State of Illinois
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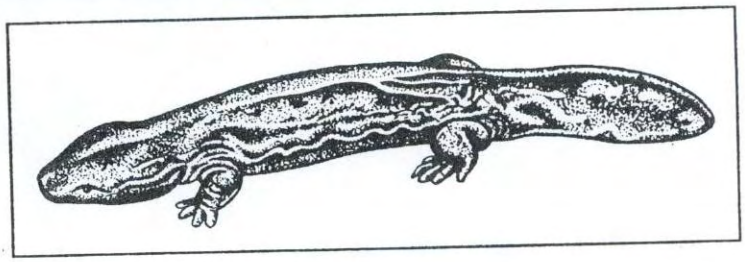
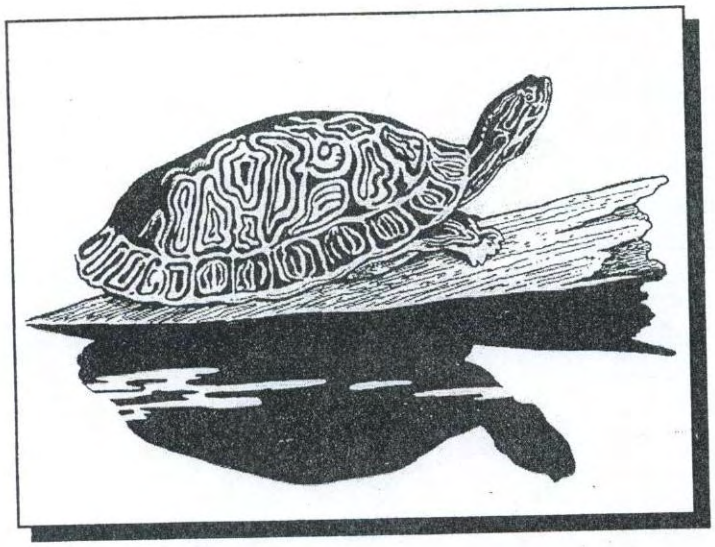
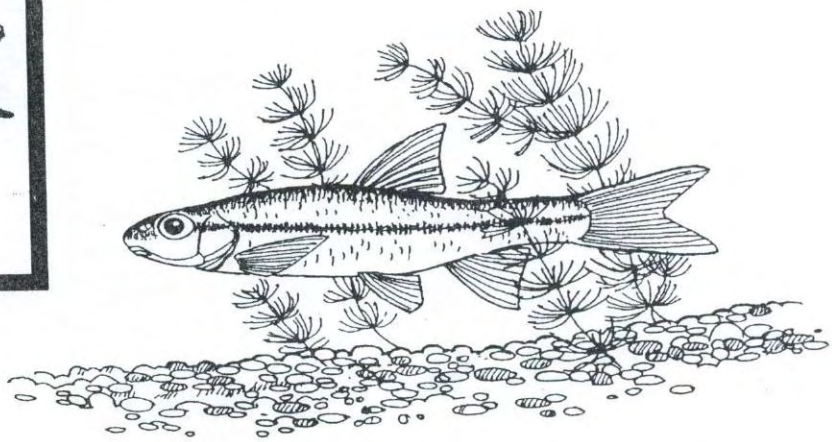
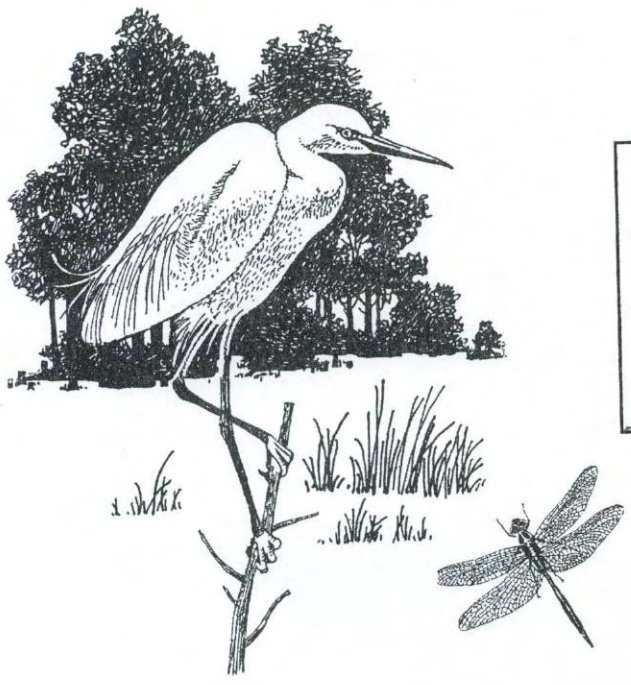
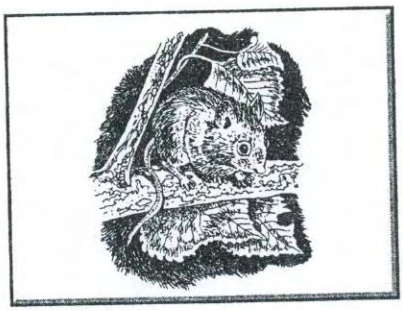


Endangered and Threatened Species of Illinois: Status and Distribution









Volume 2 - Animals

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ENDANGERED AND THREATENED SPECIES OF ILLINOIS: STATUS AND DISTRIBUTION

VOLUME 2: ANIMALS

Randy W. Nÿboer, James R. Herkert, and John E. Ebinger,
Editors

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PROTECTION BOARD

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PREFACE

In 1981 the Illinois Endangered Species Protection Board published the first listing of the status and distribution of endangered and threatened plants and animals in Illinois (Sheviak and Thom 1981). This original listing was the culmination of a major effort entitled the Endangered Species Project. The Endangered Species Project was a comprehensive effort to determine the status of our native species through literature reviews, museum searches, personal contacts, and workshops. The status information compiled during this project served as the basis for the first official state lists of the endangered and threatened species, and was adopted by the Illinois Endangered Species Protection Board. This publication served as the most readily available source of information on endangered and threatened species in Illinois for a decade.

Since the original status and distribution book by Sheviak and Thom (1981) considerable information has been accumulated on our native species. As a result, a major revision of the official state list of endangered and threatened species was completed in 1989. This revision resulted in the Illinois Endangered Species Board publishing two updated volumes of the original status and distribution book, one volume on the endangered and threatened plants of Illinois (Herkert 1991), another listing the endangered and threatened animals of Illinois (Herkert 1992).

In January of 1994 the second major revision of the official state list of endangered and threatened species was completed. As a result of this revision a total of 511 species were officially recognized as endangered and threatened in Illinois. Herkert (1994) summarized the changes that were made to the Illinois list during this list review and revision and provided status and distribution data for the species that were added to the official state list in 1994.

Since the days of the first Endangered Species Project, the process of determining species to be listed as endangered or threatened in Illinois has become increasing complex. Listing revisions now are completed every five years, and these listing decisions must be based on scientific evidence. As a result, the list was reviewed and revised in 1999. As a result of that listing process the status and distribution of the endangered and threatened plant species of Illinois was completed (Herkert and Ebinger 2002). The status and distribution of the endangered and threatened animal of Illinois was not undertaken as there were relatively few changes in the list. This present volume is the result of the listing process that was completed in 2004. It contains that status and distribution of all of the changes made in the animal list during the listing process. Nÿboer and Ebinger (2004) recently completed a list of all changes in the status of endangered and threatened plant species of Illinois.

While the listing process has changed over time, the interest of the people of Illinois in endangered species has not diminished. These volumes continue to be among the most popular among people seeking information on the status and distribution of Illinois' native species. The Illinois Endangered Species Protection Board appreciates this interest and support.

Randy W. Nÿboer
Program Manager
Illinois Endangered Species Protection Board

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INTRODUCTION

At the time of European settlement about 61% of Illinois was covered with prairie with most of the remainder in forest. The most extensive prairies were found in the flat to gently rolling topography of the prairie peninsula that covered the northeastern quarter of the state. Throughout the prairie peninsula forests were mostly encountered along the major rivers and stream, or as isolated groves. Woodlands, savanna, and forests were more common throughout the remainder of the state particularly in areas of more rugged topography. The pre-settlement distribution of the major vegetation types (prairie, savanna, open woodland, and forest) was determined largely by firebreaks, such as lakes and rivers, and by topographic relief that controlled the frequency and intensity of fires.

Though appearing pristine to the casual observer the vegetation on the Midwest at the time of European settlement had been already been subjected to both human and natural disturbances. Native Americans had been living here for more than 11,000 years. When they arrived they almost immediately began altering their environment, exploiting plants, animals, and mineral resources. Their use of these natural resources caused the extinction of some plants and animals, the introduction of new species, and the extensive modification of the composition and structure of the forests and prairies. The most profound effect on environment by native Americans was their use of fire. Landscape fires, that burned for days and covered extensive areas, were common. These large, intense fires shaped the prairie/forest borders as well as the composition and structure of the vegetation and the animals that relied on this vegetation for food and cover.

When European man entered Illinois the broad expanses of prairie and forests were still intact, and, though modified by fire, still retained the high diversity of plants and animals species characteristic of these communities. In the course of settling Illinois the early pioneers made extensive alterations to this landscape. Much of the savannas and forests were cut, the prairie plowed, swamps and marshes drained, and many of the animals hunted to near extinction. These alterations are continuing to this day. We watch as the last natural remnants of our landscape are threatened on all sides with the ever-increasing demands of our society for more space and raw materials.

It is now apparent that the once diverse and abundant wild life around us is diminishing. Many of our native species have been brought to the brink of extinction, certainly from localized areas, and sometimes on a much broader scale. Loss of habitat, fragmentation of communities, the lack of fire, the introduction of exotic species, and pollution, are some of the reasons for this reduction in diversity, but it is mostly the loss of "living space." Species of animals and plants do not just live anywhere; they have specific habitat requirements. By degrading and modifying the environment humans have reduced the "living space" for many other species. We now find that we risk losing many of our native species from the wild in Illinois.

In 1972, the Illinois Endangered Species Protection Act was passed in an effort to halt the loss of species from Illinois. Unfortunately, the original version of that Act protected only animal species, and initially only species such as leopards, tigers, alligators, cheetahs, polar bears and jaguars. The first list of endangered and threatened animals in Illinois was developed during 1976-1979 and officially adopted under the Endangered Species Protection Act in 1980. No revision of this list had yet taken place, when the 1985 amendments to the Act stated that all listing decisions must be based on scientific evidence, requiring more than the consensus of experts, which was utilized in developing the original list. The Illinois Endangered Species Protection Board, responsible under the Act for determining which species are endangered or threatened in the state, began a review and revision of the animal list in 1987. The Board is now required by law to review and revise the entire state list of endangered and threatened animal and plant species at least every five years. During our five year reviews, we evaluate species already on the list, and also those species that are not listed but for which monitoring data indicates some reason for concern.

Listing decisions are made only following review and analysis of established scientific databases and published scientific articles though anecdotal reports and sighting records are also investigated. These data are reviewed by the

Board, and also by six different Endangered Species Technical Advisory Committees (ESTAC's) made up of scientists from throughout the state with expertise in the various species groups. Information considered for each species includes its range in the state (including changes in its occupied range), abundance in Illinois (total numbers), number of known populations or locations where it occurs, number of these locations which are known to be protected from disturbance, population trends (changes in total numbers or numbers of populations over time), the type of threats the species faces, and how fragile or sensitive it is (species biology). It is important to note that decisions to list or delist a species are not strictly based on a numerical formula, but rather takes into account the individual requirements of different species. In some circumstances, species which are low in number, but have always been rare or uncommon in the state, may in fact not qualify as endangered or threatened if their numbers are stable or they are under no specific threat.

The Board, its staff, and technical advisors (ESTAC's) reviewed the status of hundreds of animal and plant species during this latest list revision. We ultimately approved changes (including species added to the list, species removed from the list, species upgraded from threatened to endangered, species downgraded from endangered to threatened) involving more than one hundred species of animals and plants.

The animals discussed in this book reflect the official State List of endangered and threatened as of the last revision in April 2004. Today there are 144 species of animals listed as endangered (93 species) or threatened (51 species) under the Illinois Endangered Species Act. For many of these species we still lack the information needed to determine how to save them. For others we simply lack the ability to halt the continued destruction of the native communities of which they are a part. Whatever the circumstances, our goal for each is the same; to one day be able to remove all species from the list as endangered or threatened because their populations are recovered and once again secure.

Randy W. Nÿboer
James R. Herkert
John E. Ebinger

ACKNOWLEDGMENTS

We could not have produced this work without the effort given by those who produced the original book and the subsequent revisions. We owe a debt of thanks to everyone involved in these earlier publications; their efforts and dedication to endangered and threatened species are an inspiration to all of us.

The Illinois Endangered Species Protection Board and the present editors are indebted to those who assistant in the listing process and in the preparation of this volume. Valuable assistance was given by the personnel of the Illinois Department of Natural Resource's Natural Heritage Database in providing updated information on species occurrences. Also, the efforts of the field staff of the Illinois Department of Natural Resources, and the field staff of the Illinois Nature Preserves Commission are greatly appreciated. Their work has contributed to the status and distribution data included in this volume and their on-going work in the field has provided the foundation of Illinois' endangered species restoration and management efforts.

Many zoologists and biologists, both professionals and amateurs, have contributed to the completion of this volume. Their field efforts have been very helpful in understanding the distribution and status of the animal species listed. Without their effort the resulted presented here could not have been accomplished. The efforts of the many early Illinois Zoologists, whose collections still exist, have been useful in determining the past distribution of the animal species listed. We appreciate these early efforts, for without their efforts it would be hard to understand the present, or prepare for the future.

The work of the many professional scientists at the Illinois Natural History Survey, Champaign, Illinois, is greatly appreciated. These dedicated professionals have spent many hours in the field studying many of the listed species. Their extensive knowledge and observations has been extremely helpful in our present understanding of these species. Also, the extensive collections and the library holdings of the Illinois Natural History Survey have been valuable sources of information concerning many of the listed animal species.

The Illinois Endangered Species Protection Board would also like to thank the members of the Endangered Species Technical Advisory Committees (ESTACs) on the various animals groups. The ESTAC members have been extremely helpful in the listing process. These committees provided valuable advice on a variety of matters, and undertook the difficult task of reviewing the animal records from the past decade in order to formulate recommendations to the Board regarding the species in need of protection. Though the final listing decisions are the Boards, the evaluation of the numerous species reviewed and the recommendations of the ESTAC members made the Boards' job easier. The Illinois Endangered Species protection Board would like to thank the members of the ESTACs for their help in making the decisions included in the present list. These dedicated individuals are listed below.

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Program Manager
Illinois Endangered Species Protection Board

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Dr. Ed Heske
Dr. Joyce Hofmann

SPECIAL THANKS

Determining what species to list as endangered or threatened involved many individuals who devote a great deal of time and energy in trying to make the correct listing decisions. This involved field studies, literature searches, collection searches, and contacting individuals that had information concerning particular species. Many individuals have been involved, both amateur and professional, from all parts of Illinois and surrounding states. The efforts of these individuals are greatly appreciate by the Illinois Endangered Species Protection Board, and we thank them for their time and suggestions. A few individuals were especially helpful in the listing process. They help with editing the preliminary versions, determined the validity of many of the site records, and provided advice to the editors on the many decisions that had to be made. We appreciate their help, without their efforts our job would have been much more difficult.

Robert (Bob) D. Bluett is a certified Wildlife Biologist employed by the Illinois Department of Natural Resources (IDNR). He earned a B.A. in biology from Ripon College and a M.S. in wildlife management from the University of Wisconsin-Stevens Point. Bob coordinated development and implementation of Illinois' river otter recovery plan. He is currently working with the USDA Forest Service, Southern Illinois University, Illinois Endangered Species Protection Board, and IDNR's Division of Resource Protection and Stewardship to improve the status of the eastern woodrat.

John K. Bouseman is recently retired as an Associate Professional Scientist at the Illinois Natural History Survey. A native of Savanna, Illinois, he received his B.S. and M.S. degrees in entomology from the University of Illinois, Urbana-Champaign. His research interest is in the systematics and ecology of bees, beetles, and butterflies. He has participated in expeditions in North America, South America, West Indies, Europe, Africa, and Asia.

Kevin S. Cummings is a lifelong resident of Illinois. Born and raised near Chicago (Bears and White Sox fan and aficionado of Chicago Blues), he obtained B.S. and M.A. degrees in zoology from Southern Illinois University at Carbondale. Kevin has been employed as a research scientist and Curator of Mollusks at the Illinois Natural History Survey in Champaign since 1983. His research interests are in the areas of conservation, systematics, and ecology of freshwater mollusks and the protection of freshwater habitats; primarily streams. He is the co-author (with Christine Mayer), of a Field Guide to Freshwater Mussels of the Midwest (1992).

R. Edward DeWalt is an aquatic entomologist with the Illinois Natural History Survey in Champaign. He earned a Ph.D. in aquatic entomology from the University of North Texas in 1992. His passion is the taxonomy, life history, and conservation of stoneflies (Plecoptera), but also has developed expertise in mayfly (Ephemeroptera) and caddisfly (Trichoptera) taxonomy and ecology. He uses these three insect orders to monitor stream conditions throughout Illinois for the Critical Trend Assessment Program. A primary interest of his is the comparison of historical and contemporary aquatic insect faunas and in using museum specimens to track losses of insect species in Illinois and the Midwest.

Chris Dietrich is an insect systematist and curator in the Center for Biodiversity, Illinois Natural History Survey. He earned a B.S. in biology at the University of Pittsburgh, and a Ph.D. in entomology at North Carolina State University. His research focuses on the systematics, evolution, and conservation of leafhoppers, treehoppers, and their relatives (Hemiptera).

Michael Dreslik is currently pursuing his doctoral degree in the Department of Natural Resources and Environmental Science at the University of Illinois, Urbana-Champaign, and holds a graduate research assistantship with the Illinois Natural History Survey. Michael's primary research interests are ecology and conservation of herpetofauna. He received his M.S. degree at Eastern Illinois University, Charleston, where he began and is continuing a long-term ecological study of the state endangered River Cooter (*Pseudemys concinna*). Presently, he is part of a team studying the life history and ecology of the Eastern Massasauga (*Sistrurus catenatus*) with his doctoral research emphasizing population, spatial, and thermal ecology.

Joyce E. Hofmann is a Research Scientist at the Illinois Natural History Survey in Champaign. Joyce attended the University of Illinois at Chicago as an undergraduate and received M.S. and Ph.D. degrees in zoology from the University of Illinois, Urbana-Champaign. She has conducted ecological and behavioral research on rodents and bats. Since joining the Natural History Survey in 1985, her focus has been the distribution and natural history of Illinois mammals, and she conducts surveys for endangered and threatened species throughout the state. She also is a curator of the Illinois Natural History Survey and University of Illinois Museum of Natural History mammal collections.

Joseph A. Kath serves as the Endangered Species Project Manager within the Illinois Department of Natural Resources (IDNR). He received his B.S. and M.S. degrees in environmental biology from the University of Illinois, Urbana-Champaign. His primary job responsibilities include the development and implementation of endangered and threatened species management and recovery plans and the issuance of endangered species possession and research permits. Joe coordinates much of the IDNR's bat related field studies, serves as the chairman for the Northeast Bat Workshop Group, is an executive steering committee member of the North American Bat Conservation Partnership, and is a steering committee member of the U.S. Geological Survey's Monitoring Trends in U.S. Bat Populations project.

Christopher (Chris) A. Phillips is an Assistant Professional Scientist in the Center for Biodiversity, Illinois Natural History Survey, Champaign. He received his Ph.D. from Washington University, St. Louis in 1989, and his B.S. from Eastern Illinois University, Charleston in 1983. His current interests are in the field of ecology and population genetics. Current questions focus on North American amphibians and reptiles. He is especially interested in population structure of wide ranging species and population viability. Chris is a member of the Illinois Endangered Species Protection Board.

Mike Retzer was born in Peoria and is presently on the staff of the Illinois Natural History Survey, Champaign. He attended Bradley University in Peoria, Southern Illinois University in Carbondale, and obtained his Ph.D. at the University of Illinois, Urbana-Champaign. Mike is an ichthyologist with interests in the conservation of Illinois fishes and is studying the taxonomy of African catfishes.

James G. Sternburg is Professor Emeritus of Entomology at the University of Illinois, Urbana-Champaign, and an affiliate of the Illinois Natural History Survey, Champaign. He received his Ph.D. in 1952 from the University of Illinois. For the past 30 years he has conducted research on insects and has photographed insects in nature in Illinois and adjacent state. Professor Sternburg is originally from Chicago and Glen Ellyn.

Christopher (Chris) A. Taylor is a Research Scientist with the Illinois Natural History Survey in Champaign. He earned his B.S. and M.S. from Southern Illinois University, Carbondale, and his Ph.D. from the University of Illinois, Urbana-Champaign. Chris conducts field surveys for rare fishes and crustaceans in Illinois, and also researches the systematics and conservation of North American crayfishes.

Steven (Steve) J. Taylor is an Associate Research Scientist at the Illinois Natural History Survey (INHS), Champaign. He earned his B.A. in biology from Hendrix College in Arkansas, a M.S. in biology from Texas A&M University, and a Ph.D. in zoology from Southern Illinois University at Carbondale. Steve conducts research on the biology, conservation, and management of cave and karst fauna, on the biology of true bugs (Hemiptera), and studies stream macroinvertebrates as a part of INHS's Statewide Biological Survey and Assessment Program.

Randy W. Nÿboer
James R. Herkert
John E. Ebinger

ABOUT THE EDITORS AND SECRETARY

John E. Ebinger is an Emeritus Professor of Botany at Eastern Illinois University, Charleston, Illinois. He received his Ph. D. from Yale University in 1961 and his undergraduate degree in 1955 from Miami University, Oxford, Ohio. His current research involves the composition and structure of the vegetation of the Illinois sand deposits. John is a current member of the Illinois Endangered Species Protection Board.

James R. Herkert is the Upper Mississippi River Program Director for the Illinois Chapter of The Nature Conservancy. Before joining the Conservancy in 2001, James spent ten years working for the Illinois Endangered Species Protection Board, where he coordinated review and revisions to the state list of endangered and threatened species. He received his Ph.D. from the University of Illinois-Champaign and has both a B.S. and M.S. degree from Illinois State University in Normal. Jim's research interests focus primarily on the conservation and management of grassland birds.

Randy W. Nÿboer is a Research Ecologist for the Illinois Natural History Survey, and is located at the Lost Mound Field Station (Savanna Army Depot) in northwestern Illinois. He worked for 25 years managing natural areas and endangered resources for the Division of Natural Heritage with the Illinois Department of Natural Resources. Prior to this he was a field ecologist with the Illinois Natural Areas Inventory. Randy received his undergraduate degree in Botany in 1974 and a M. S. in Botany in 1975, at Eastern Illinois University. His present work deals with protecting endangered species at the Savanna Army Depot and monitoring endangered and threatened plants in northwestern Illinois. Also, he is Program Manager for the Endangered Species Protection Board.

Janet M. Boyer is the Secretary for the Illinois Endangered Species Protection Board. She has served in this capacity for ten years and has been involved in editing the Illinois list since 1994. Her expertise in handling issues, meetings and other duties of the Board have been exceptionally valued during times of administrative transition. Janet's dedication to the IESPB and to the conservation of those plants and animals listed in Illinois, is unsurpassed and so noted here. Janet received her Bachelor's of Arts in Management from Sangamon State University in 1976.

Summary of Changes to the Illinois Animal List

ADDED AS ENDANGERED

MAMMALS
- *Canis lupus* (gray/timber wolf)*

INVERTEBRATES
- *Fontigens antroecetes* (Hydrobiid cave snail)

ADDED AS THREATENED

FISH
- *Erimystax x-punctatus* (gravel chub)
- *Fundulus dispar* (starhead topminnow)

AMPHIBIANS
- *Gastrophryne carolinensis* (eastern narrowmouth toad)

REPTILES
- *Tropidoclonion lineatum* (lined snake)

BIRDS
- *Dendroica cerulea* (cerulean warbler)

MAMMALS
- *Spermophilus franklinii* (Franklin's ground squirrel)

REMOVED FROM ENDANGERED [1]

FISH
- *Platygobio gracilis* (flathead chub) [2]
- *Pteronotropis hubbsi* (bluehead shiner) [2]

INVERTEBRATES
- *Obovaria subrotunda* (round hickorynut) [2]
- *Pleurobema rubrum* (pyramid pigtoe) [2]
- *Villosa fabalis* (rayed bean) [2]
- *Crangonyx antennatus* (Appalachian valley cave amphipod) [4]

* No Board action required, automatically added April 1 2003 based on federal listing by USFWS. That action was recently overturned by a federal court in Oregon. To date, the wolf's status is pending.

REMOVED FROM THREATENED [1]

BIRDS
- *Certhia americana* (brown creeper) [3]
- *Podilymbus podiceps* (pied-billed grebe) [3]
- *Buteo lineatus* (red-shouldered hawk) [3]

MAMMALS
- *Lontra canadensis* (river otter) [5]

INVERTEBRATES
- *Gammarus bousfieldi* (Bousfield's amphipod) [3]

CHANGED STATUS FROM ENDANGERED TO THREATENED

FISH
- *Etheostoma exile* (Iowa darter)

REPTILES
- *Thamnophis sauritus* (eastern ribbonsnake)

BIRDS
- *Ammodramus henslowii* (Henslow's sparrow)
- *Falco peregrinus* (peregrine falcon)

INVERTEBRATES
- *Villosa lienosa* (little spectaclecase).

CHANGED STATUS FROM THREATENED TO ENDANGERED

REPTILES

Elaphe guttata emoryi (great plains ratsnake)

NAME CHANGES

BIRDS

Tyto alba (common barn-owl) to barn owl

AMPHIBIANS

Desmognathus fuscus (dusky salamander) to *D. conanti* (spotted dusky salamander)

REPTILES

Macroclemys temminckii (alligator snapping turtle) to *Macrochelys temminckii*

Elaphe guttata emoryi (great plains ratsnake) to *Elaphe emoryi*

INVERTEBRATES

Orconectes placidus (crayfish) to bigclaw crayfish.

Orconectes lancifer (oxbow crayfish) to shrimp crayfish

[1] Primary reason for delisting Endangered and Threatened Species are designated by superscripts.
[2] All native populations are now considered to be extirpated from Illinois.
[3] Now known to be more common in Illinois than previously thought.
[4] Illinois records for this species were based on misidentified specimens.
[5] Considered as recovered in Illinois as a result of stable native populations and river otter reintroductions.

HOW TO USE THIS BOOK

The purpose of this volume is to provide general information on animal species which are listed as endangered or threatened in Illinois and where they occur in the state. It is not intended to serve as a field guide for species identification, and for that reason no attempt has been made to illustrate each species. It should not be used for precise locational information on where a particular species occurs, as this information is constantly being revised as data are collected, and may be out-of-date for some species at the time of publication. Anyone desiring precise information on endangered or threatened species occurrences in Illinois should contact the Illinois Department of Natural Resources' Natural Heritage Database in Springfield (see additional information on inside of back cover.

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:

ORGANIZATION OF TEXT

Species have been arranged in the text alphabetically by scientific name within taxonomic classes. The Latin name by which the species is officially listed under the Illinois Endangered Species Protection Act is the primary name used in this volume. Species classified as endangered or threatened are intermixed, rather than broken into two groupings; the status of each species is noted in the narrative for that species. Because not all readers will know the scientific name of a species, and since a few species may be known by more than one Latin name, readers can use the **Index** to look up species discussed in this volume. The Index gives both Latin and common names, as well as synonyms, allowing a species to be located in several ways.

Since an alphabetic listing does not place related species next to each other in the text, a **Listing of Endangered and Threatened Animal Species by Class and Family** (Appendix III) is provided, grouping all listed species by family. This will be helpful for those readers wishing to know at a glance whether related species are also listed as endangered or threatened in Illinois.

The **Cross Reference of Species to County** (Appendix IV) can be used to find what counties a particular species occurs in. Conversely, a county can be checked for which species occur there. **CAUTION:** Please remember that new data are being collected all the time. The information in the species/county cross references could be out-of-date for some species by the time this volume is printed. This index, as is true of the entire book should only be used to get a general picture of endangered and threatened animal status in Illinois. It should never be used as a sole source of locational information for any report, project, regional/local planning, or environmental impact assessment. For work of that nature, you **must** contact the Illinois Department of Natural Resources, Division of Habitat Resources, One Natural Resources Way, Springfield, IL 62702-1271.

Genus species (Author)

COMMON NAME **FAMILY NAME Status:** Endangered or Threatened in Illinois
Federal Status, if any, is also noted

Present Distribution: A verbal description of the species' general range in North America.
Former Illinois Distribution: A description of the species' former distribution in Illinois.
Habitat: Specific habitat requirements or associations of the species.
Reason for Status: Factors believed to have led to the species' endangered or threatened status in Illinois.
Management Recommendations: Management needs for the recovery and protection of the species.