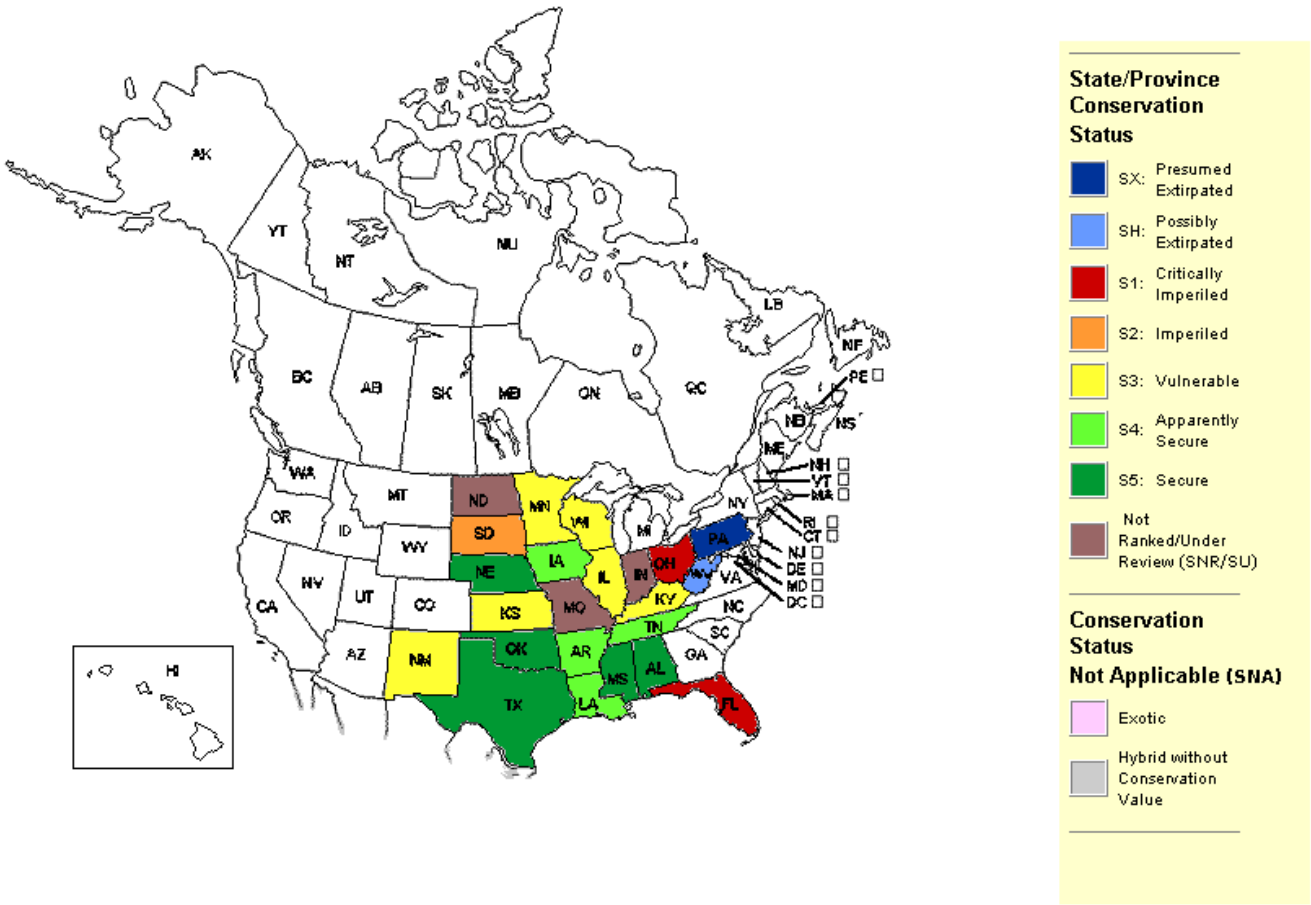


Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)



Apalone mutica



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).

Spotted turtle, Clemmys guttata (Illinois endangered)

Listed as IL E, 12/31/1977
Reason for listing: restricted habitats or low pops in IL;

Clemmys guttata (Schneider)

SPOTTED TURTLE **EMYDIDAE** **Status:** Endangered in Illinois

Present Distribution: The spotted turtle is widely distributed in disjunct populations ranging as far north as southern Canada and throughout the northeastern United States. The range follows the Atlantic Coastal Plain south into northern Florida (Ernst 1972, Conant and Collins 1991). In Illinois, the spotted turtle is at its extreme western range limit (Smith 1961), where it is known from two extant populations in Will County.
Former Illinois Distribution: Historically, the spotted turtle's range probably included much of the Chicago metropolitan area (Dreslik *et al.* 1998). The first Illinois specimen was reported in 1927 by Cahn (1937) from Wolf Lake, Cook County.
Habitat: The spotted turtle is associated with wetland including fens, marshes, bogs, streams, and ponds (Ernst *et al.* 1994), and in Illinois is found in cattail marshes with associated sedge meadows (Wilson 1994). Moreover, a complex of wetland and mesic prairie habitats in juxtaposition are necessary (Mauger 1988, Wilson 1994).
Reason for Status: Urbanization, habitat degradation and destruction, collecting for the pet trade, and small population dynamics are causes for the endangered status of the spotted turtle in Illinois.
Management Recommendations: Natural populations within Illinois should be managed to protect the water and surrounding preferred habitat from disturbance. Long-term studies detailing the ecology and life history of Illinois' two extant populations are underway which have provided management recommendations specific to the conservation of the spotted turtle (Mauger 1987, 1988, Capler and Moll 1988, McGee *et al.* 1988, Mauger *et al.* 2002, Wilson 1994).

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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.

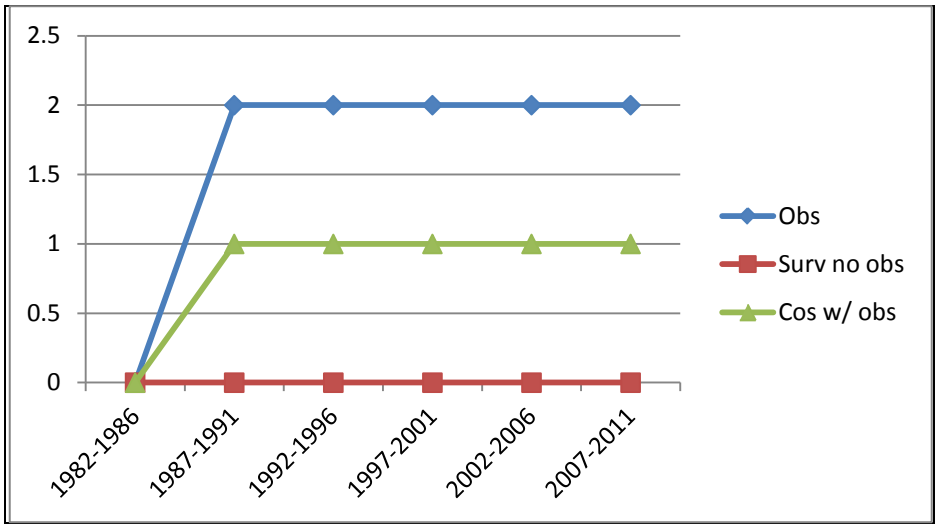
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2010-09-17	2	2	2	2	1	1

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	0	2	2	2	2	2
Surv no obs	0	0	0	0	0	0
Cos w/ obs	0	1	1	1	1	1

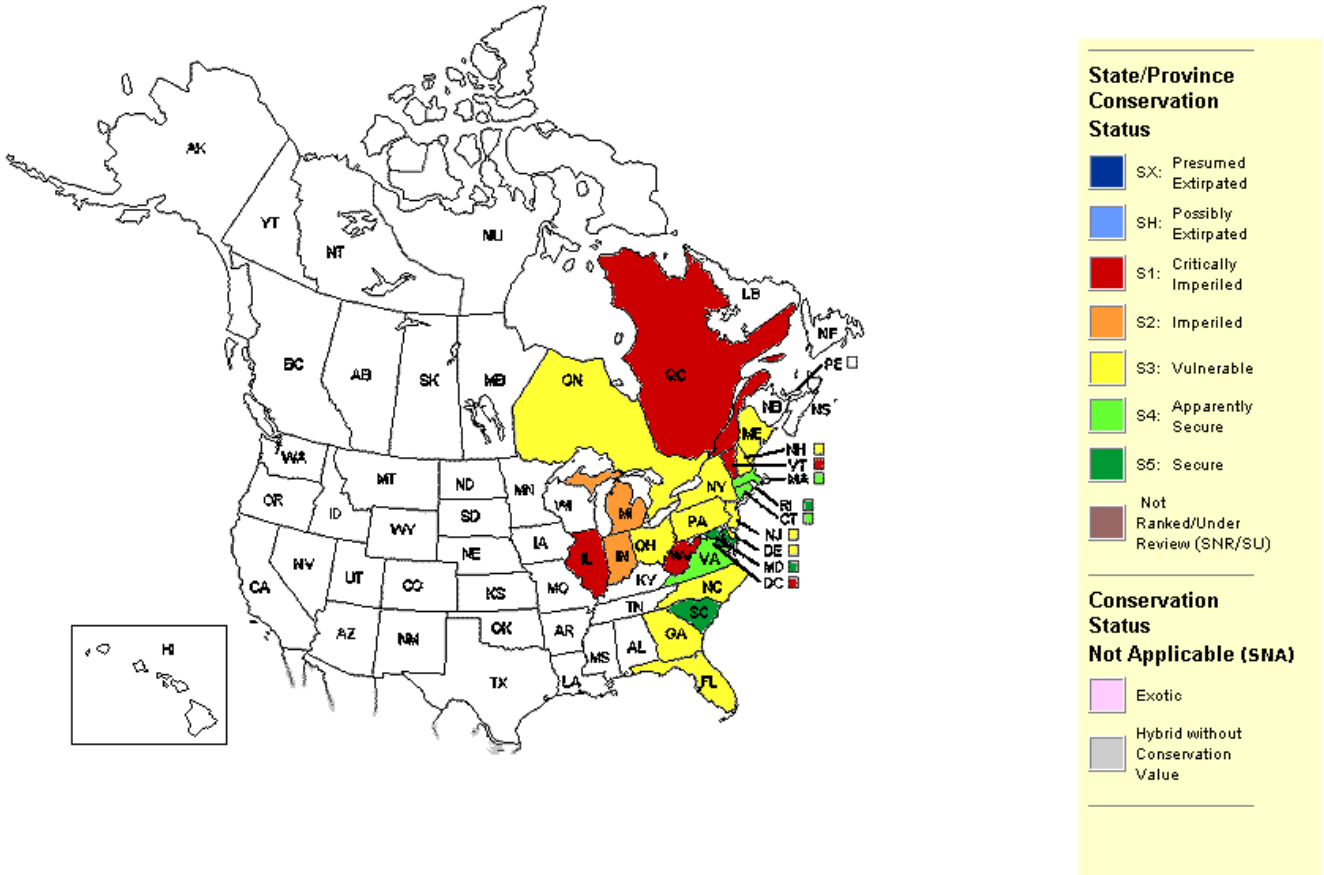
Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



Observed and surveyed with no observation element occurrence locations for respective time periods and all
● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)

No maps produced - both occurrences of this species are located in Will County.

Clemmys guttata



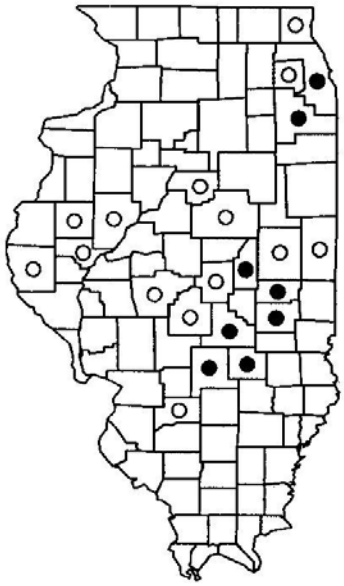
NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed March 2, 2012).

Kirtland's snake, Clonophis kirtlandi (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;

Clonophis kirtlandi (Kennicott)

KIRTLAND'S SNAKE **COLUBRIDAE** **Status:** Threatened in Illinois



Present Distribution: This secretive snake is presently restricted to disjunct populations in Michigan, Ohio, Illinois, Indiana, and Kentucky (Wilsmann and Sellers 1988). There are recent records for the Kirtland's snake from nine Illinois counties (Bavetz 1993).
Former Illinois Distribution: This species was formerly much more widespread in Illinois with historic records from at least 41 sites in 23 northeastern, central, and western Illinois counties (Wilsmann and Sellers 1988, Bavetz 1993).
Habitat: The Kirtland's snake is found in wet meadows, open swamp-forests, reservoirs, and occasionally wet, vacant urban areas (Wilsmann and Sellers 1988, Conant and Collins 1991).
Reason for Status: This species has declined range-wide with extant populations known from only 25% of the areas with historic records. In Illinois, populations of Kirtland's snake have apparently been reduced by 80% (Wilsmann and Sellers 1988). In 1988, eight of the 48 (~16%) known populations of this species in the United States were in Illinois (Wilsmann and Sellers 1988). Recent (1991-1992) searches for this snake in southern and western Illinois failed to locate any Kirtland's snakes, although suitable habitat remains in several areas (Brandon and Bavetz 1992).
Management Recommendations: Efforts to monitor this secretive species should continue. Areas where this species is known to occur should be protected from development and other disturbances that may adversely affect this species.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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.

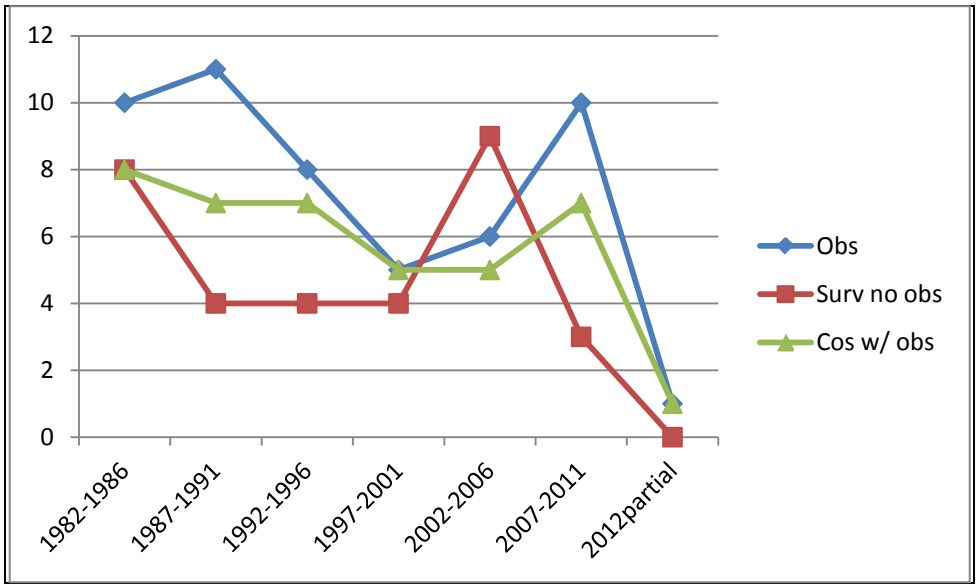
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-05-11	37	12	6	32	17	10

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

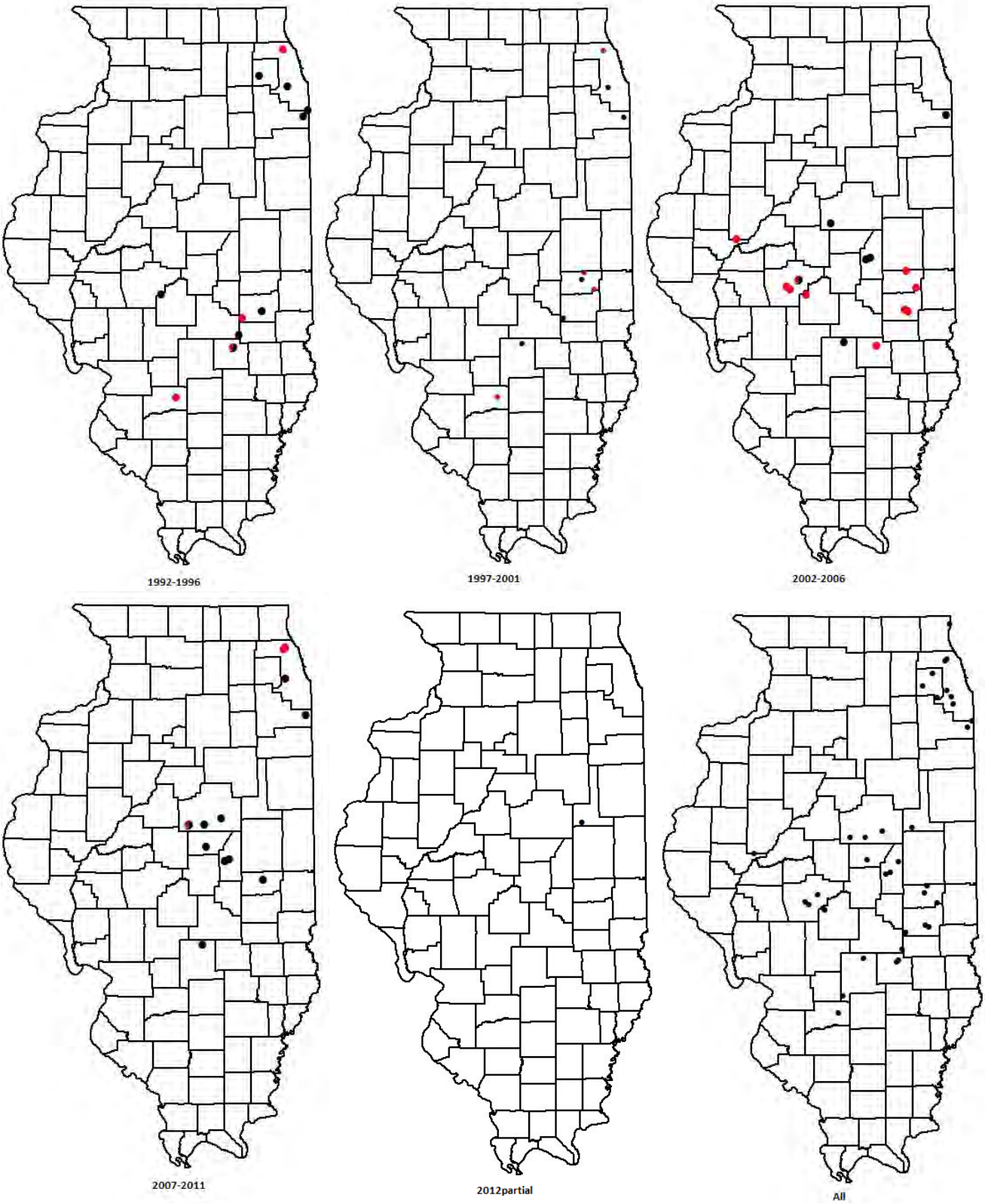
	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012partial
Obs	10	11	8	5	6	10	1
Surv no obs	8	4	4	4	9	3	0
Cos w/ obs	8	7	7	5	5	7	1

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

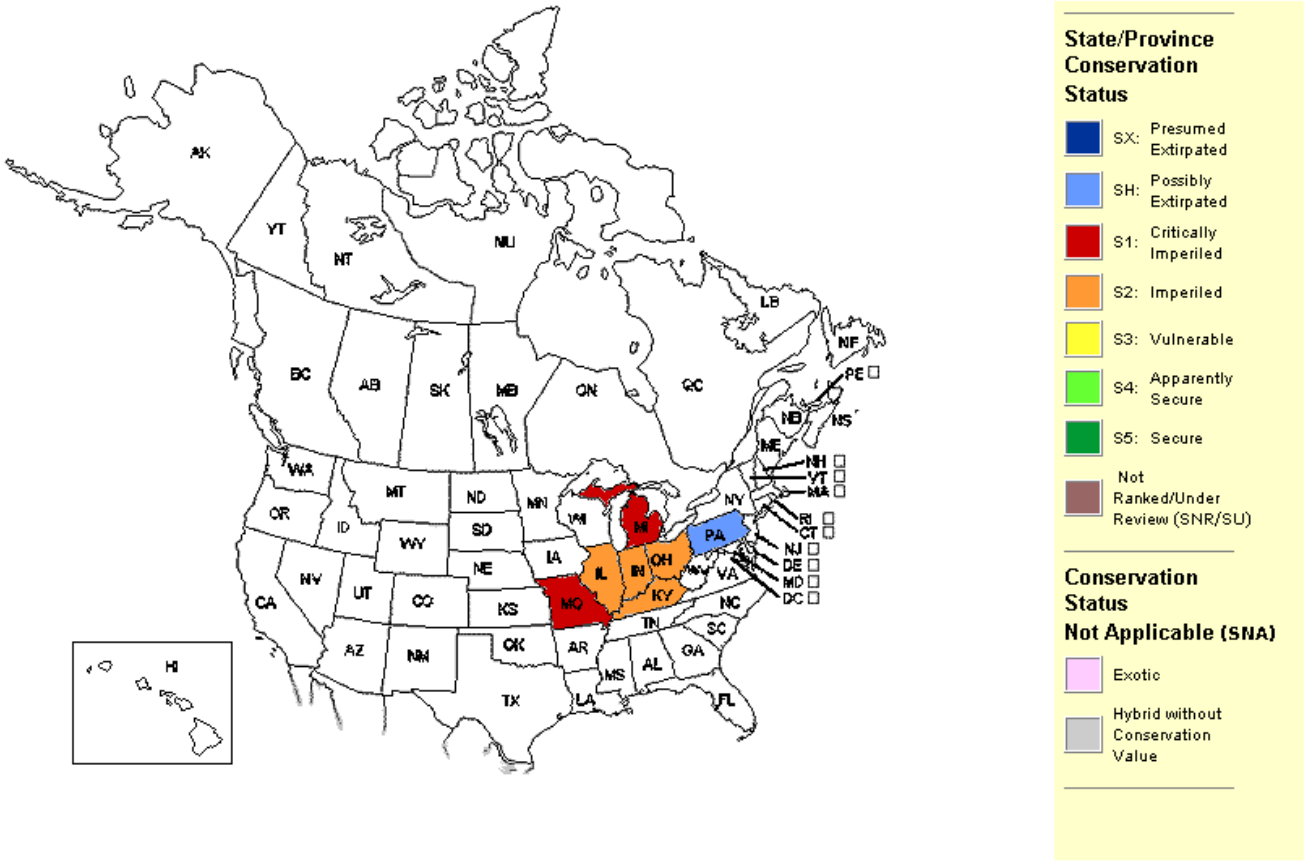


Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)



Clonophis kirtlandii



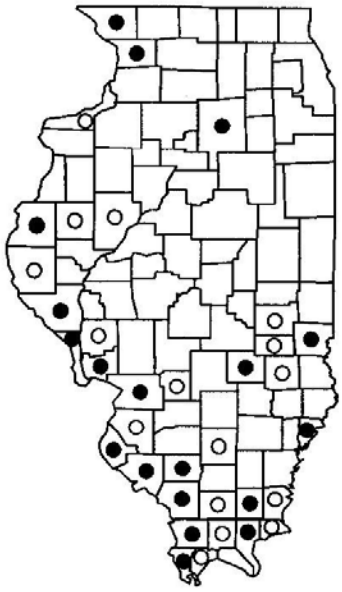
NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed March 2, 2012).

Timber rattlesnake, Crotalus horridus (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;

Crotalus horridus Linnaeus

TIMBER RATTLESNAKE **VIPERIDAE** **Status:** Threatened in Illinois



Present Distribution: The timber rattlesnake occurs from New Hampshire and New York to northern Georgia and west, north of the Mississippi embayment to Illinois and Wisconsin (Conant and Collins 1991).
Former Illinois Distribution: The timber rattlesnake once had an extensive range in the non-prairie areas of Illinois (Brandon and Ballard 1991). There are historic records from 33 Illinois counties (Brandon and Ballard 1991).
Habitat: This species is usually found in forested areas with bluffs and rock outcrops, but it also is occasionally found in upland forests or even crop fields (Smith 1961). In the fall, timber rattlesnakes congregate at den sites, usually in rock bluffs with many deep cracks and fissures (Smith 1961).
Reason for Status: Many historic populations of this species in Illinois, and elsewhere within its range, have been decimated, and many current populations are threatened by habitat destruction and indiscriminate killing.
Management Recommendations: Areas where this species congregates should be afforded complete protection from human disturbance.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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.

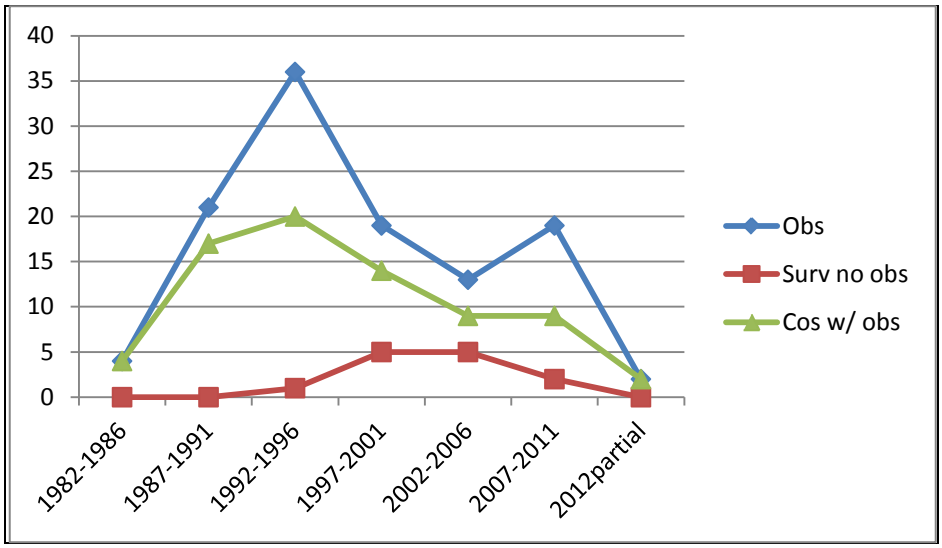
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-07-30	54	21	12	56	25	14

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012partial
Obs	4	21	36	19	13	19	2
Surv no obs	0	0	1	5	5	2	0
Cos w/ obs	4	17	20	14	9	9	2

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



Observed and surveyed with no observation element occurrence locations for respective time periods and all

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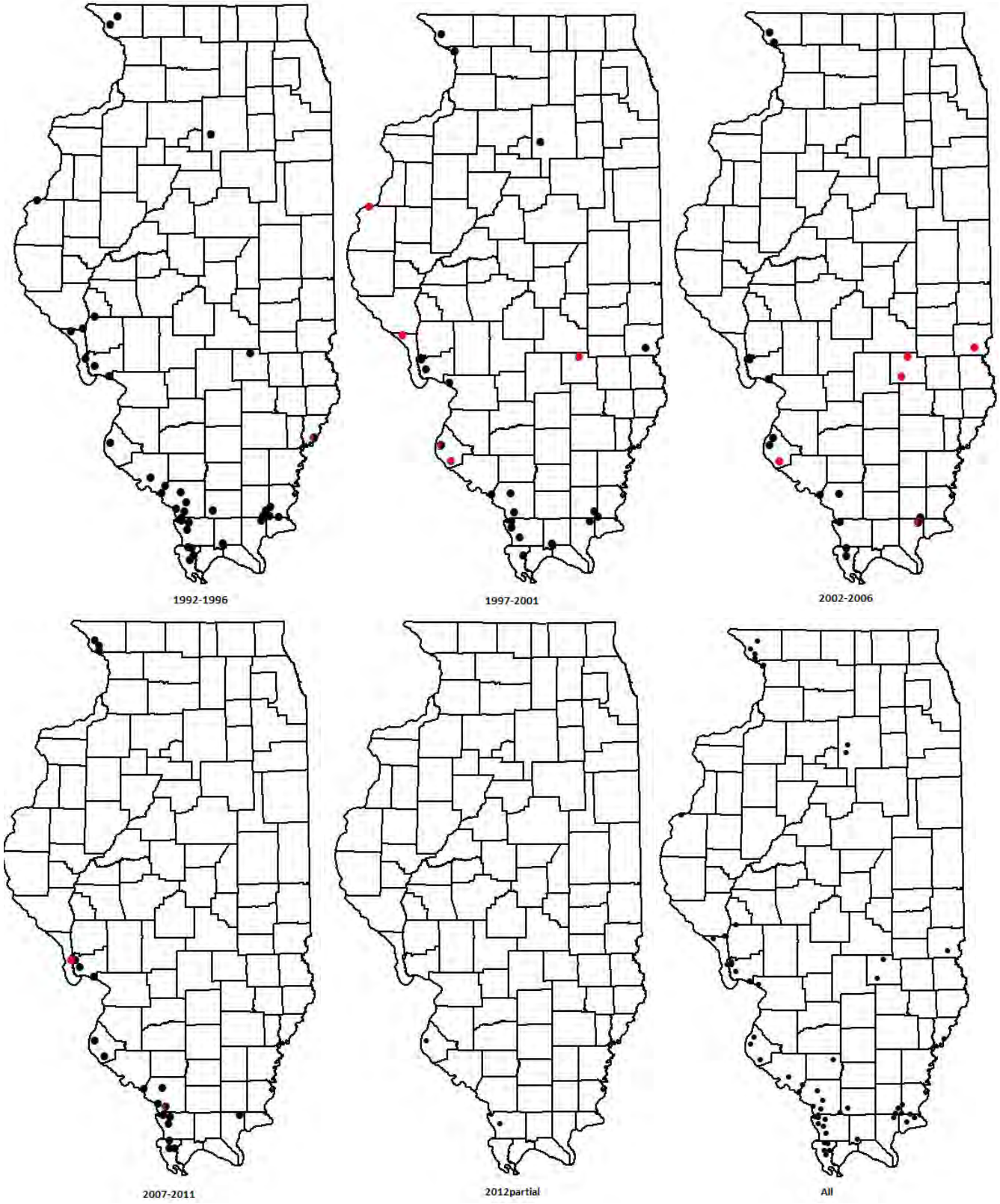
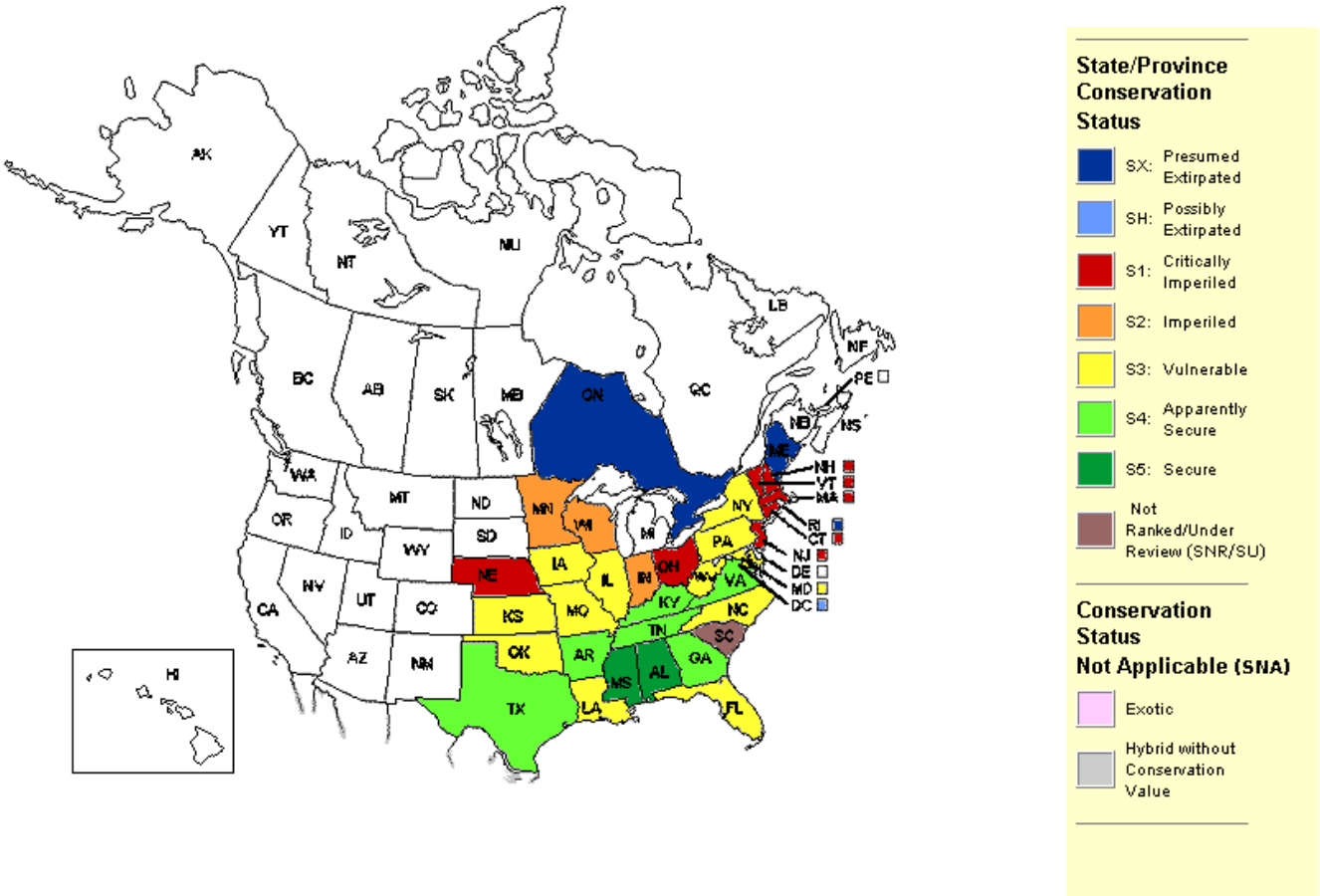


Crotalus horridus



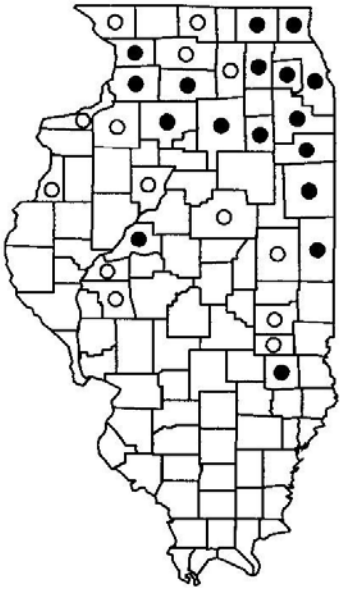
NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed March 2, 2012).

Blanding's turtle, Emydoidea blandingii (Illinois endangered)

Listed as IL T, 4/26/1999; Listed at IL E, 10/30/2009
Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures;

Emydoidea blandingii (Holbrook)

BLANDING'S TURTLE **EMYDIDAE** **Status:** Threatened in Illinois



Present Distribution: Blanding's turtle is known from southern Ontario to central Illinois and Iowa, west to Nebraska and Minnesota and east to Pennsylvania. Disjunct populations occur in New York, Nova Scotia, and Maine to eastern Massachusetts along the eastern seaboard (Conant and Collins 1991). The current range of the Blanding's turtle in Illinois is primarily in the northern half of the state with populations following the Illinois River southward (Phillips *et al.* 1999).
Former Illinois Distribution: In the 1800s, the Blanding's turtle was common throughout the prairie region before prairie marshes were drained for cultivation (Kennicott 1855, Garman 1890). The Blanding's turtle was first documented from Cook County from a specimen collected by J.W. Velie in 1878 (Yarrow 1882). Garman (1891) reported Blanding's turtles from McLean County, however no specimen exists.
Habitat: The Blanding's turtle typically inhabits marshes, bogs, fens, prairie wetlands, sedge meadows, and vegetated regions of shallow lakes and ponds (Phillips *et al.* 1999). Additionally, Blanding's turtles have been reported from shallow slow-moving streams, oxbow lakes, and pools adjacent to rivers. Males and females will make overland forays, and when water levels are low, turtles utilize adjacent terrestrial habitats (Rowe 1987, Rowe and Moll 1991, Rubin 2000, Rubin *et al.* 2001).
Reason for Status: Life history characteristics of the Blanding's turtle potentially contribute to their decline; they include delayed sexual maturity (Congdon *et al.* 1993), the requirement of high temperature for hatchling success (Gutzke and Packard 1987), high rates of nest predation (Ross and Anderson 1990, Congdon *et al.* 1983), small population sizes, low rates of juvenile recruitment, and low rates of migration among habitat patches (Rubin *et al.* 2001).
Management Recommendations: Known populations should be monitored while acquisitions and protection of these sites is undertaken. The efficacy of headstarting programs currently underway in DuPage and McHenry counties should be assessed.

KEY
The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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.

Reason for change in status from threatened to endangered (finalized in 2009):

> ***Emydoidea blandingii*** **(Blanding's turtle)** - Proposed Action: change status from threatened to endangered. The greatest concentration of recent records is located in the Chicago area, although indications are that overall, populations continue to decline across NE Illinois. It also appears that the more interior populations in Illinois may have been lost long ago due to intensive agriculture and wetland draining. Effects of urbanization and small preserve size continue to be threats to this species, especially in the Chicago area. (Minutes of the 140th Meeting, Illinois Endangered Species Board, 14 November 2008, p 23)

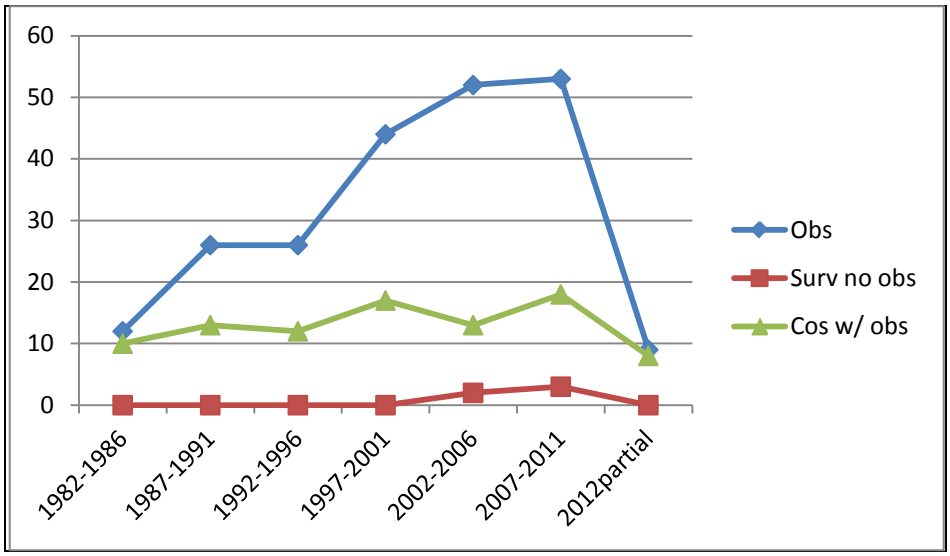
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-08-07	144	82	44	107	28	22

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

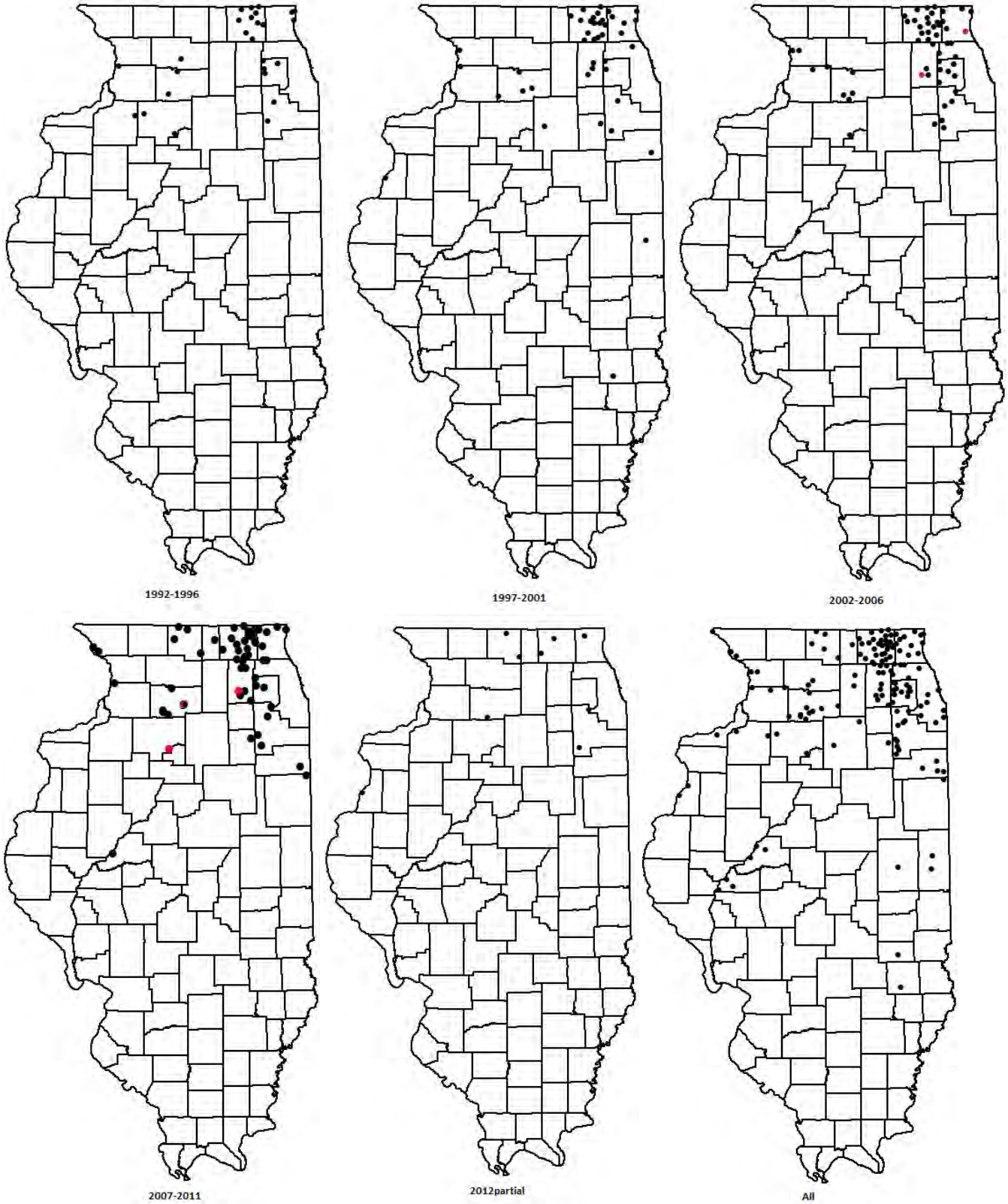
	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012parrtial
Obs	12	26	26	44	52	53	9
Surv no obs	0	0	0	0	2	3	0
Cos w/ obs	10	13	12	17	13	18	8

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

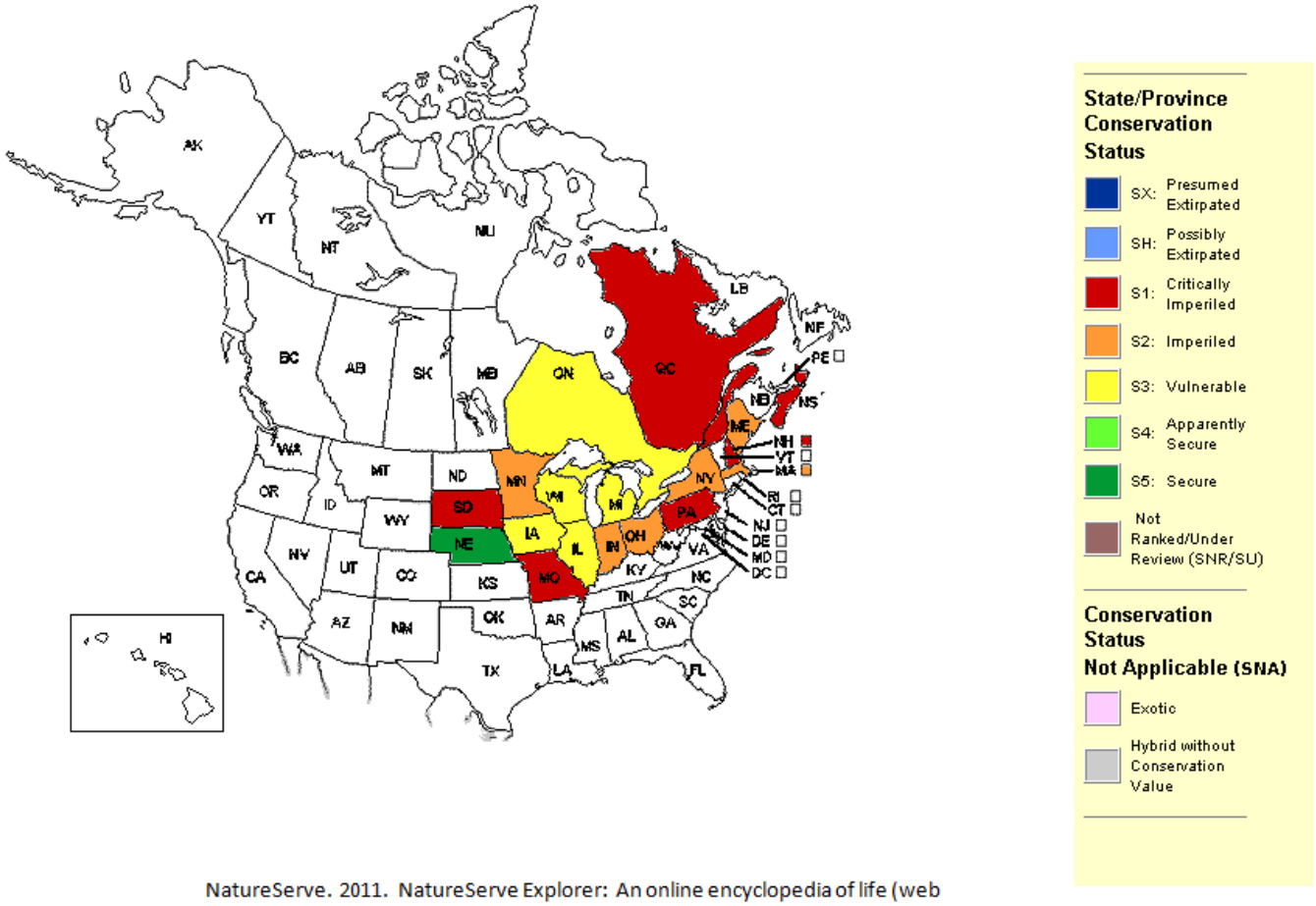


Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)



Emydoidea blandingii



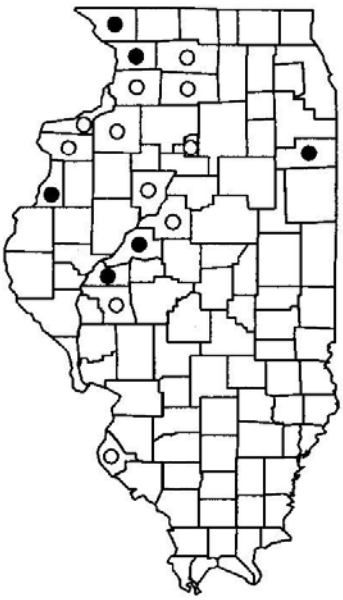
NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed March 2, 2012).

Plains hog-nosed snake, Heterodon nasicus (Illinois threatened)

Listed as IL T, 12/31/1977
Reason for listing: restricted habitats or low pops in IL; significant disjuncts in IL - IL pop far removed from rest of species' range;

Heterodon nasicus Baird & Girard

WESTERN HOGNOSE SNAKE **COLUBRIDAE** **Status:** Threatened in Illinois



Present Distribution: This species is found from southern Alberta to northern Mexico. Its principal range covers the central Great Plains, but disjunct colonies exist as far east as Missouri and Illinois (Conant and Collins 1991). Most Illinois records are from the sand areas in the northwestern and west-central parts of the state. A single, questionable record exists for a specimen taken from a "hill prairie" in southwestern Illinois (Moll 1962). Populations in northern and central Illinois are considered intergrades between *Heterodon nasicus gloydi* and *Heterodon nasicus nasicus*, whereas the specimen from southwestern Illinois (Monroe County) has been referred to as *Heterodon nasicus gloydi* (Smith and Smith 1962). The population in western Kankakee County is probably introduced.
Former Illinois Distribution: Garman (1891) considered this species rare in Illinois and listed only one record from Pekin. The species is still present in many of the areas for which there are historical records, so its present distribution probably reflects its historic distribution.
Habitat: The western hognose snake has a preference for dry prairie areas, especially sandy ones (Conant and Collins 1991). In Illinois, sand prairies provide typical habitat (Smith 1961).
Reason for Status: This species' general restriction to sand prairies makes it vulnerable to decimation through habitat destruction. The pine plantations established for reforestation and Christmas tree trade have already eliminated much habitat.
Management Recommendations: Acquisition and protection of habitat occupied by this species is probably the best management procedure. The species seems to do quite well if the habitat is not greatly disrupted.

KEY

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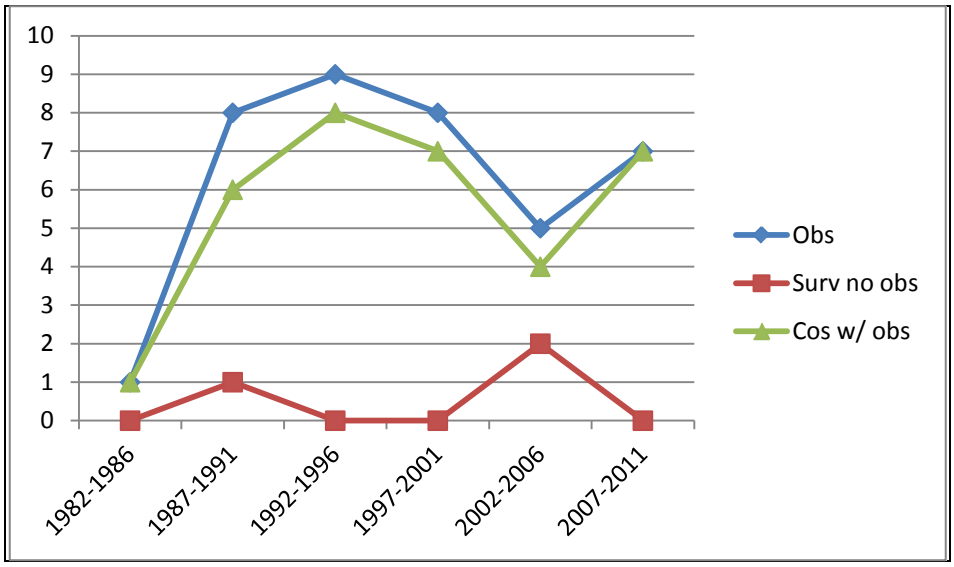
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2011-09-17	25	11	6	27	14	12

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	1	8	9	8	5	7
Surv no obs	0	1	0	0	2	0
Cos w/ obs	1	6	8	7	4	7

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



Observed and surveyed with no observation element occurrence locations for respective time periods and all

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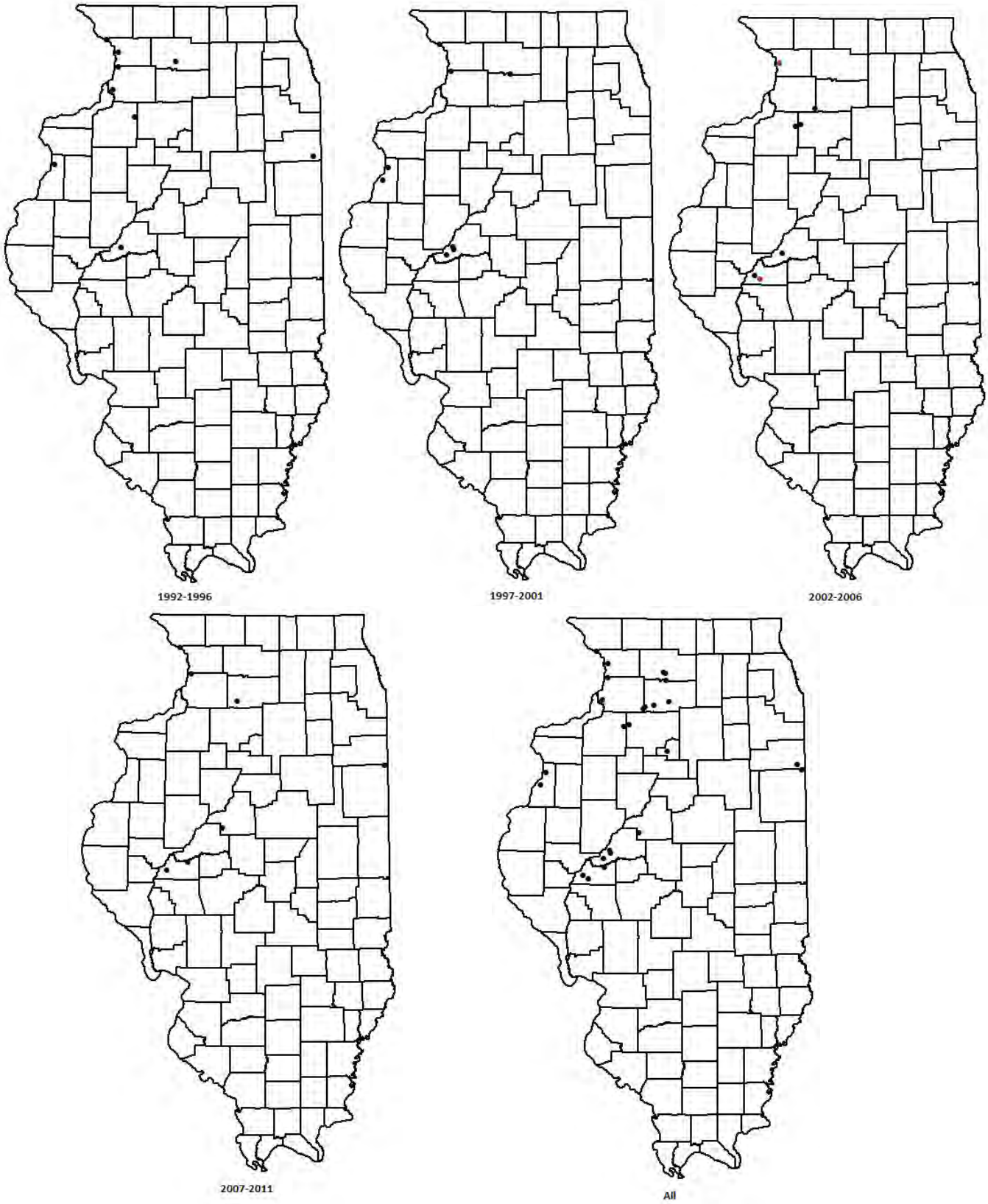
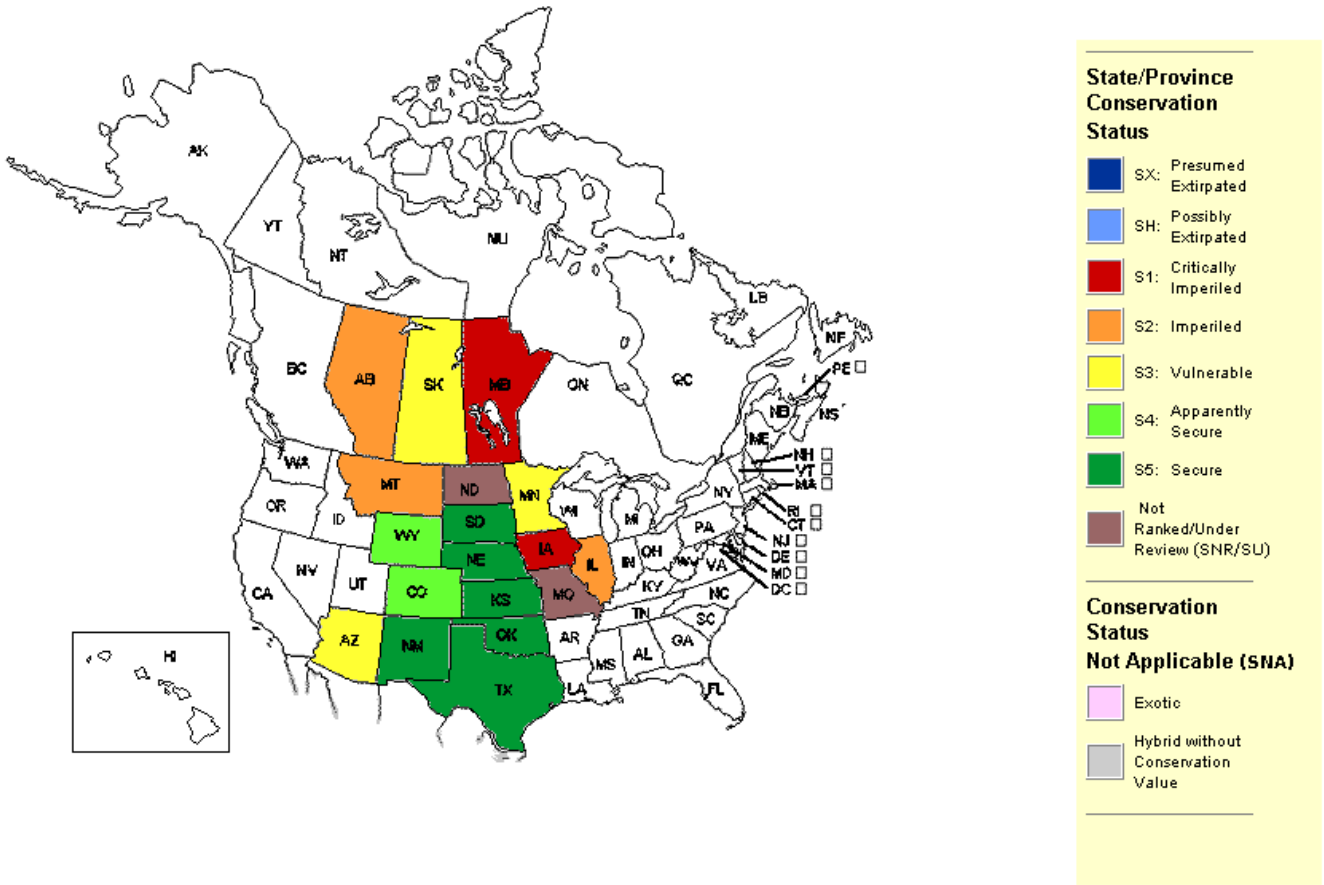


Heterodon nasicus



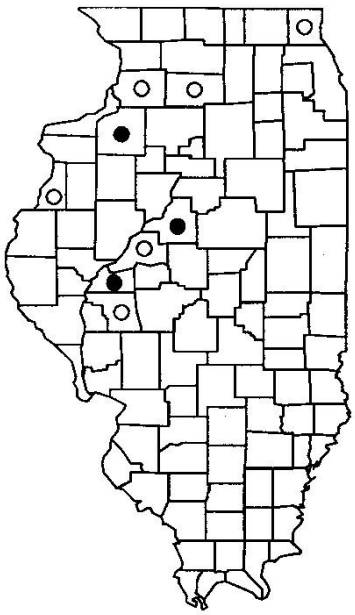
NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed March 2, 2012).

Yellow mud turtle, Kinosternon flavescens (Illinois endangered)

Listed as IL E, 12/31/1977
Reason for listing: restricted habitats or low pops in IL; significant disjuncts in IL - IL pop far removed from rest of species' range;

Kinosternon flavescens (Agassiz)

ILLINOIS MUD TURTLE **KINOSTERNIDAE** **Status:** Endangered in Illinois



Present Distribution: The yellow mud turtle occurs west of the Mississippi River in central Nebraska, Oklahoma, and Texas to eastern New Mexico with severely disjunct populations in Missouri, Iowa, and Illinois (Smith 1951, Conant and Collins 1991). Its range in Illinois encompasses the sandy areas of west-central and northwestern Illinois (Smith 1961, Moll 1977, 1982, Brown and Moll 1979). *Kinosternon flavescens spooneri*, the Illinois mud turtle is the subspecies found in Illinois.

Former Illinois Distribution: The species was probably more widely distributed in the sand areas of Illinois, and populations that were present in the 1950s may now be extirpated (Brown and Moll 1979). The first record of the species is from the Illinois River in Morgan County (Cahn 1931) and later was reported from Mason and Peoria counties (Cahn 1937). The Peoria County record may not be valid because Cahn (1937) provided no specific site locality or description.

Habitat: The Illinois mud turtle inhabits temporary to permanent ponds in addition to backwaters of rivers in regions with deep sandy soils (Smith 1961, Brown and Moll 1979, Dreslik *et al.* 1998, Phillips *et al.* 1999). In the spring and fall, individuals are aquatic, whereas in summer, mud turtles burrow in sand dunes and activity is reduced (Tuma 1993). Radio-located individuals seldom ranged more than 200 m from the margin of the pond (Moll and Brown 1977, Cooper 1977, Moll 1988a, Tuma 1993).

Reason for Status: The turtle is known from 20 localities with only two of these populations having more than ten individuals. In 1985, the total Illinois population was estimated at 69 individuals(Sweet *et al.* 1985, Moll 1988a, 1997). Tuma (1993) reported that all four nests he monitored from a population in McHenry County were depredated.

Management Recommendations: Paramount to the survival of the Illinois mud turtle is the acquisition and protection of sites where the species has been found (Brown and Moll 1979). Management recommendations to augment and restore the habitat for the population at Sand Ridge State Forest were instituted (Sweet *et al.* 1985), but the success has not been determined (Sweet *et al.* 1985).

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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.

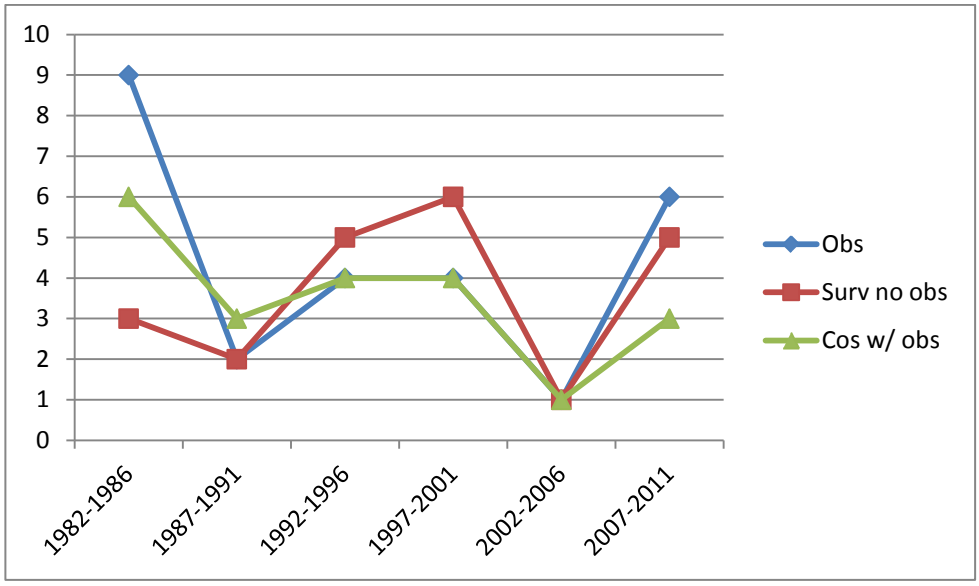
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2009-07-14	16	7	1	15	8	4

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

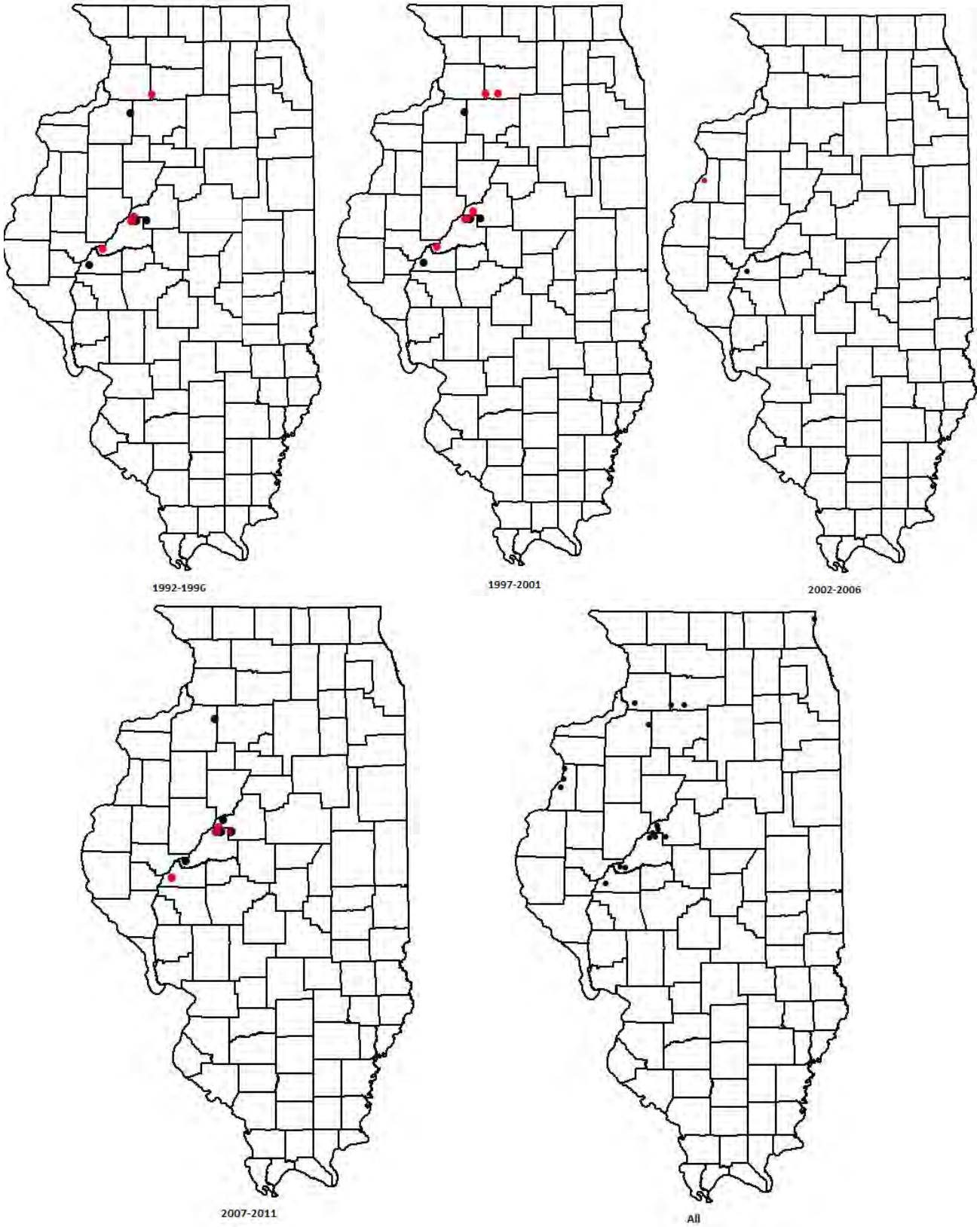
	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	9	2	4	4	1	6
Surv no obs	3	2	5	6	1	5
Cos w/ obs	6	3	4	4	1	3

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

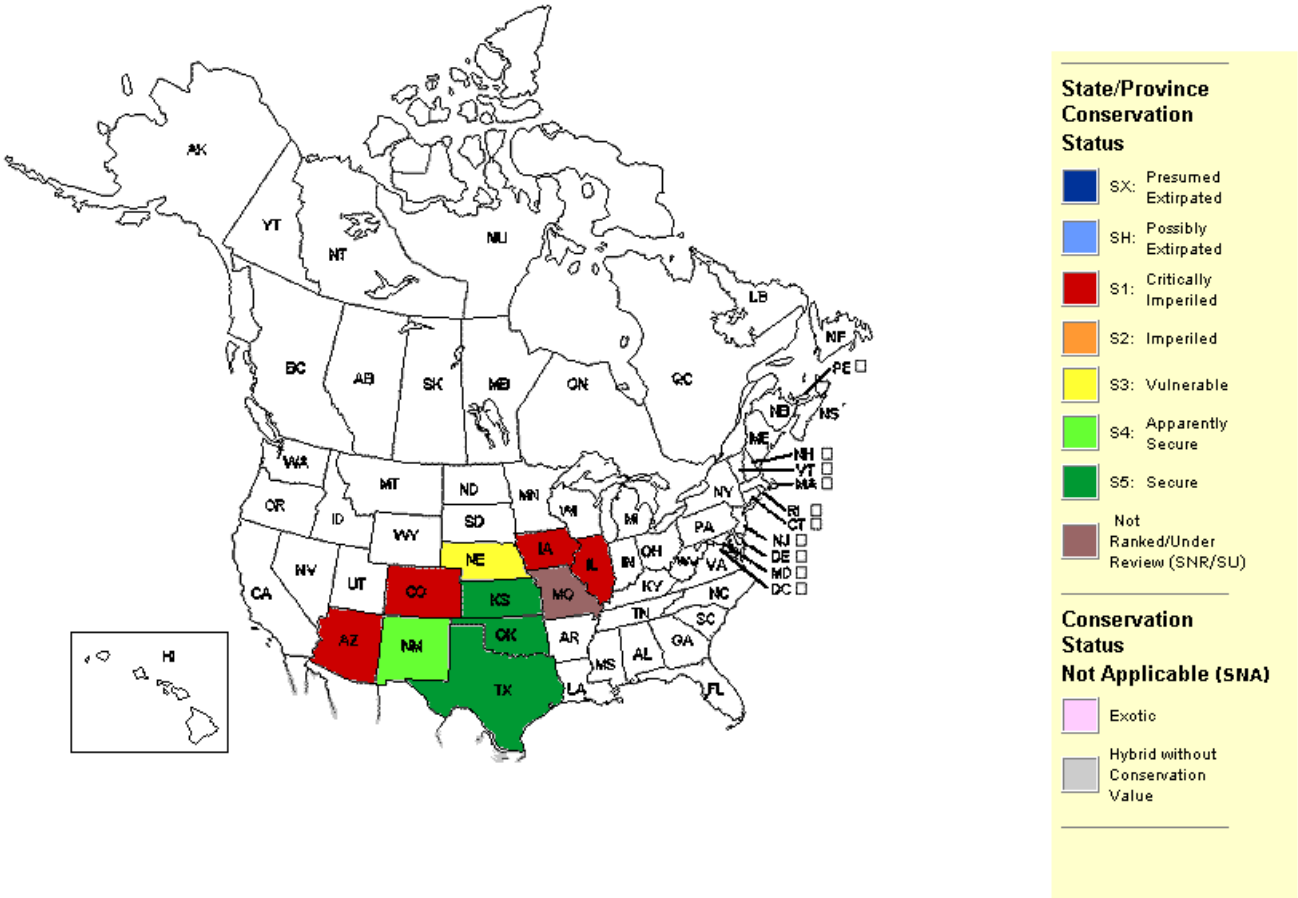


Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)



Kinosternon flavescens



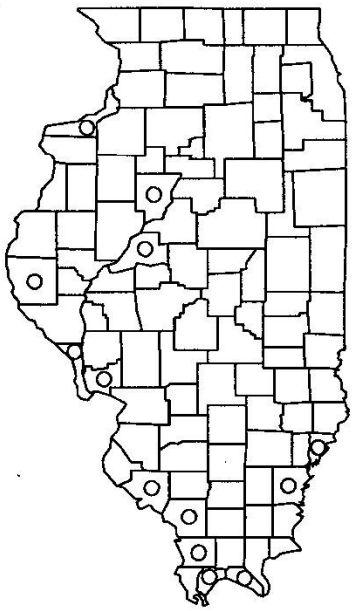
NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed March 2, 2012).

Alligator snapping turtle, Macrochelys temminckii (Illinois endangered)

Listed as IL T, 1/18/1994; Listed as IL E, 4/26/1999
Reason for listing: restricted habitats or low pops in IL;

Macrochelys temminckii (Harlan)

ALLIGATOR SNAPPING TURTLE **CHELYDRIDAE** **Status:** Endangered in Illinois



Present Distribution: The alligator snapping turtle ranges from the Gulf Coast on the panhandle of Florida, west to eastern Texas, north through Georgia, Alabama, and Mississippi following major rivers north into Illinois (Conant and Collins 1991). The range extends northward in Illinois along the Mississippi, lower Illinois, Wabash, and Ohio rivers (Smith 1961, Phillips *et al.* 1999). Only one recent verified record exists for Illinois from Union County (Morris and Sweet 1985).
Former Illinois Distribution: The alligator snapping turtle was considered rare by both Cahn (1937) and Smith (1961). The first report of the alligator snapping turtle was from Wabash County (Hay 1887). Moll (1988b) considered the northernmost records (Adams, Calhoun, Jersey, Mason, Peoria, and Rock Island counties) to have resulted from releases.
Habitat: Alligator snapping turtles are primarily riverine but have been reported to inhabit everything from oxbows, floodplain lakes, canals, swamps, bayous, and clear streams (Ernst *et al.* 1994). In Illinois, the most suitable habitats are oxbows and channels of the lower Mississippi, Ohio, and Wabash rivers and cypress swamps (Cahn 1937, Smith 1961, Phillips *et al.* 1999).
Reason for Status: Although probably always rare, only two records of the alligator snapping turtle have been recorded since the early 1960s and no records since 1985 (Galbreath 1961, Morris and Sweet 1985). Direct impacts of channelization, levying, and draining of floodplain wetlands have probably reduced the number of alligator snapping turtles in Illinois.
Management Recommendations: The maintenance of wetlands along the floodplains of the Mississippi, Ohio, and Wabash rivers is recommended. Further, status surveys should be conducted in the lower Mississippi River, south of its confluence with the Big Muddy River, to determine if a viable population exists (Moll 1988b).

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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.

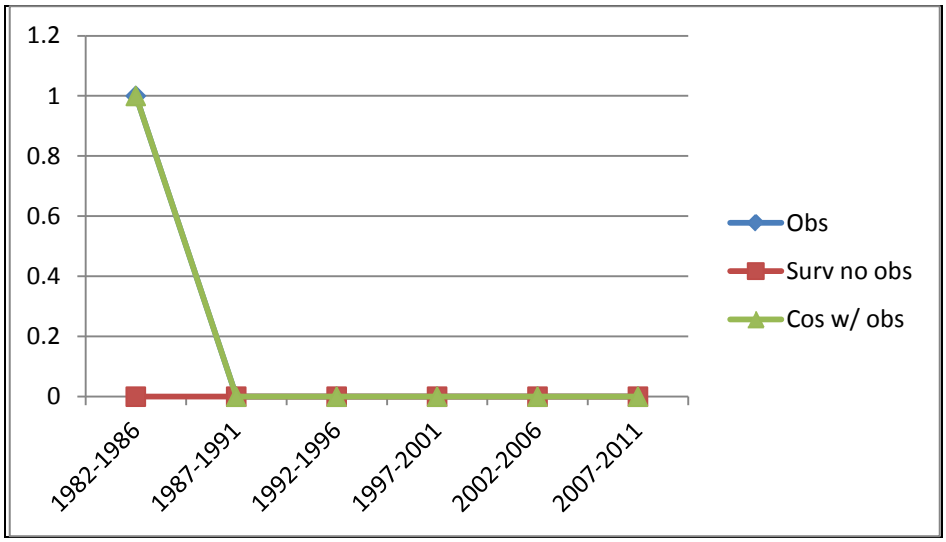
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
1984-11-15	1	0	0	1	1	0

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	1	0	0	0	0	0
Surv no obs	0	0	0	0	0	0
Cos w/ obs	1	0	0	0	0	0

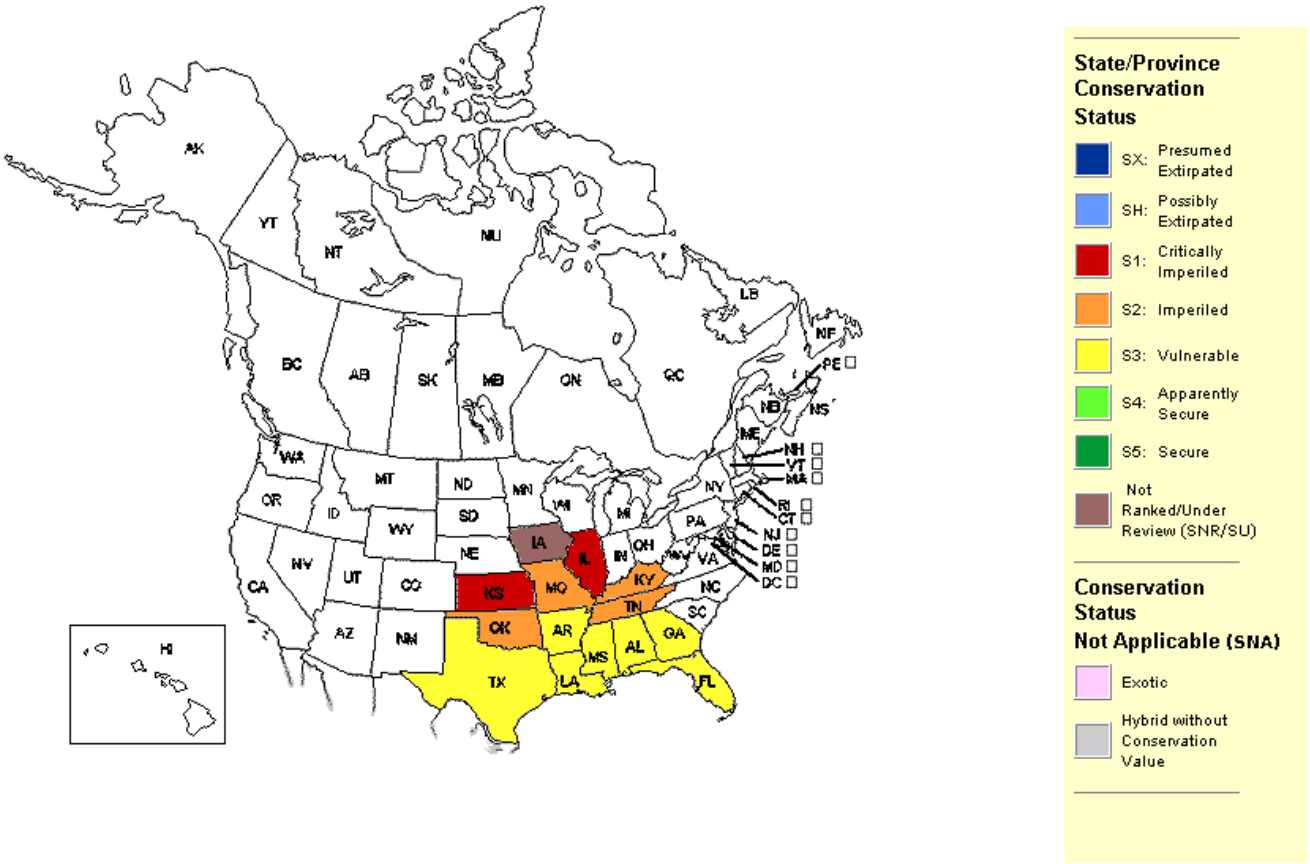
Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



Observed and surveyed with no observation element occurrence locations for respective time periods and all
● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)

No maps produced – single occurrence location is in Union County.

Macrochelys temminckii



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).

Coachwhip, Masticophis flagellum (Illinois endangered)

Listed as IL T, 12/31/1977; Listed as IL E, 4/26/1999
Reason for listing: restricted habitats or low pops in IL;

Masticophis flagellum (Shaw)

COACHWHIP **COLUBRIDAE** **Status:** Endangered in Illinois

Present Distribution: This large snake is found virtually from coast to coast in the southern United States and from northern Nebraska to central Mexico (Wilson 1973). Illinois is at the northern limit of its range. Although common in most parts of its range, this snake is rarely encountered in Illinois. *Masticophis flagellum flagellum* is the subspecies found in Illinois.

Former Illinois Distribution: This species was first discovered in Illinois in 1948 when two specimens were found in Monroe County (Smith and Burger 1950). Within the state it has apparently always been restricted to the Mississippi River bluffs in Monroe County.

Habitat: In Missouri, coachwhips occur in seasonally dry, rocky, brushy or wooded hillsides especially in cedar glades (Johnson 1987). In Illinois this habitat type occurs on the Mississippi River bluffs in southwestern Illinois.

Reason for Status: The coachwhip is considered threatened because of its limited range in the state and because it may be susceptible to decimation from habitat destruction, traffic fatalities, and indiscriminate killing.

Management Recommendations: Habitat disturbances (forest clearing, mining) in areas known to harbor coachwhips should be minimized.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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.

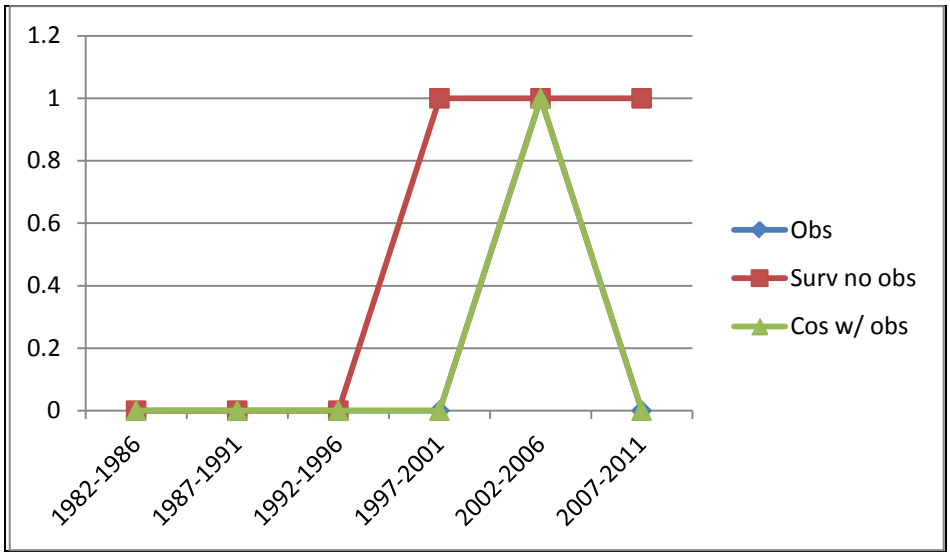
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2006-05-26	2	1	3	4	2	1

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	0	0	0	0	1	0
Surv no obs	0	0	0	1	1	1
Cos w/ obs	0	0	0	0	1	0

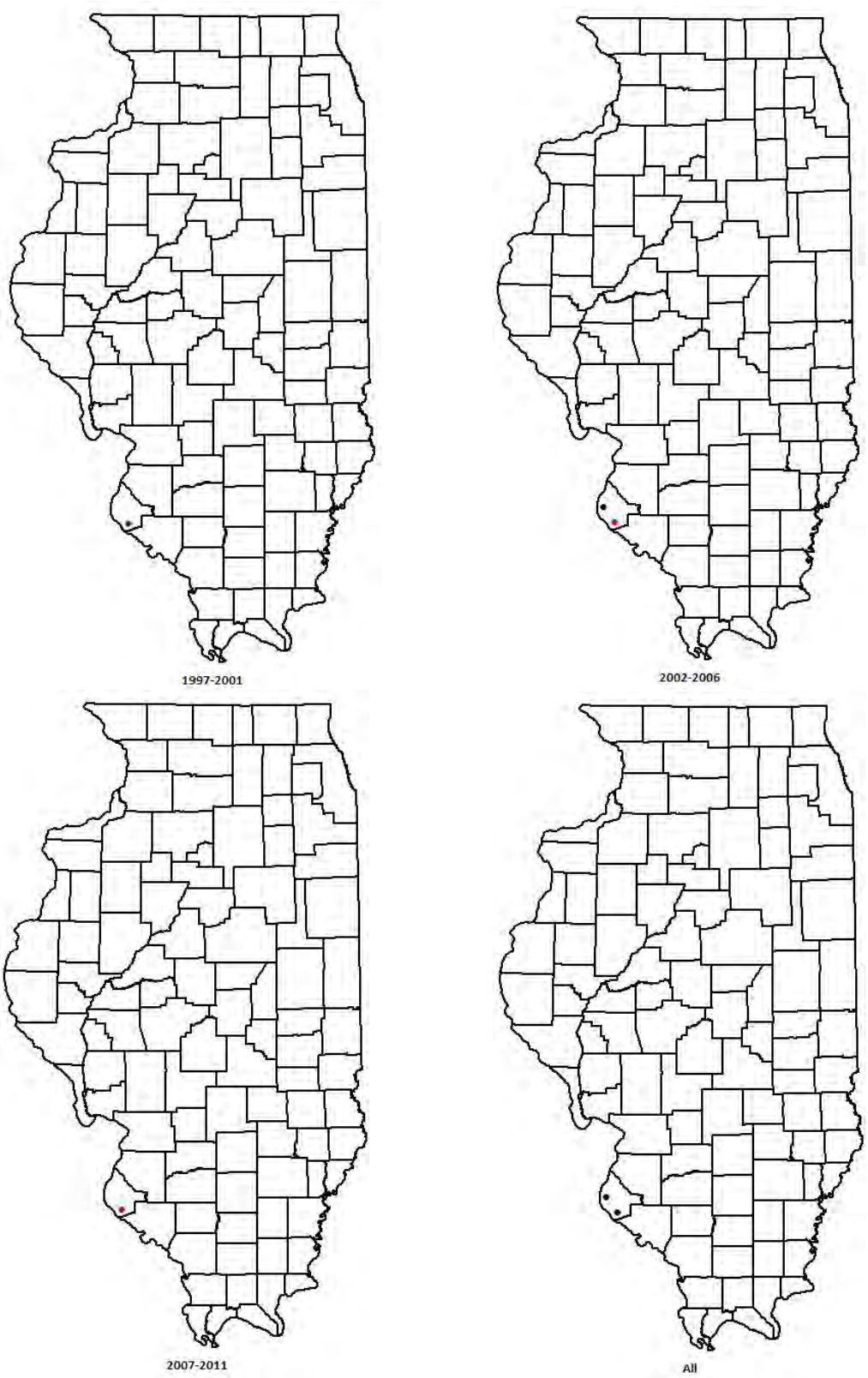
Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



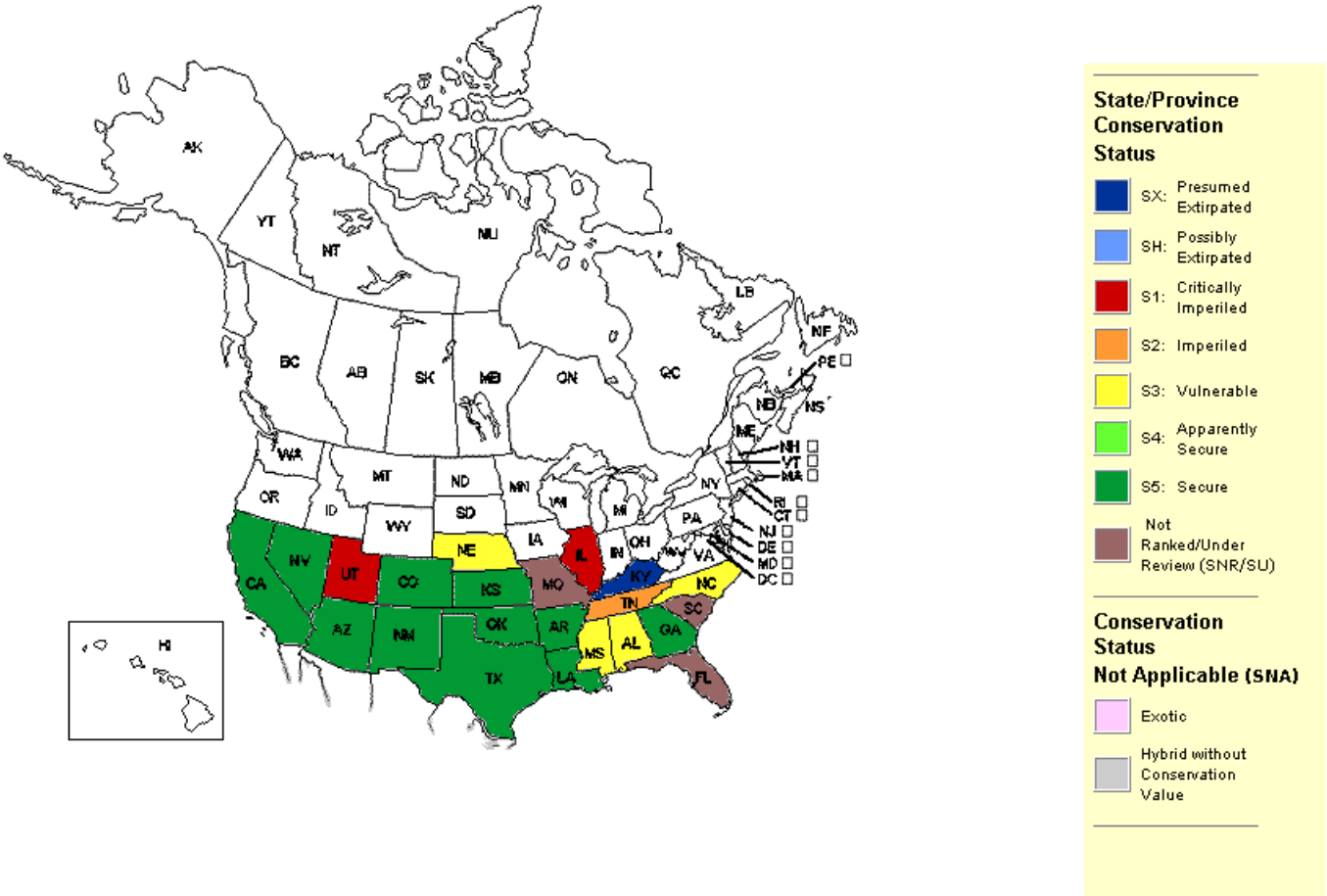
Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)

No obs or surv w/ no obs 1992-1996 - no map produced



Masticophis flagellum



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).

Mississippi green watersnake, Nerodia cyclopion (Illinois threatened)

Listed as IL T, 3/17/1989
Reason for listing: restricted habitats or low pops in IL;

Nerodia cyclopion (Dumeril, Bibron & Dumeril)

MISSISSIPPI GREEN WATERSNAKE **COLUBRIDAE** **Status:** Threatened in Illinois

Present Distribution: This watersnake occurs from southern Illinois south along the Mississippi River including parts of Missouri, Kentucky, Tennessee, Arkansas, Mississippi, Louisiana, and Texas (Dyer and Ballard 1991). In Illinois all recent records are from Union County (Garton *et al.* 1970, Dyer and Ballard 1991), although historic records also exist for Alexander County (Smith 1961).
Former Illinois Distribution: Garman (1891) listed one record for this southern species from Union County and Smith (1961) reported historic records from Alexander County. This watersnake apparently has always been restricted to the extreme southwestern part of the state.
Habitat: The green watersnake is a swamp-dwelling species preferring bald cypress-tupelo swamps and river sloughs (Garton *et al.* 1970, Johnson 1987).
Reason for Status: This species is considered threatened in Illinois due to its limited range, unique habitat requirements and small population size.
Management Recommendations: Protection of bald cypress-tupelo swamp habitat and periodic monitoring at the Horseshoe Lake area are the most pressing management needs for this species.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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.

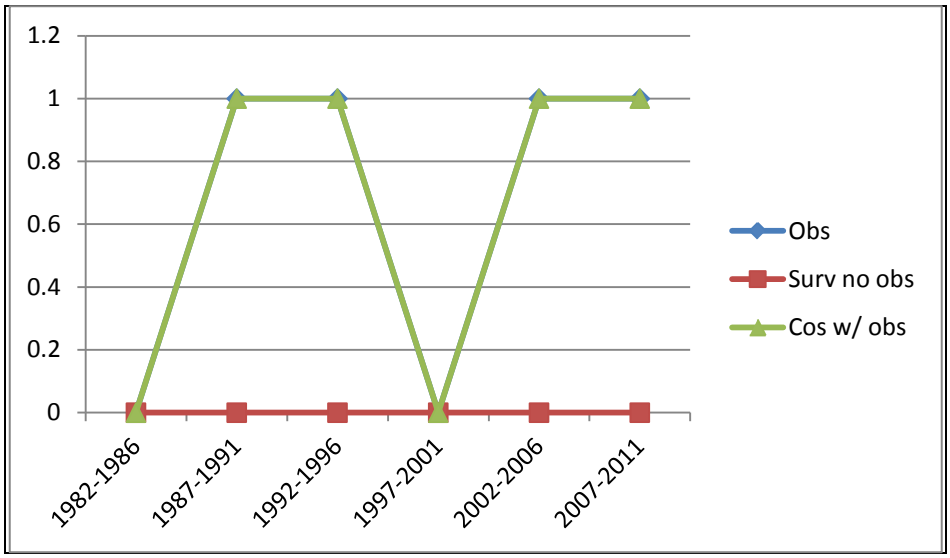
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2010-10-14	1	1	0	1	1	1

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	0	1	1	0	1	1
Surv no obs	0	0	0	0	0	0
Cos w/ obs	0	1	1	0	1	1

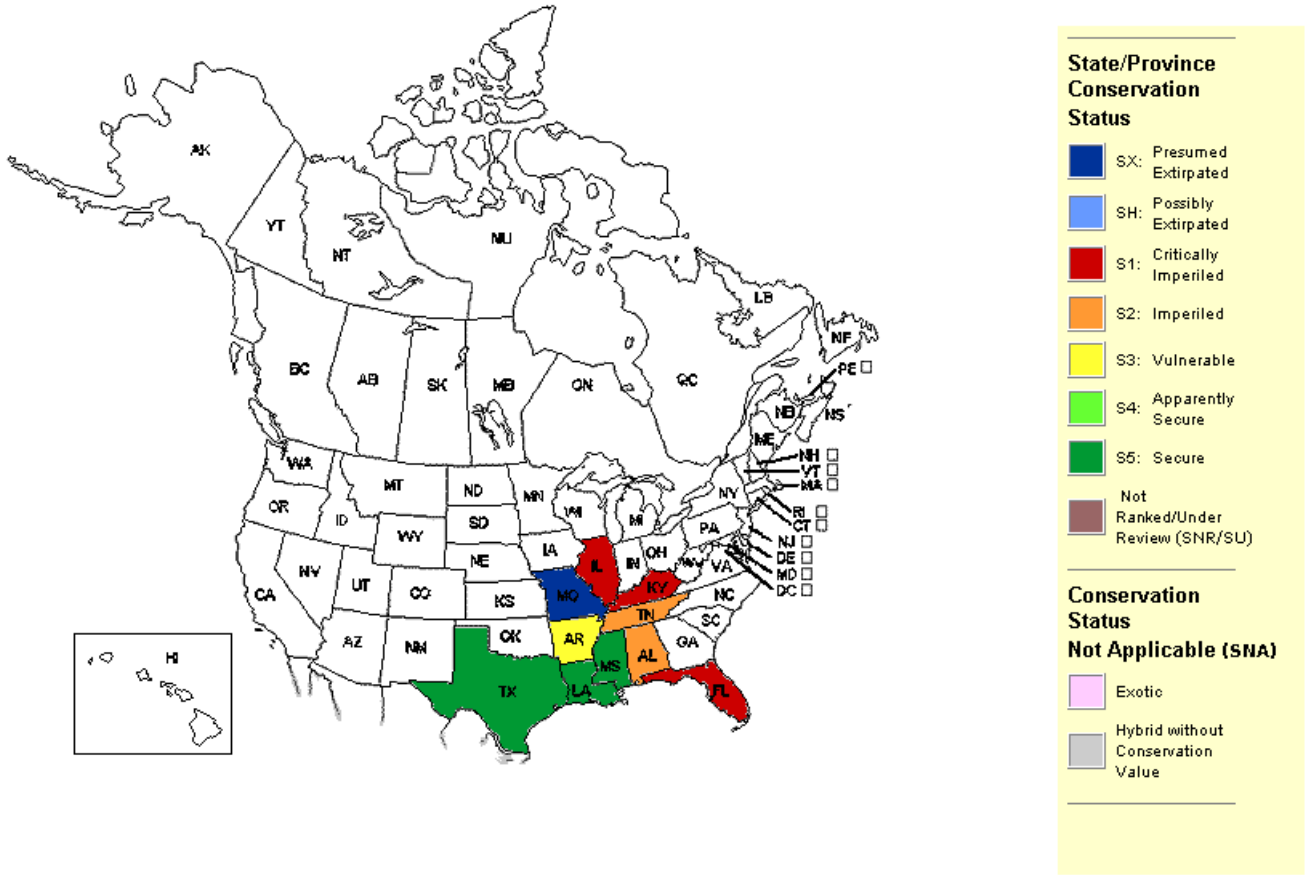
Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



Observed and surveyed with no observation element occurrence locations for respective time periods and all
● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)

No maps produced – single occurrence location is in Union County.

Nerodia cyclopion



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).

Broad-banded watersnake, Nerodia fasciata (Illinois endangered)

Listed as IL E, 12/31/1977
Reason for listing: restricted habitats or low pops in IL;

Nerodia fasciata (Linnaeus)

BROAD-BANDED WATERSNAKE **COLUBRIDAE** **Status:** Endangered in Illinois

Present Distribution: This aquatic species is found from North Carolina to Florida west to eastern Texas and southern Oklahoma and up the Mississippi River valley to the southern tip of Illinois (Conant and Collins 1991). The subspecies *Nerodia fasciata confluens*, the broad-banded watersnake, occurs in Illinois (Conant and Collins 1991).
Former Illinois Distribution: This snake has probably always had a limited distribution within Illinois, being confined to the extreme southern tip of the state. The last documented occurrence for this species in Illinois was at Horseshoe Lake, Alexander County in 1956. Surveys have been unsuccessful in locating this species in the Horseshoe Lake area (Brandon and Morris 1987).
Habitat: The broad-banded watersnake resides in and along the edges of bald cypress-tupelo swamps, river sloughs, and oxbow lakes, and occasionally drainage ditches (Smith 1961, Johnson 1987).
Reason for Status: Overdevelopment of Horseshoe Lake, with the attendant destruction of natural habitat, was probably the major factor contributing to the rarity and possible disappearance of this snake. The decline of this species at Horseshoe Lake closely parallels the river cooter situation at the same locality.
Management Recommendations: Further habitat disturbances at Horseshoe Lake and at similar areas in Alexander County should be kept to a minimum.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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.

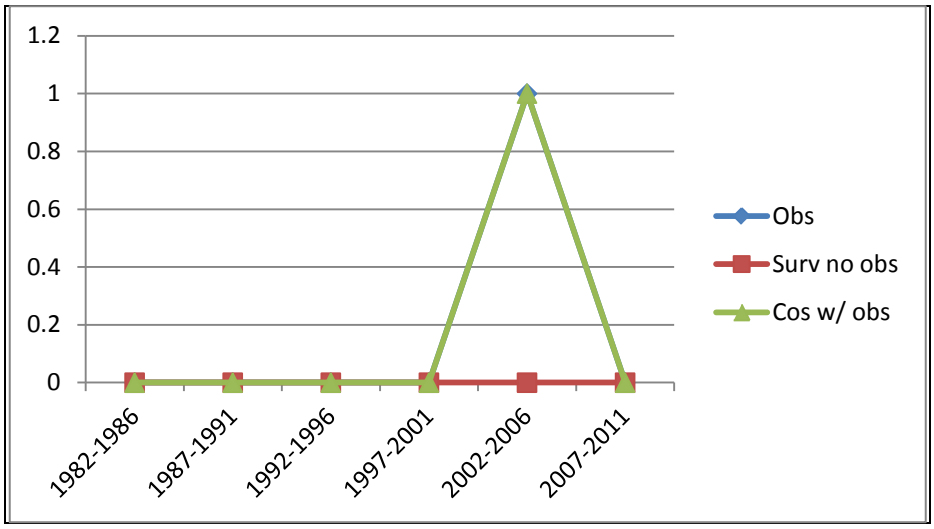
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2004-03-28	1	1	0	1	1	1

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	0	0	0	0	1	0
Surv no obs	0	0	0	0	0	0
Cos w/ obs	0	0	0	0	1	0

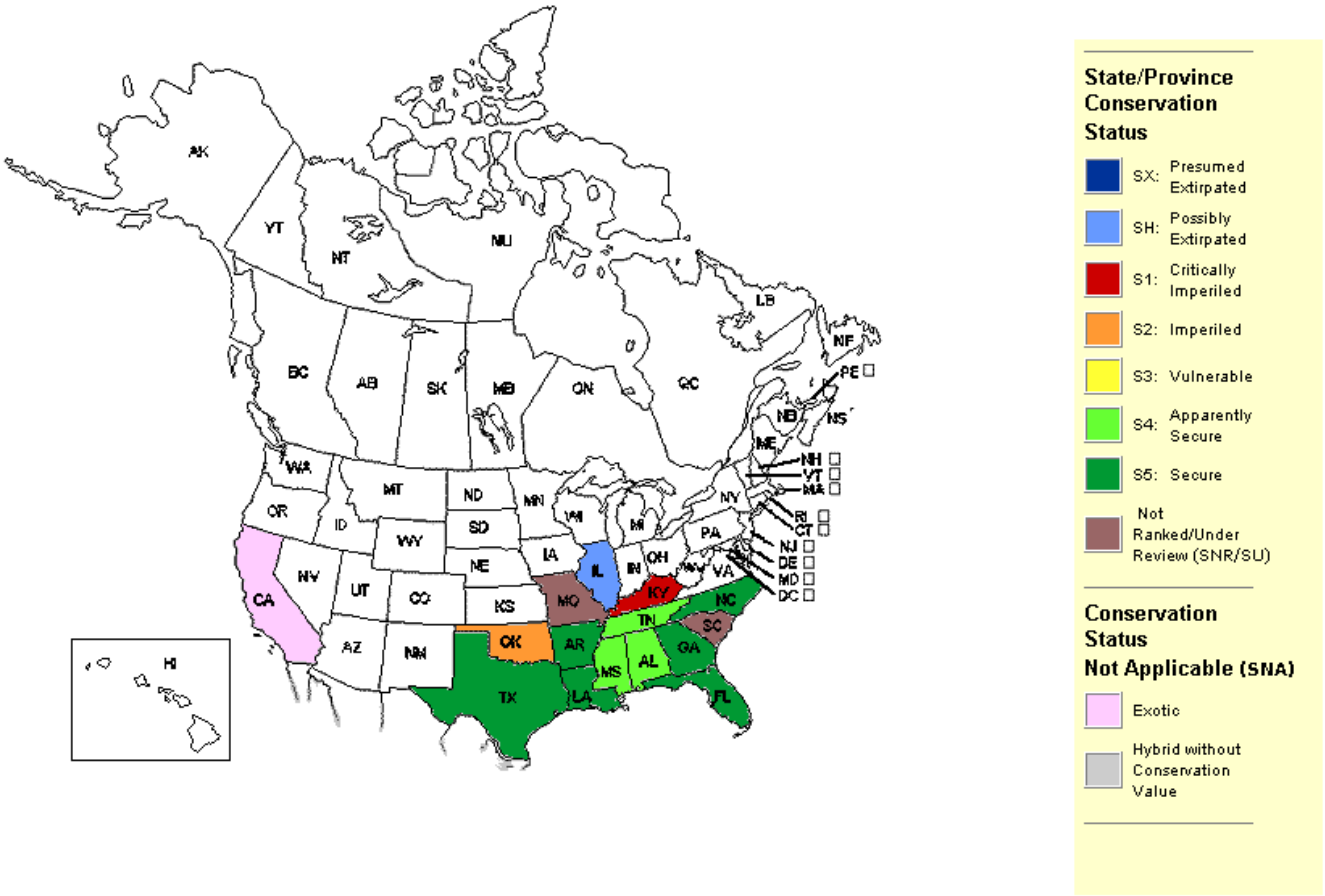
Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



Observed and surveyed with no observation element occurrence locations for respective time periods and all
● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)

No maps produced – single occurrence is located in Massac County.

Nerodia fasciata



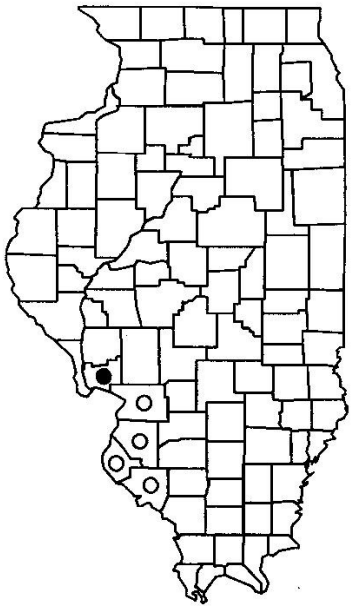
NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed March 2, 2012).

Great plains rat snake, Pantherophis emoryi (Illinois endangered)

Listed as IL T, 12/31/1977; Listed as IL E, 9/1/2004
Reason for listing: restricted habitats or low pops in IL;

Elaphe emoryi (Baird & Girard)

GREAT PLAINS RATSNAKE **COLUBRIDAE** **Status:** Endangered in Illinois



Present Distribution: The Great Plains ratsnake is found throughout much of the south-central United States and northern Mexico (Conant and Collins 1991). In Illinois it is known only from Jersey County south to Randolph County (Smith 1961). Most specimens have been found along the Mississippi River bluffs in Monroe and Randolph counties.
Former Illinois Distribution: In Illinois, the Great Plains ratsnake has probably always been restricted to the Mississippi River bluffs between Jersey and Randolph counties.
Habitat: In the eastern part of its range this snake frequents rocky, open woodlands, and rocky wooded hillsides (Collins 1974, Johnson 1987). Within Illinois it has been found along the bluffs of the Mississippi River in hill prairies and adjacent brushy fields.
Reason for Status: This species occupies such a restricted range and habitat in Illinois that it is particularly vulnerable to habitat destruction, traffic casualties, and excessive collecting.
Management Recommendations: Mining and forest clearing should be closely monitored to prevent damage to Great Plains ratsnake populations. These snakes are economically beneficial, and attempts to apprise the public of this fact and to discourage killing of snakes should be made. Automobile traffic apparently accounts for a high death toll on these snakes.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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.

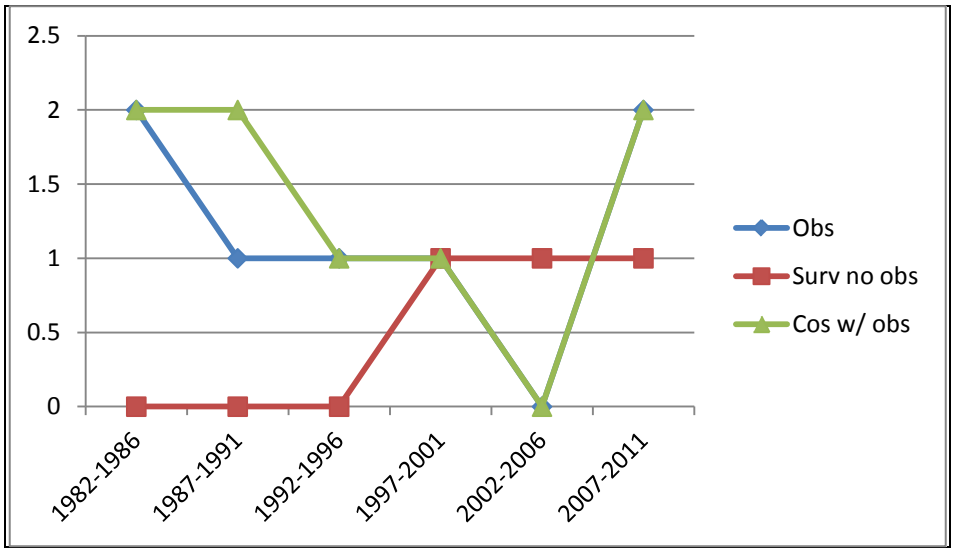
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2011-05-13	3	2	2	6	3	3

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	2	1	1	1	0	2
Surv no obs	0	0	0	1	1	1
Cos w/ obs	2	2	1	1	0	2

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)

1992-1996

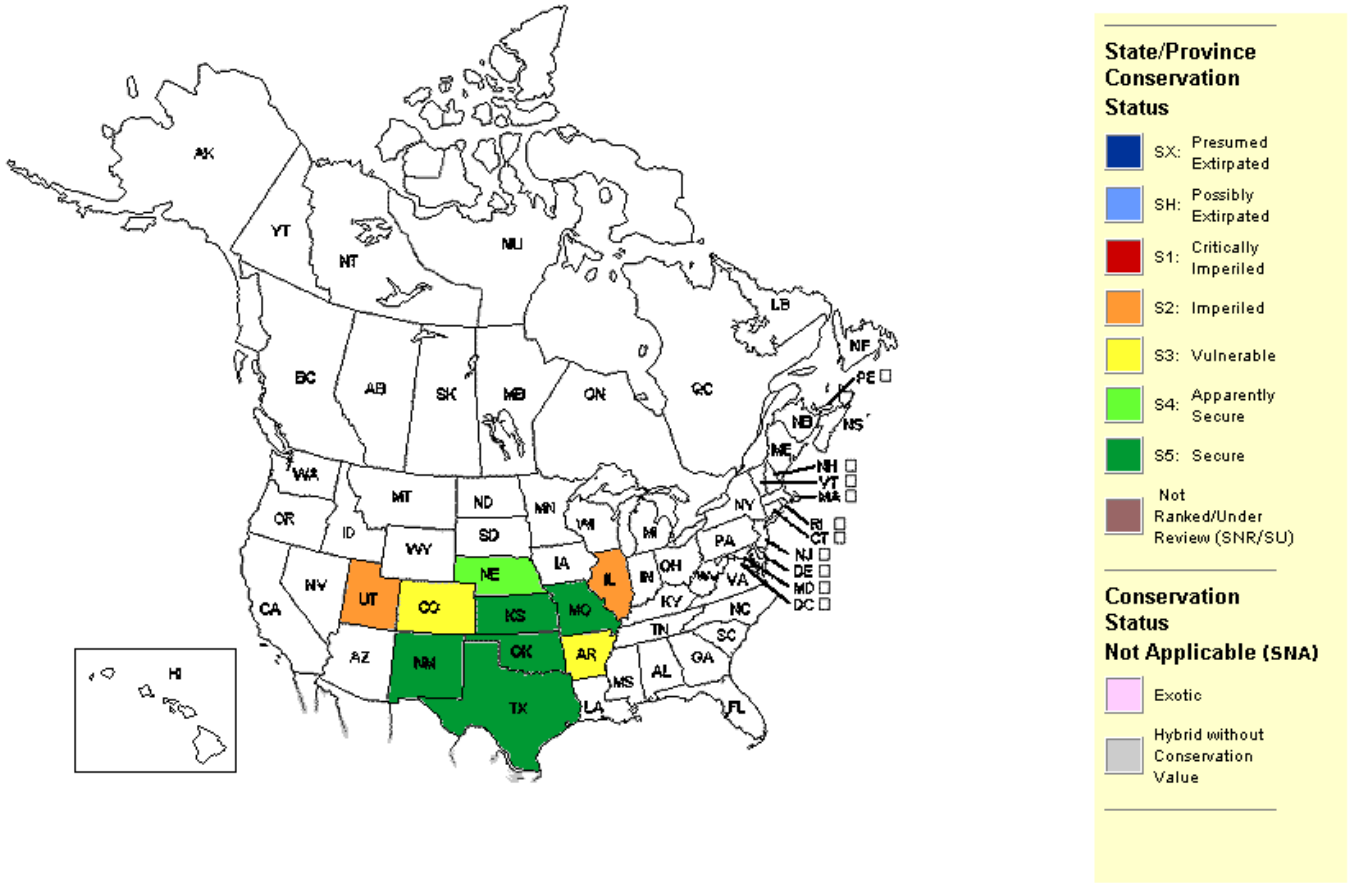
1997-2001

2002-2006

2007-2011

All

Pantherophis emoryi



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).

River cooter, Pseudemys concinna (Illinois endangered)

Listed as IL E, 12/31/1977
Reason for listing: restricted habitats or low pops in IL;

Pseudemys concinna (Le Conte)

RIVER COOTER **EMYDIDAE** **Status:** Endangered in Illinois

Present Distribution: The river cooter is distributed in the southeastern United States, ranging from the Atlantic Coastal Plain west to eastern Texas, Oklahoma, and Nebraska (Conant and Collins 1991, Dreslik 1998). Once thought to be extirpated from Illinois (Morris and Smith 1981), numerous populations have been discovered along the floodplain of the Wabash River (Moll and Morris 1991, Dreslik 1998).
Former Illinois Distribution: The first reported record of the river cooter in Illinois was from the Wabash River at Mt. Carmel, Wabash County (Garman 1890, 1891). The populations at Horseshoe Lake, Alexander County, may have been extirpated when the lake completely dried in the 1930s (Cahn 1937).
Habitat: In Illinois, the optimal habitat for river cooters has been reported as floodplain lakes, sloughs, swamps, oxbows, and rivers (Cahn 1937, Smith 1961, Moll and Morris 1991, Dreslik 1998). Because the cooter is herbivorous, wetlands with abundant macrophytes are necessary (Smith 1961, Dreslik 1996, 1999).
Reason for Status: The combination of wetland drainage for cultivation, pollution, channelization, and levee construction are responsible for range reduction in this species (Dreslik 1998, Dreslik *et al.* 1998, Phillips *et al.* 1999). Because the species is relatively slow growing, reaches maturity at large body sizes, and may be long-lived (Dreslik 1997), populations may be easily extirpated by constant and severe habitat alterations (Congdon *et al.*1993).
Management Recommendations: Dreslik (1998) stated that too few data were present on the life history and ecology of the river cooter to provide concrete management and conservation recommendations. A long-term life history study is underway on one population in southeastern Gallatin County (Dreslik 1996, 1997). In Illinois, no extant populations of river cooters are known to occur on protected land.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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.

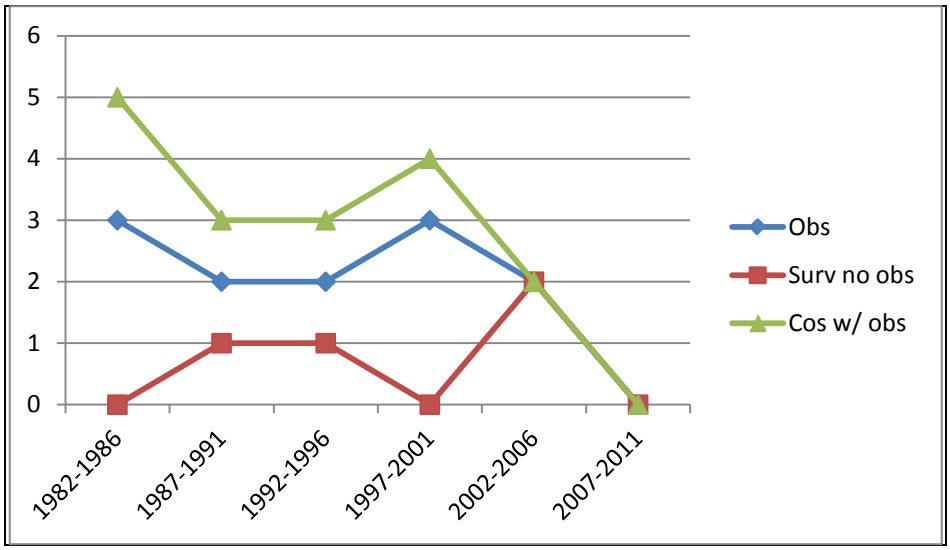
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2006-08-16	6	1	0	11	6	3

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

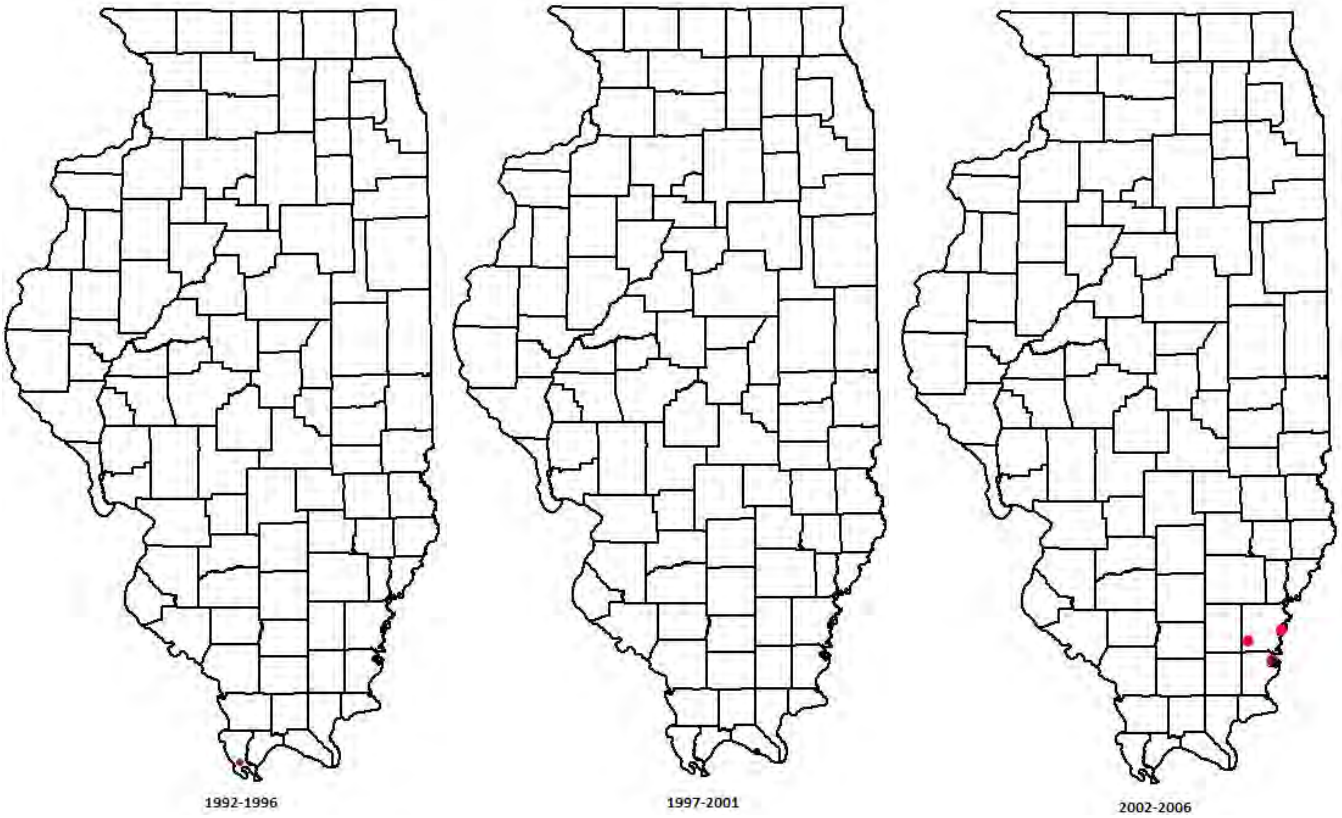
	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	3	2	2	3	2	0
Surv no obs	0	1	1	0	2	0
Cos w/ obs	5	3	3	4	2	0

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



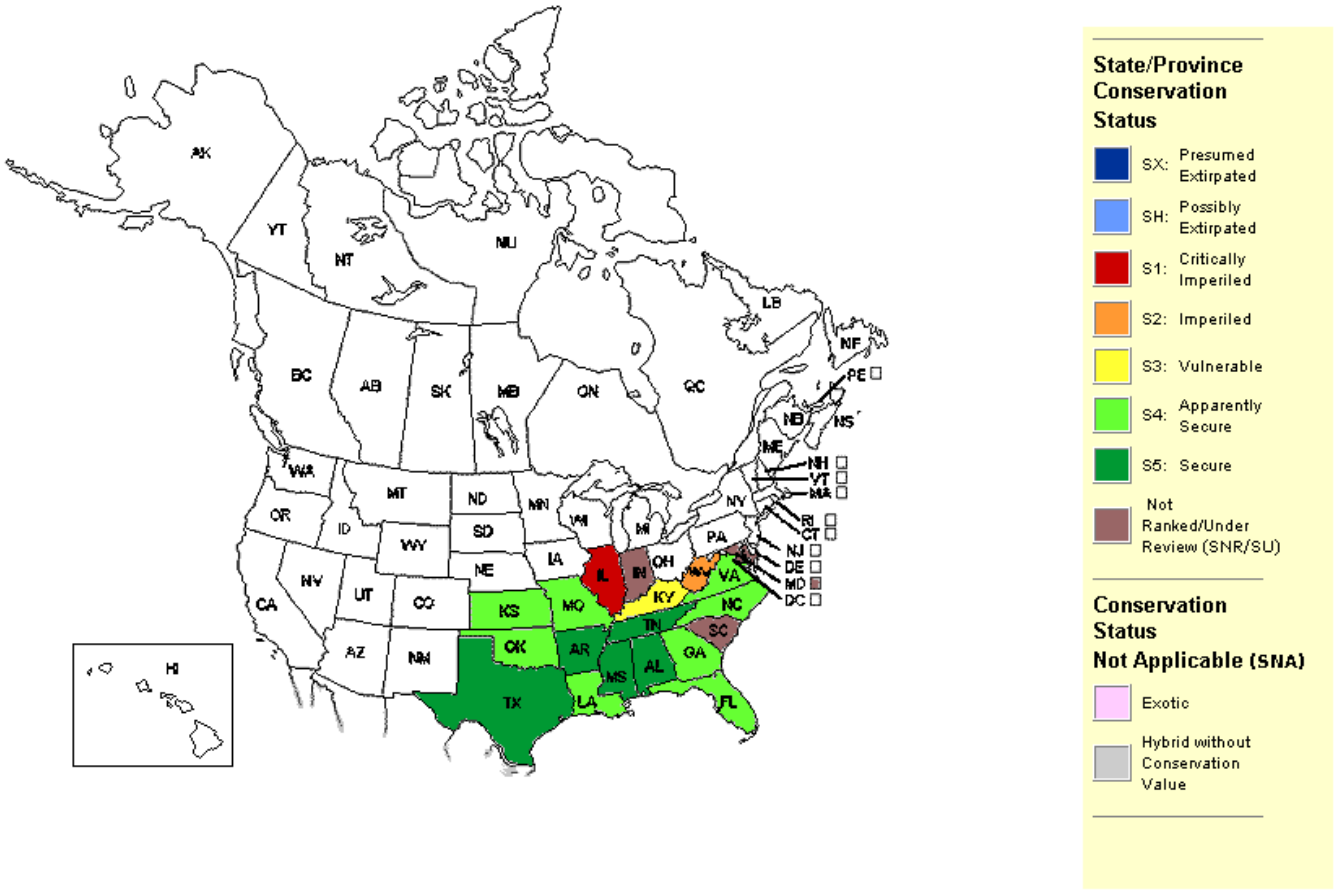
Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)



No obs or surv w/ no obs 2007-2011 - no map produced

Pseudemys concinna



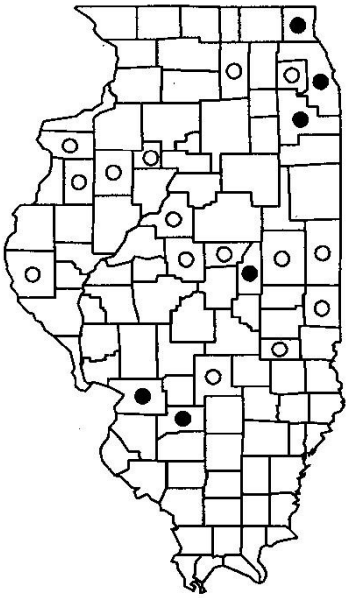
NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed March 2, 2012).

Eastern massasauga, Sistrurus catenatus (Illinois endangered)

Listed as IL E, 1/18/1994
Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures;

Sistrurus catenatus (Rafinesque)

EASTERN MASSASAUGA **VIPERIDAE** **Status:** Endangered in Illinois



Present Distribution: The eastern massasauga occurs from central New York and southern Ontario to Iowa and Missouri (Ernst and Barbour 1989). This snake is generally rare and local throughout most of its range. Presently, there are probably only four to five extant populations in Illinois.
Former Illinois Distribution: Smith (1961) listed all of Illinois, except for the extreme southern part of the state, as potential range of this species. However, reliable historic records are available from only 21 Illinois counties. Fourteen of these records are from before 1950 and seven are pre-1900 (Beltz 1992).
Habitat: The eastern massasauga is usually found in old fields, floodplain forests, marshlands, and bogs (Phillips *et al.* 1999).
Reason for Status: Populations of this species have declined greatly in Illinois. Only three of the state's historical populations are believed to be extant (Phillips *et al.* 2003) and several of these are in jeopardy.
Management Recommendations: This species must be protected from indiscriminate killing and automobile traffic.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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.

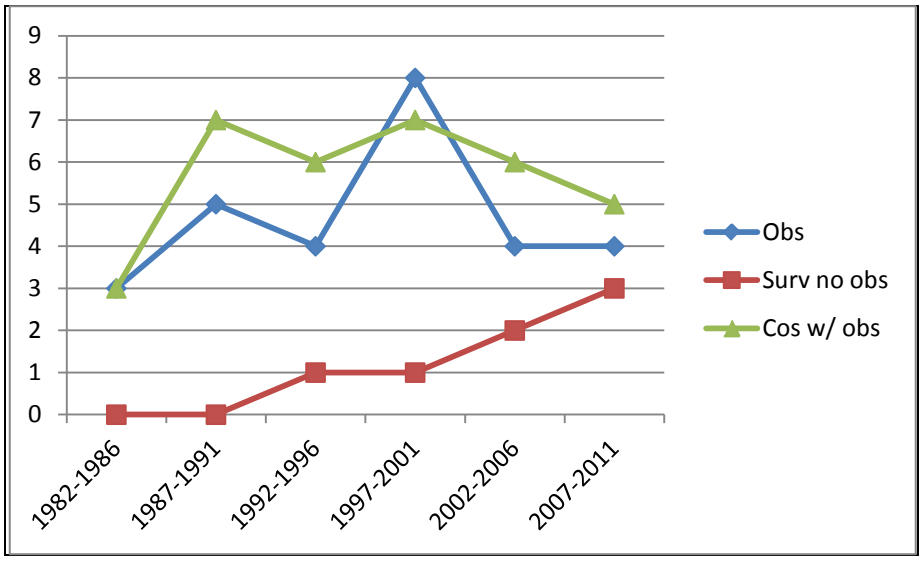
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2011-10-05	13	4	4	17	11	7

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

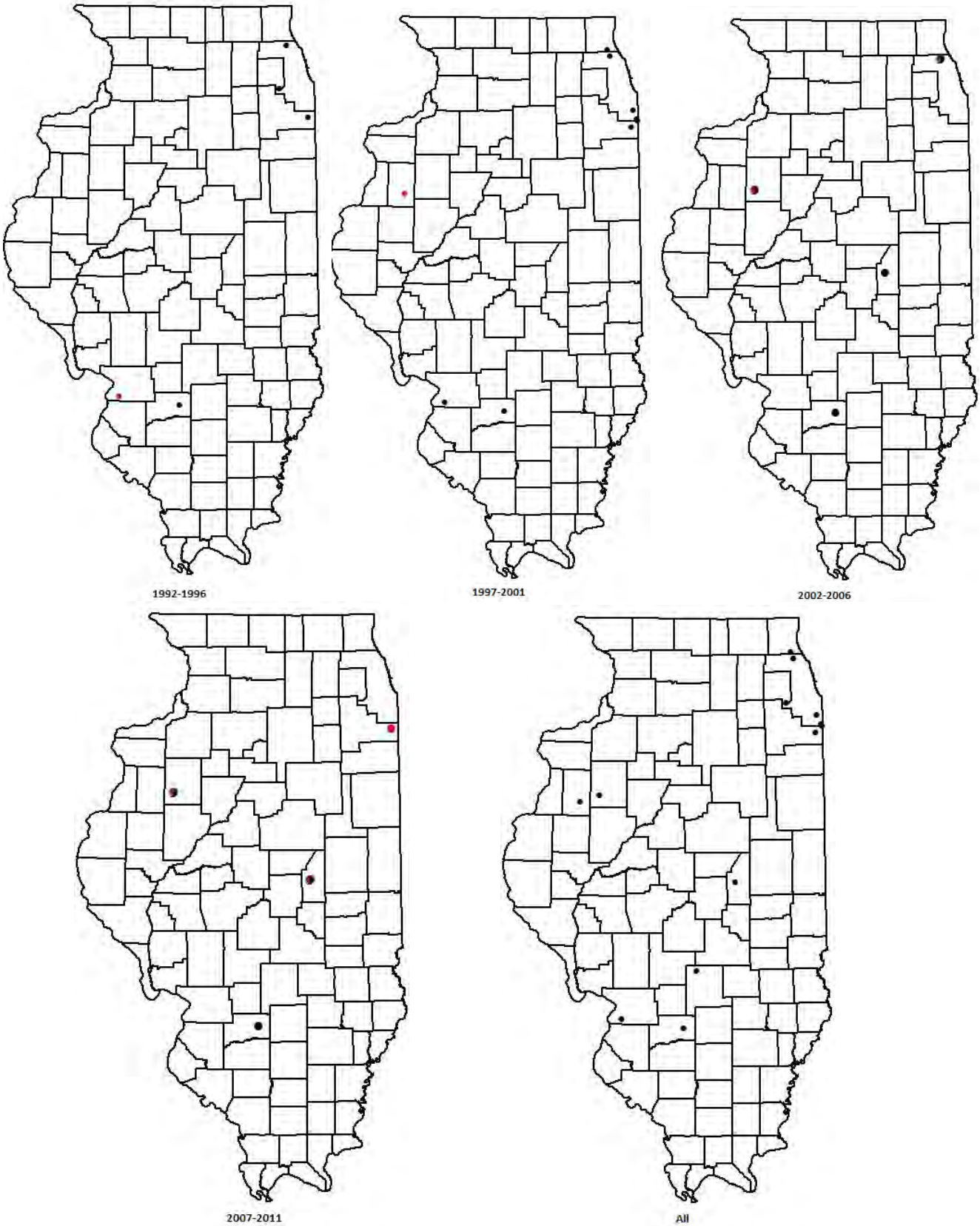
	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	3	5	4	8	4	4
Surv no obs	0	0	1	1	2	3
Cos w/ obs	3	7	6	7	6	5

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

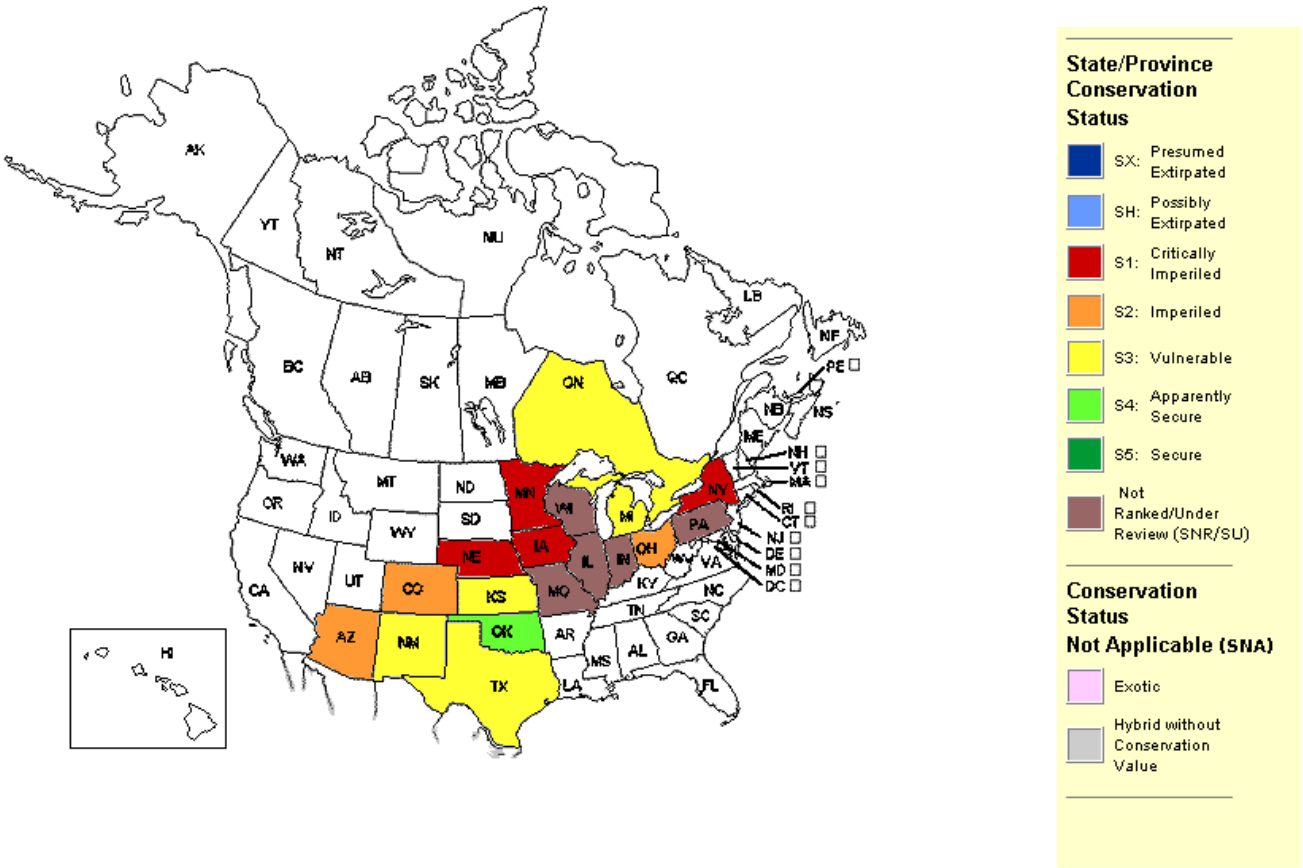


Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)



Sistrurus catenatus



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).

Flathead snake, Tantilla gracilis (Illinois threatened)

Listed as IL T, 4/26/1999
Reason for listing: restricted habitats or low pops in IL;

Tantilla gracilis Baird and Girard

FLATHEAD SNAKE **COLUBRIDAE** **Status:** Threatened in Illinois

Present Distribution: The flathead snake occurs from southwest Illinois, Missouri, and eastern Kansas to southern Texas and northern Mexico (Conant and Collins 1991). In Illinois, it is restricted to the bluffs along the Mississippi River in St. Clair, Randolph, Monroe, and Union counties (Smith 1961).
Former Illinois Distribution: In Illinois, the flathead snake has always been restricted to the southern Mississippi River bluffs (Smith 1961).
Habitat: The flathead snake is a fossorial species that inhabits rocky prairies, rocky, wooded limestone hillsides, and grass brushlands (Smith 1961).
Reason for Status: The flathead snake has a very restricted range in Illinois and occurs in an area that is vulnerable to habitat destruction.
Management Recommendations: Habitat disturbances such as mining and forest clearing should be avoided in areas known to contain flathead snakes.

KEY

The narrative for each species is accompanied by a map of Illinois with county outlines shown. Counties from which the species in 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:

Nÿboer, 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.

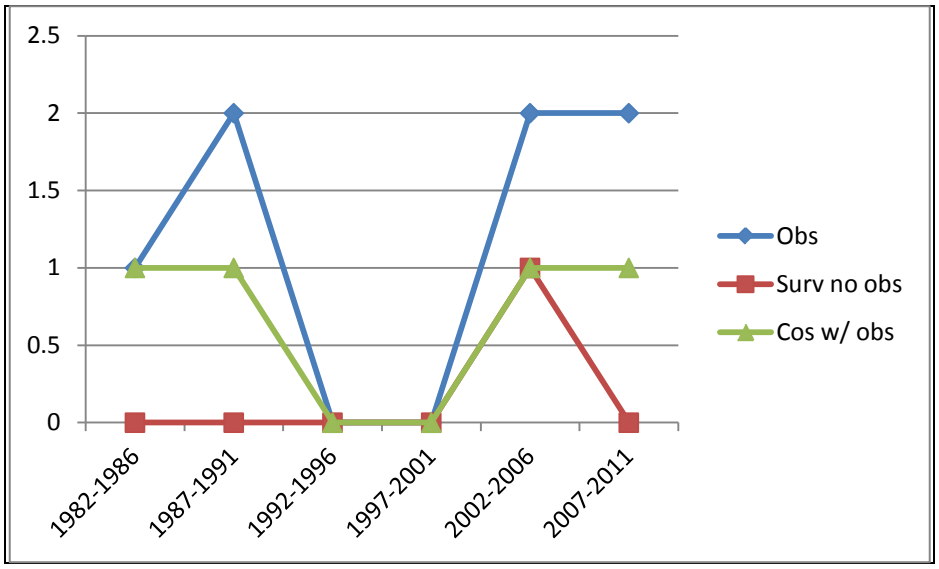
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2011-05-13	5	3	4	5	3	1

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	1	2	0	0	2	2
Surv no obs	0	0	0	0	1	0
Cos w/ obs	1	1	0	0	1	1

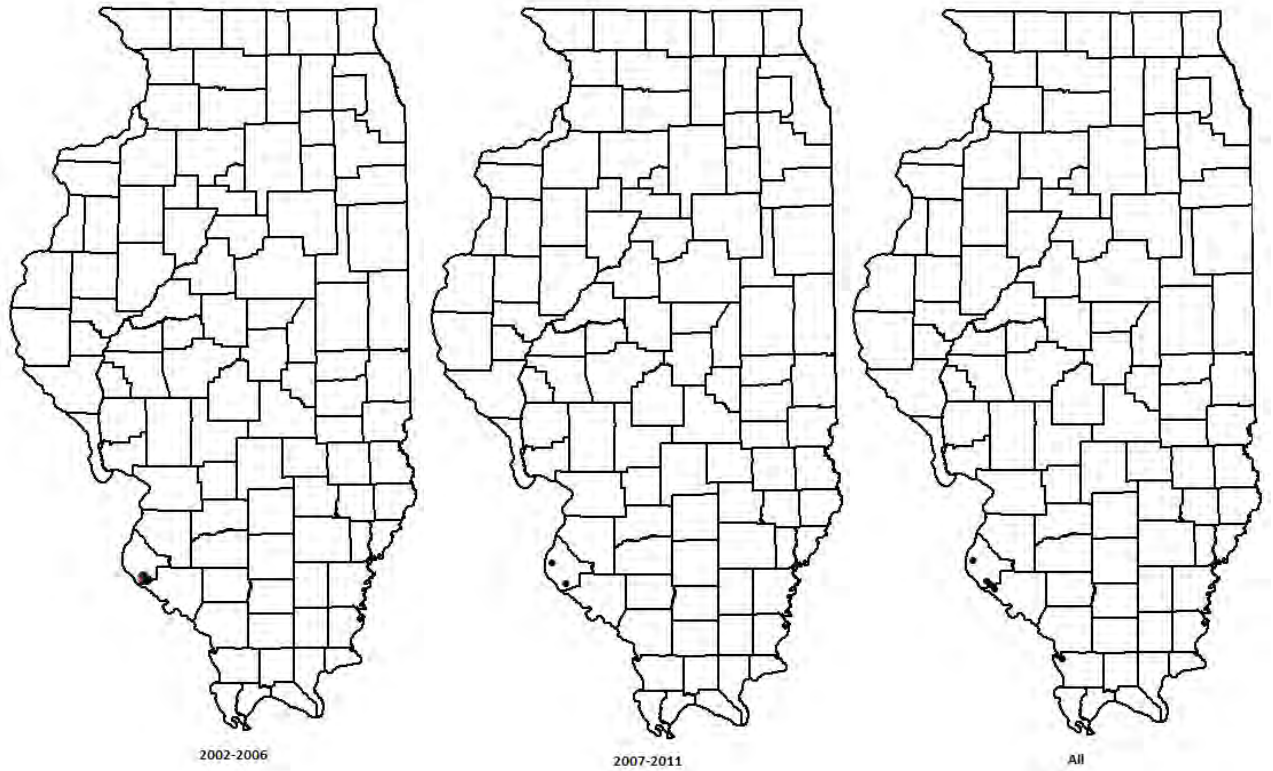
Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



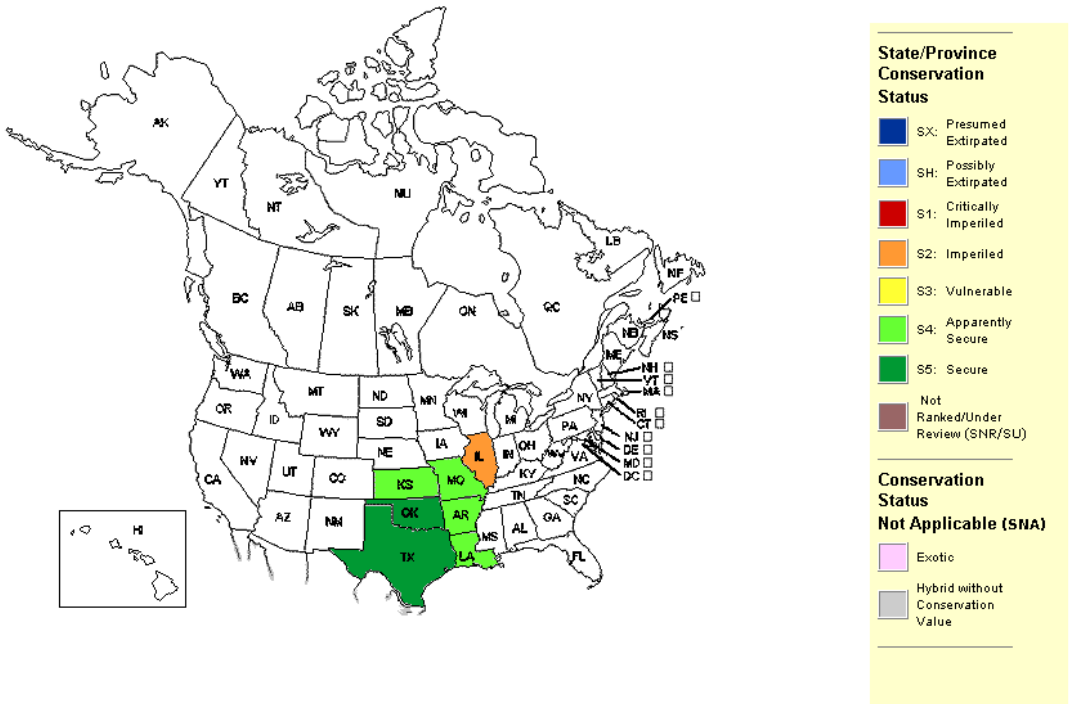
Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)

No obs or surv w/ no obs 1992-1996 or 1997-2001 - no maps produced



Tantilla gracilis



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).

Ornate box turtle, Terrapene ornata (Illinois threatened)

Listed as IL T, 10/30/2009
Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures

Terrapene ornata **(Agassiz, 1857)**
Ornate Box Turtle **EMYDIDAE**

Illinois Status: Threatened
Federal Status: None
Present Distribution: Indiana to southeastern Wyoming, south through Texas and into the coastal prairies of Louisiana, then discontinuous to the northwest (Conant and Collins 1991). The Illinois Natural Heritage Database documents recent (post-2000) records for this species from Bond, Carroll, Cass, Clay, Clinton, Effingham, Franklin, Iroquois, Jasper, Jo Daviess, Kankakee, Lee, Macoupin, Marion, Menard, Ogle, Pike, Randolph, Scott, Tazewell, and Winnebago counties. Six populations are protected in Illinois Nature Preserves and/or Land and Water Preserves and five additional populations are found on State Parks, Recreation Areas, or Fish and Wildlife Areas (IDNR 2010).
Former Illinois Distribution: Phillips et al (1999) report this species from 44 counties across the state, except for extreme southern Illinois, prior to 1999, with 38 counties only known for pre-1980 records.
Habitat: Prairies and old field openings of former prairies, with soils other than black muck (Phillips et al 1999).
Reason for Status: In several of the disjunct range segments (e.g., Kanakakee Sands) where this species was formerly common, it is now very rarely encountered and several counties have no recent records. Areas in particular need of surveys include large portions of the Southern Till Plain and in the sand areas where considerable habitat on private land may be present but where recent occurrences are lacking. Threats include habitat loss, roads, and unsustainable collection by turtle enthusiasts.
Management Recommendations: Protection and management of habitat, as well as additional surveys and population assessment to verify current status and distribution, will help conserve this species in Illinois. Additionally, this species is admired by the public and resource managers alike, and it would likely be easy to mobilize recovery efforts for it.

Key
The narratives in this section are accompanied by a map of Illinois with county outlines shown. Counties from which the species is known to occur within the last 10 years (post-2000) according to the Illinois Natural Heritage Database are shown as a solid circle; county records which may no longer be extant (pre-2000) are shown as an open circle. An example of a species treatment is as follows:

Citation: Mankowski, A., editor. 2010. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 4 - 2009 and 2010 Changes to the Illinois List of Endangered and Threatened Species. Illinois Endangered Species Protection Board, Springfield, Illinois. iii + 38 pp.

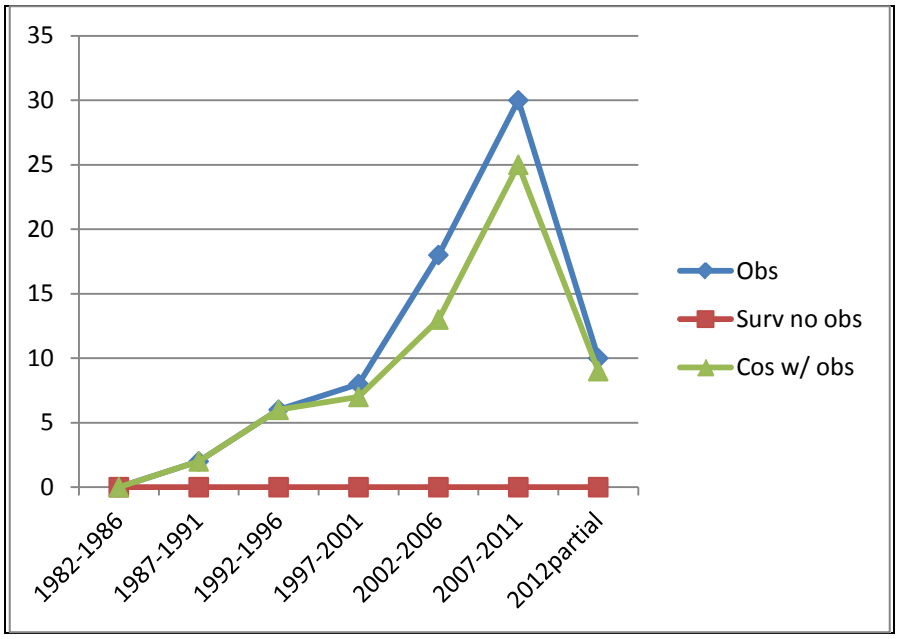
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-06-18	48	38	13	50	31	28

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

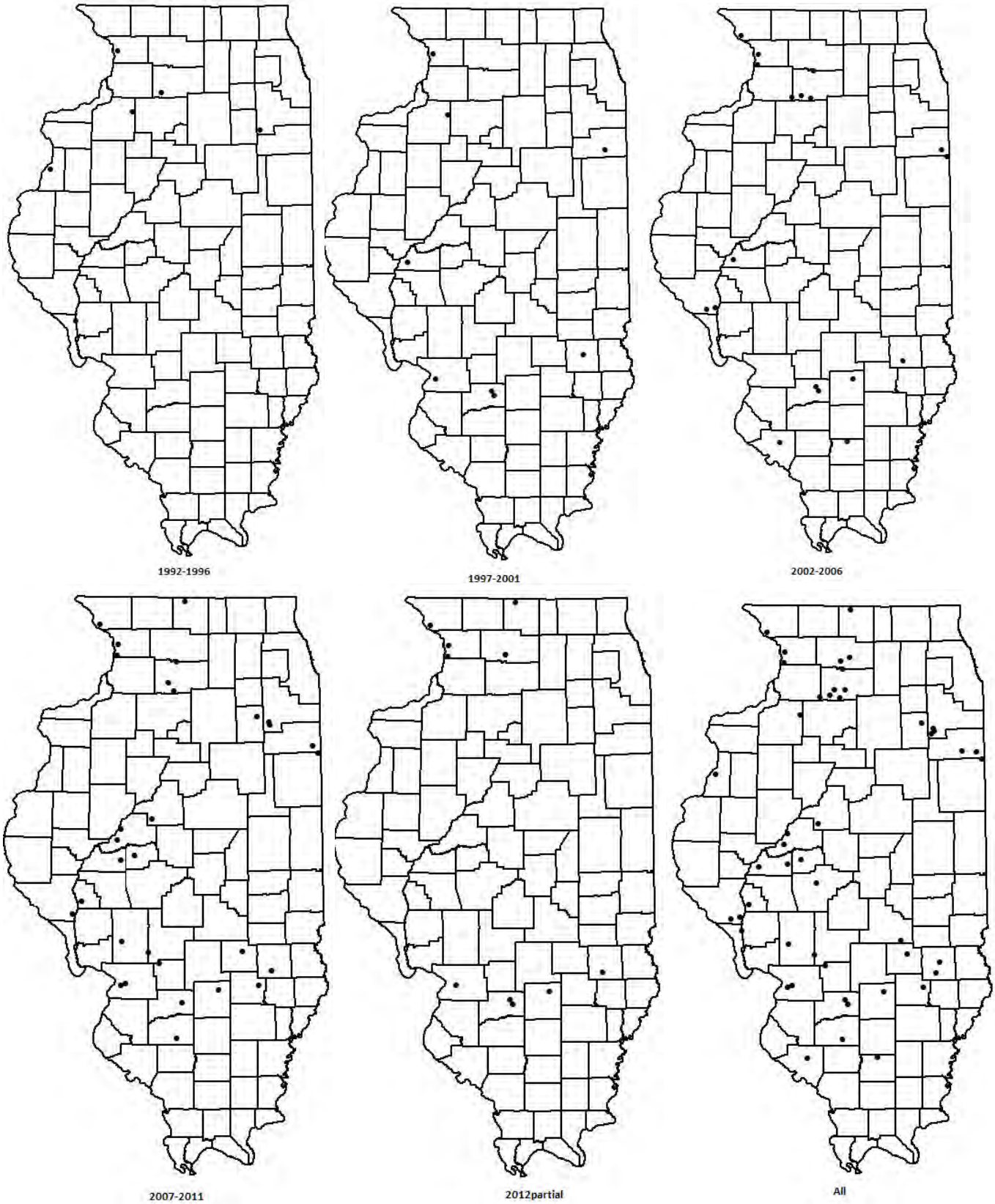
	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012partial
Obs	0	2	6	8	18	30	10
Surv no obs	0	0	0	0	0	0	0
Cos w/ obs	0	2	6	7	13	25	9

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

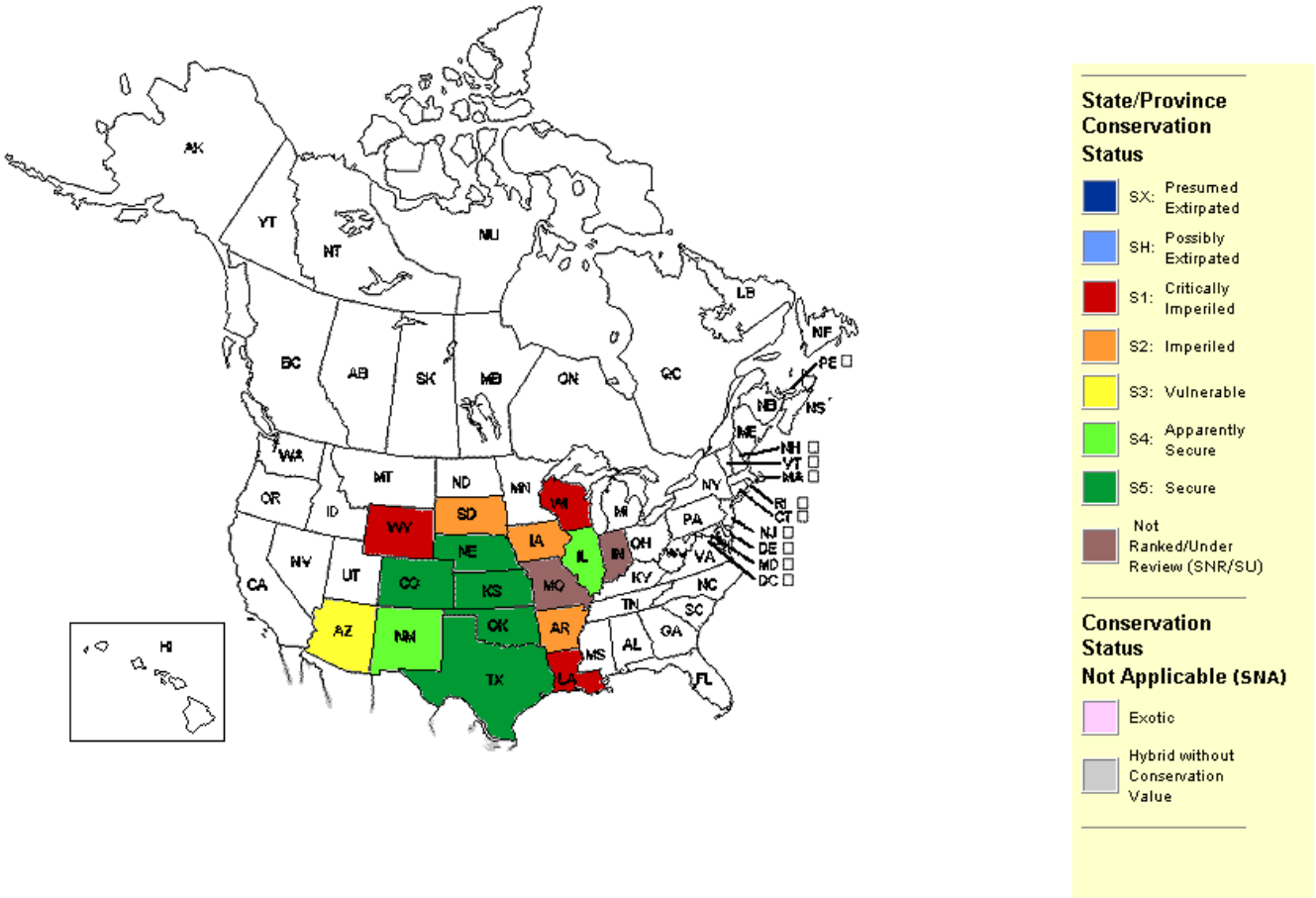


Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)



Terrapene ornata



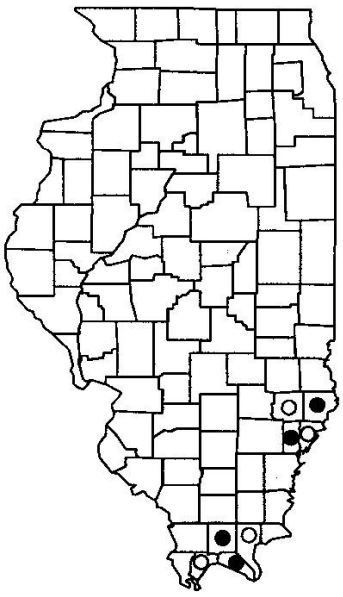
NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed March 2, 2012).

Eastern ribbonsnake, Thamnophis sauritus (Illinois threatened)

Listed as IL E, 12/31/1977; Listed as IL T, 9/1/2004
Reason for listing: restricted habitats or low pops in IL;

Thamnophis sauritus (Linnaeus)

EASTERN RIBBONSNAKE **COLUBRIDAE** **Status:** Threatened in Illinois



Present Distribution: The eastern ribbonsnake occupies much of the United States east of the Mississippi River; however, it is absent from large areas in northern Michigan, Indiana, Illinois, Pennsylvania, West Virginia, Kentucky, and Tennessee (Conant and Collins 1991). Presently both the northern subspecies of the ribbonsnake (*Thamnophis sauritus septentrionalis*) and the eastern subspecies of the ribbonsnake (*Thamnophis sauritus sauritis*) occur in Illinois. Ribbonsnakes are presently known to occur in five localities in four Illinois counties, but it is possible that they may also occur in Wabash and Iroquois counties (Brandon and Morris 1988).
Former Illinois Distribution: Because the eastern ribbonsnake can utilize a variety of undisturbed habitats, its range in former times may have included a number of counties in southeastern Illinois (Smith 1961).
Habitat: Eastern ribbonsnakes are semi-aquatic and utilize a variety of natural environments, seldom wandering far from streams, ponds, bogs, or swamps (Conant and Collins 1991). Minton (1972) specifies three conditions necessary to support this species in Indiana: quiet, shallow water; low, dense plant growth; and abundant sunlight.
Reason for Status: This species is extremely rare in Illinois. Presumably, drainage of wetlands and agricultural practices account for the decline of this species.
Management Recommendations: Existing Illinois populations should be protected. A more thorough search of potential habitat in Wabash and Iroquois counties is needed. The most serious threat to this species is probably reduction of sluggish bodies of water by clearing and draining marshland.

KEY

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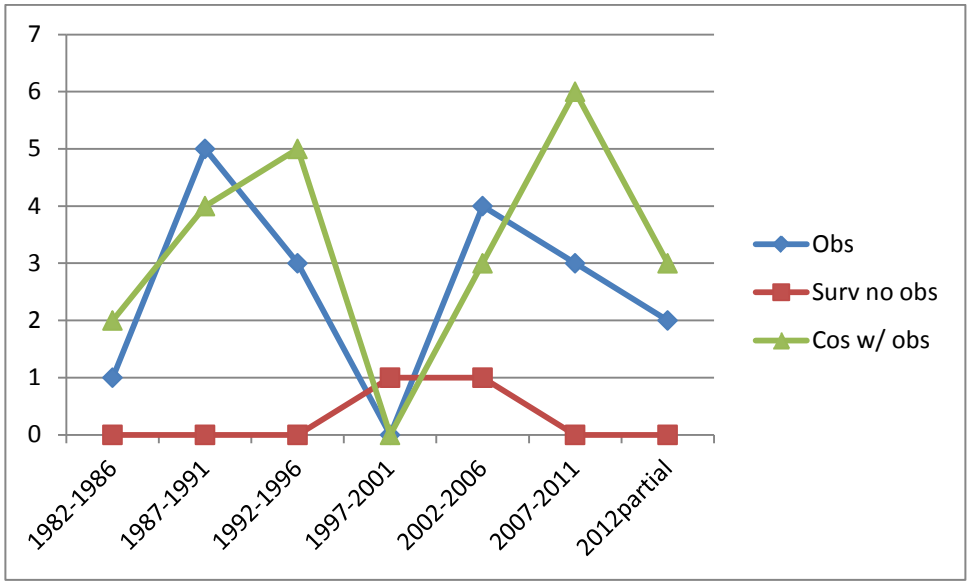
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2012-05-16	10	7	1	11	8	7

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

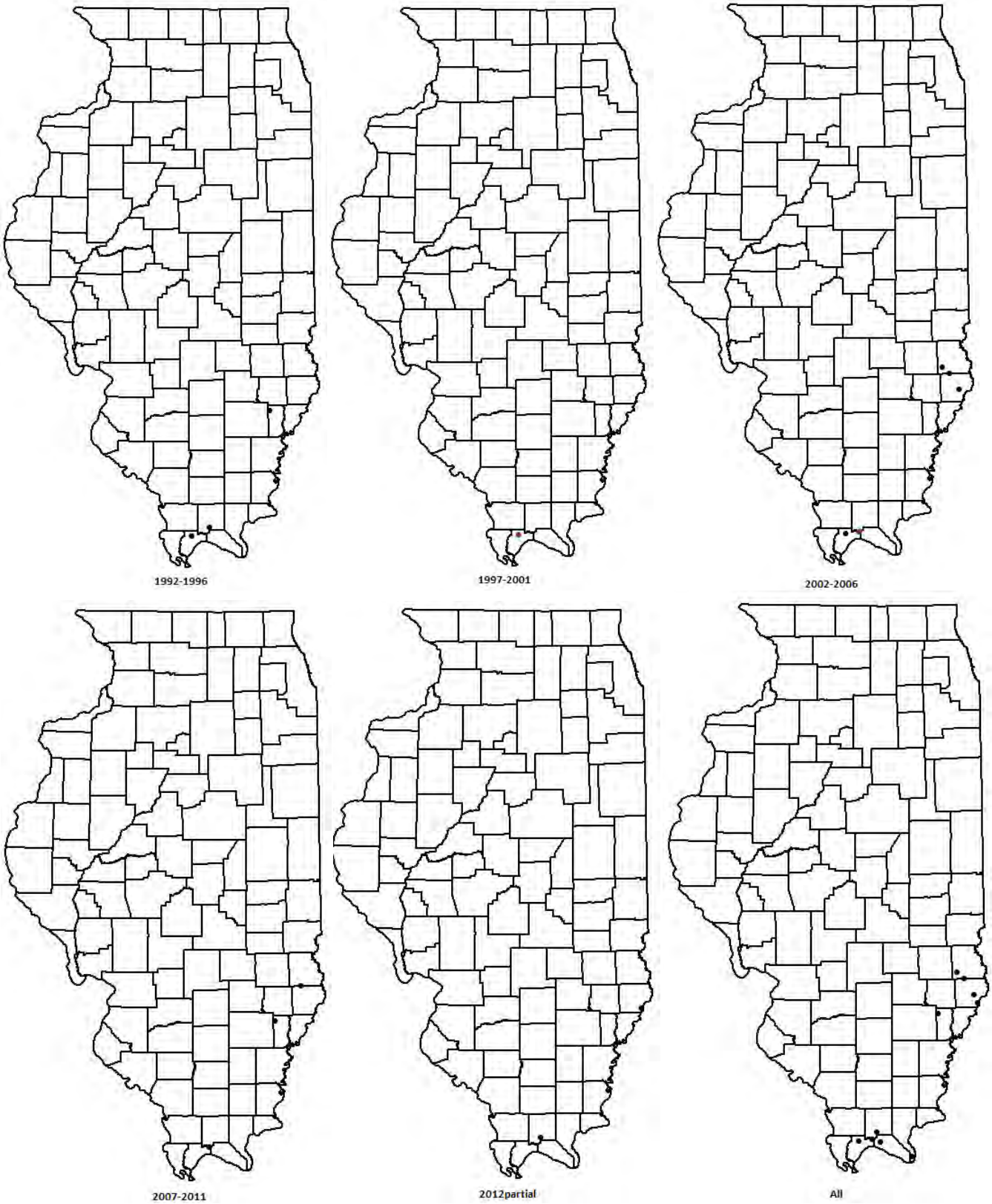
	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011	2012partial
Obs	1	5	3	0	4	3	2
Surv no obs	0	0	0	1	1	0	0
Cos w/ obs	2	4	5	0	3	6	3

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

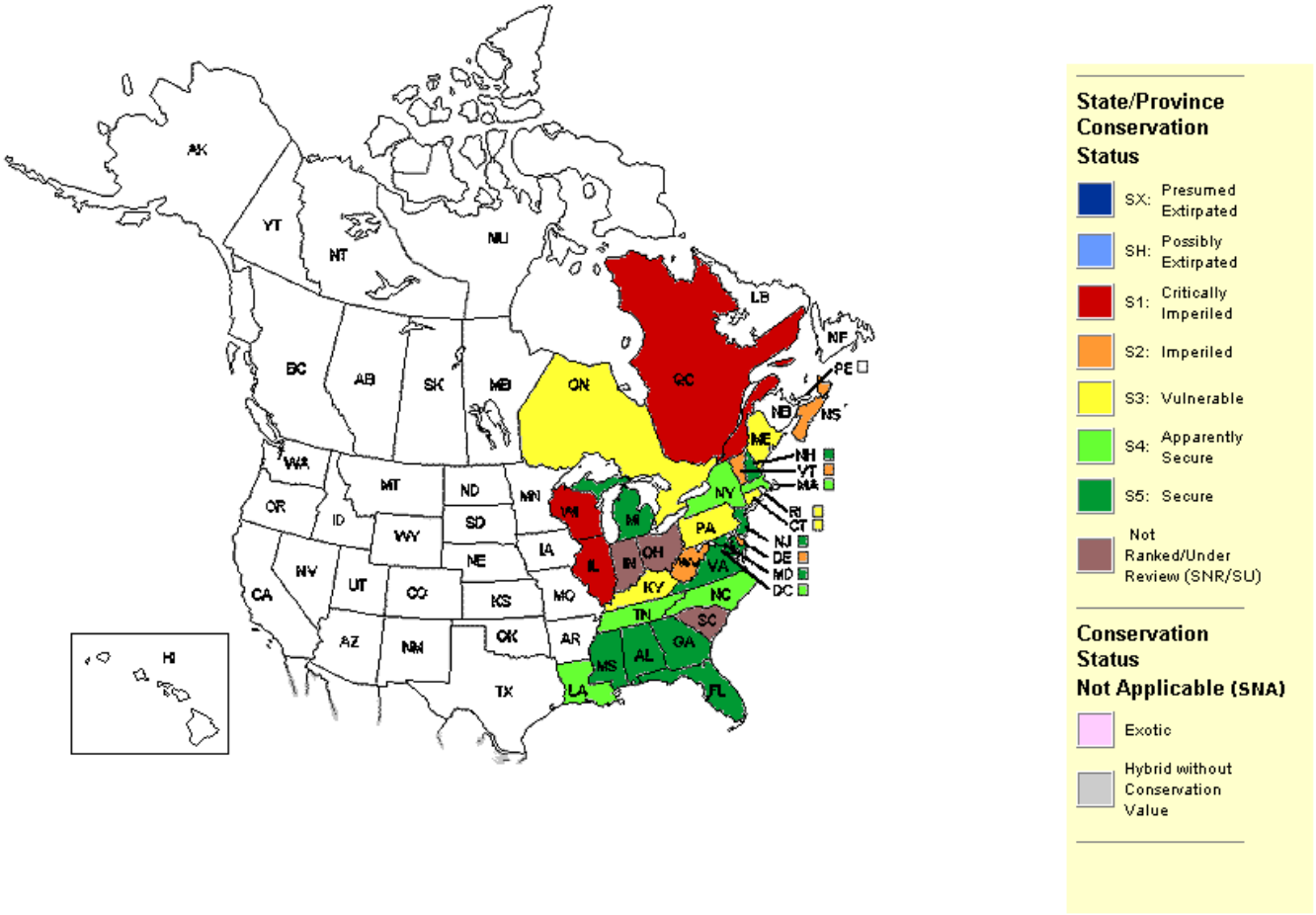


Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)



Thamnophis sauritus



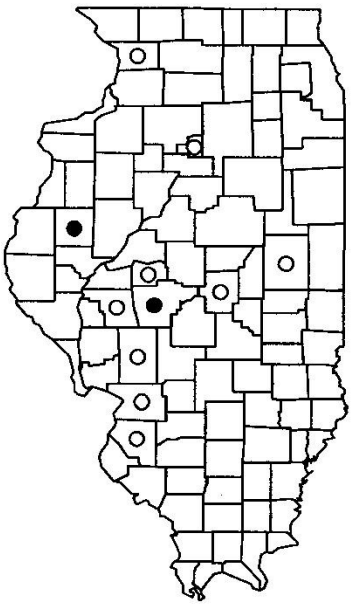
NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life (web application). Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed March 2, 2012).

Lined snake, Tropidoclonian lineatum (Illinois threatened)

Listed as IL T, 9/1/2004
Reason for listing: formerly widespread, but nearly extirpated from IL due to habitat destruction, collecting, or other development pressures;

Tropidoclonion lineatum (Hallowell)

LINED SNAKE **COLUBRIDAE** **Status:** Threatened in Illinois



Present Distribution: The lined snake ranges in central United States from southeastern South Dakota to south central Texas, west through the Oklahoma panhandle to central Colorado and northeastern New Mexico (Conant and Collins 1991). Disjunct populations occur to the east in Missouri, Iowa, and Illinois. In Illinois this species is presently known from only two viable, populations in the northwestern part of the state. Multiple recent visits to a third known population sites has failed to yield any snakes.
Former Illinois Distribution: Historically the lined snake has been reported from at least ten counties mostly in the central part of Illinois (Phillips *et al.* 1999).
Habitat: This secretive and semifossorial nocturnal snake subsists almost entirely on earthworms. In Illinois it occurs in grasslands and urban lots in former prairie lands, where it is found under rocks, logs, leaves, boards, and other debris (Phillips *et al.* 1999).
Reason For Status: The lined snake has never been common in Illinois. It is presently known from two counties in the state, a reduction from ten historical county records from before 1980. The known populations are scattered, mostly in vacant lots in urban areas with no protection.
Management Recommendations: Efforts to monitor this secretive species should continue. Areas were this species is known to occur should be protected from development and other disturbances that may adversely affect this species.

KEY

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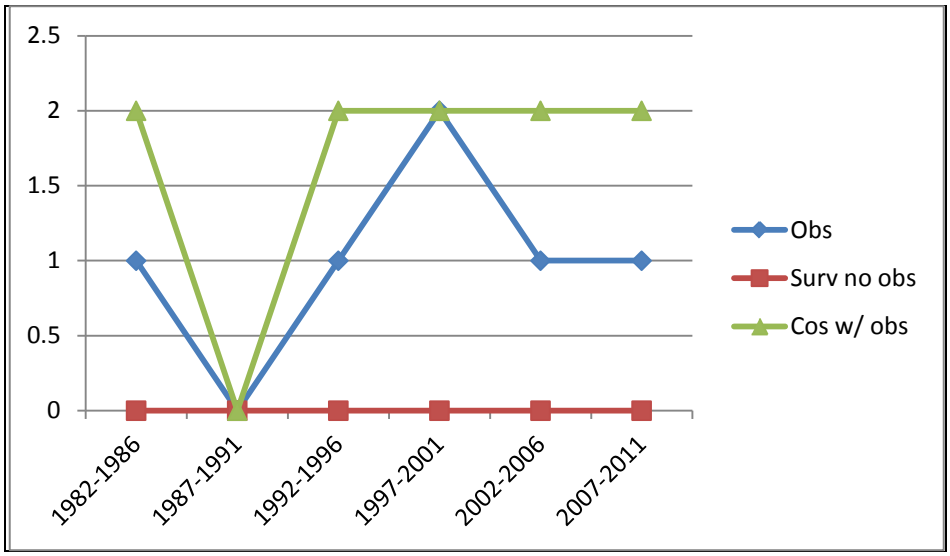
Illinois – Natural Heritage (Biotics 4) Database – last updated, August 2012
(EO = element occurrence and is roughly equivalent to one or more local individuals)

Last Observation	Total # Eos	Total seen since Jan 2002	# protected occurrences	# topo quads	# Counties	# Counties since 2002
2009-06-04	9	1	0	6	6	4

Observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals

	1982-1986	1987-1991	1992-1996	1997-2001	2002-2006	2007-2011
Obs	1	0	1	2	1	1
Surv no obs	0	0	0	0	0	0
Cos w/ obs	2	0	2	2	2	2

Trends for numbers of observed EOs, surveyed with no observation EOs, and counties with observations, for 5-year intervals



Observed and surveyed with no observation element occurrence locations for respective time periods and all

● = observed; ● = surveyed with no observation (larger dots are used in maps when a location is both observed and surveyed with no observation for the period)

1992-1996

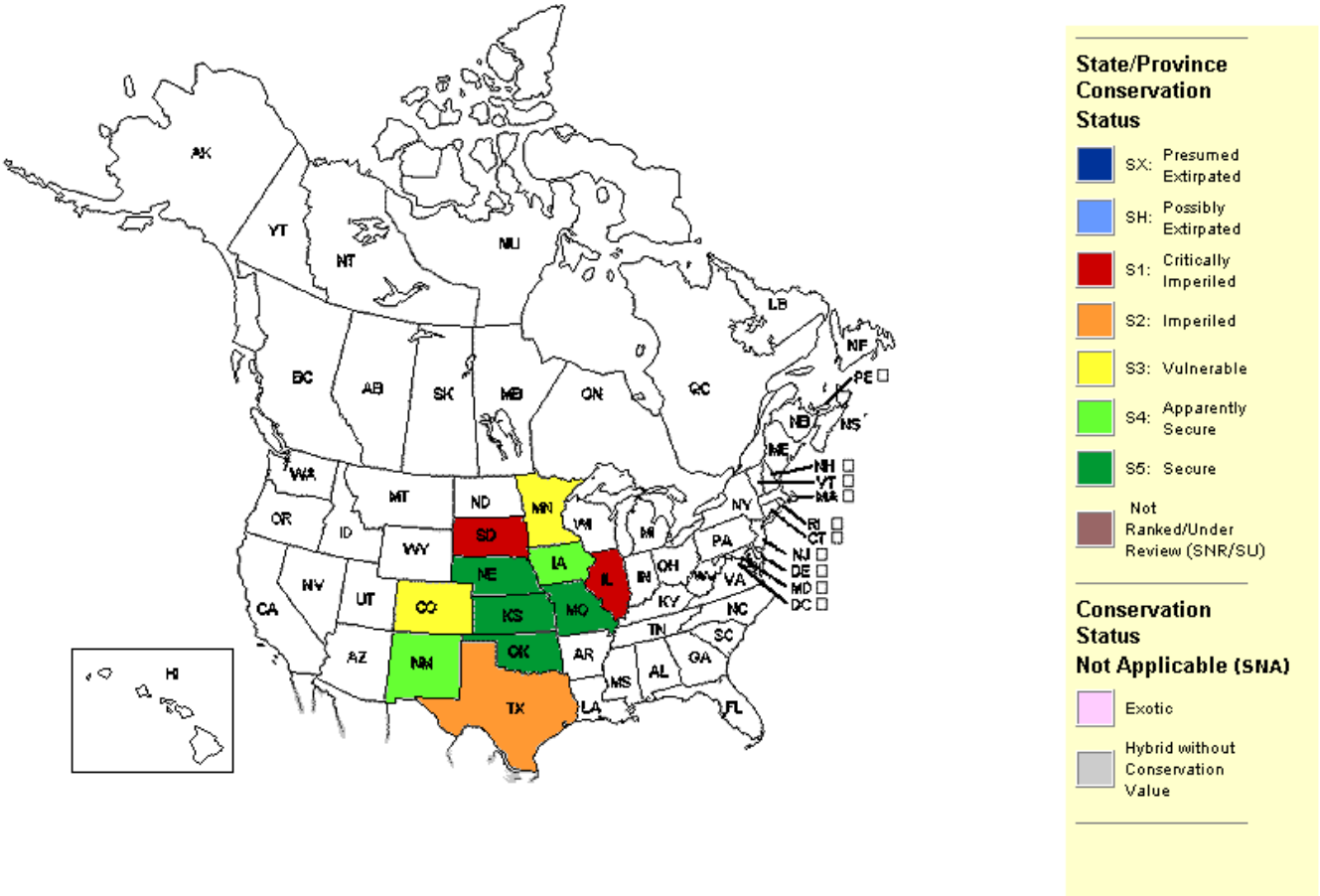
1997-2001

2002-2006

2007-2011

All

Tropidoclonion lineatum



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).

Recommendations for species to be added as endangered or threatened (if any)

Staff recommendation: no recommendations for species to be added as endangered or threatened.