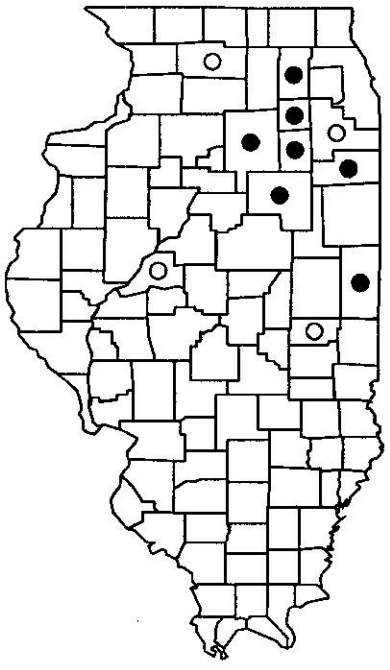
Macrhybopsis gelida (Girard)

STURGEON CHUB **CYPRINIDAE** **Status:** Endangered in Illinois

Present Distribution: The sturgeon chub occurs in the Missouri River basin from Montana and Wyoming to Illinois, the Mississippi River between the mouths of the Missouri and Ohio Rivers, and in southern Mississippi and Louisiana (Page and Burr 1991). It is fairly common in the Missouri River but relatively rare elsewhere (Page and Burr 1991).
Former Illinois Distribution: In Illinois, this fish is restricted to the Mississippi River below the mouth of the Missouri River. Historically, it is known from Madison, Jackson, and Union counties.
Habitat: In Illinois, the sturgeon chub is found in shallow fast riffles over fine gravel or coarse sand of medium to large turbid rivers (Smith 1979, Page and Burr 1991).
Reason for Status: The sturgeon chub has apparently always been rare in Illinois due to its highly specialized habitat requirements. However, populations in the state are now declining and sporadic. Sturgeon chubs appear to be declining throughout much of their range (L. Page, personal communication).
Management Recommendations: Like other Illinois fishes that inhabit large river systems, the sturgeon chub is in need of clean water and silt-free breeding substrates. Further modifications of the lower Mississippi River, particularly by siltation, channelization and impoundments, would likely limit the potential for recovery of this species in Illinois. Its life history is poorly known, making management difficult.

Moxostoma carinatum (Cope)

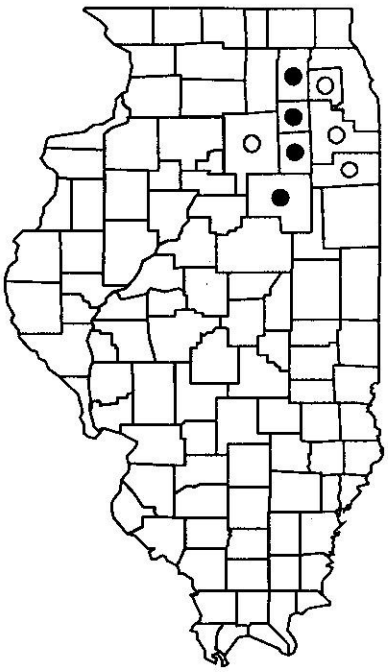
RIVER REDHORSE **CATOSTOMIDAE** **Status:** Threatened in Illinois



Present Distribution: The river redhorse occurs in the St. Lawrence-Great Lakes and Mississippi River basins from southern Quebec to central Minnesota and western Iowa, south to northern Alabama and eastern Oklahoma, also along the Gulf Coast drainages from Florida to Mississippi (Page and Burr 1991). Since 1980, the river redhorse has been recorded from 10 localities in Illinois. These records are all restricted to the upper Illinois River basin and to the Vermilion River basin of the Wabash River (Retzer and Kowalik 2002).
Former Illinois Distribution: This species has apparently always been relatively rare in Illinois, occurring only in the Wabash, Rock and Illinois river drainages (Jordan 1878, Forbes and Richardson 1908, O'Donnell 1935, Retzer and Kowalik 2002).
Habitat: The river redhorse inhabits deep, swift, gravelly riffles of small and medium sized rivers and is apparently intolerant of silty bottoms, turbid water, intermittent flow, and pollution (Pflieger 1975, Smith 1979).
Reason For Status: The river redhorse has a limited distribution within Illinois and is threatened by declining water quality, siltation, increased turbidity and pollution.
Management Recommendations: Maintenance of high water quality and protection from siltation, increased turbidity, and pollution in streams in which this species occurs are the primary management needs for the river redhorse in Illinois.

Moxostoma valenciennesi Jordan

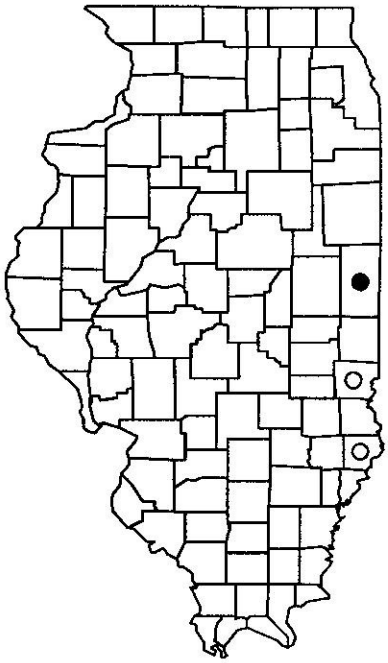
GREATER REDHORSE **CATOSTOMIDAE** **Status:** Endangered in Illinois



Present Distribution: The greater redhorse occurs in the Great Lakes, Hudson Bay and Mississippi River basins from Quebec and Vermont to southern Ontario and northern Minnesota and south to the Ohio River in Kentucky (Page and Burr 1991). In Illinois the greater redhorse is known from the Illinois, Vermilion, and Fox rivers in Grundy, Kane, Kendall, La Salle, and Livingston counties (Seegert 1991a, 1991b, Retzer and Kowalik 2002).
Former Illinois Distribution: This species was considered to be extirpated in Illinois until its rediscovery in 1985 (Seegert 1986). Recently Retzer and Kowalik (2002) recorded this species from 13 localities in the upper Illinois River basin. Prior to its recent rediscovery, the only record for the state was a 1901 specimen collected in Salt Creek, Du Page County. Presently most younger greater redhorse have been found in two areas: the Vermilion River of the Illinois River basin, and Aux Creek in Grundy County.
Habitat: The greater redhorse occurs in sandy to rocky pools and runs of medium to large rivers and lakes (Page and Burr 1991).
Reason For Status: Recently thought to be extirpated in Illinois (Smith 1979), the greater redhorse was rediscovered in 1985 and is presently known from only a few areas in four counties.
Management Recommendations: Like the preceding species, maintenance of high water quality and protection from siltation, increases in turbidity, and pollution in streams in which it occurs are the primary management needs for the greater redhorse in Illinois. Protection of areas where this species presently occurs would help maintain viable populations in the state.

Nocomis micropogon (Cope)

RIVER CHUB **CYPRINIDAE** **Status:** Endangered in Illinois



Present Distribution: The river chub occurs in Atlantic drainages from New York to Virginia, the Great Lakes basin from New York to Michigan, and the Ohio River basin from New York to Illinois, and south to northern Georgia and Alabama. The river chub is common and locally abundant in many parts of its range (Page and Burr 1991). In Illinois this species was considered to be extirpated until it was recently (1987) discovered in Vermilion County (Page and Retzer 2002).
Former Illinois Distribution: The river chub is a peripheral species in Illinois that was first reported for the state by O'Donnell (1935). Prior to its recent discovery in the Little Vermilion River, the only known locations for this species in Illinois were from the Wabash River in Clark and Lawrence counties. It is apparently fairly common and widely distributed in large creeks in adjacent Indiana (Smith 1979).
Habitat: In Illinois, the river chub is found in rocky runs and flowing pools of small to medium rivers (Page and Burr 1991).
Reason for Status: Although always relatively rare in Illinois, the river chub is now known from only one location in the state.
Management Recommendations: Management needs for this species in Illinois include a prohibition of dams and channelization and improved soil conservation measures in the Little Vermilion River.

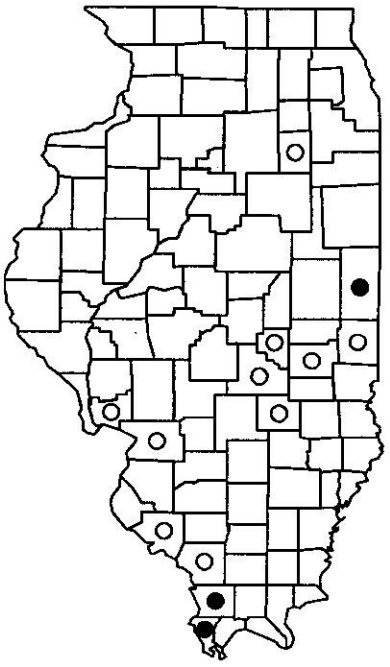
Notropis anogenus Forbes

PUGNOSE SHINER **CYPRINIDAE** **Status:** Endangered in Illinois

Present Distribution: The pugnose shiner ranges from eastern Ontario and western New York to southeastern North Dakota and central Illinois (Page and Burr 1991). In Illinois the species is now present only in a few glacial lakes in Lake and McHenry counties (Page 1985b, Seegert 1990, Page and Retzer 2002).
Former Illinois Distribution: This shiner was described by S.A. Forbes from specimens collected in the Fox River of McHenry County in 1885. He also collected it in Fourth Lake in Lake County in 1892 and in an Illinois River floodplain lake in Mason County in 1909. The Mason County record is far south of any other known locality for the species.
Habitat: Throughout its range the pugnose shiner lives in clear, heavily vegetated lakes and more rarely in vegetated low-gradient streams, where it usually occurs over sand or mud substrates (Page and Burr 1991).
Reason for Status: Bailey (1959) indicated this shiner as one of the rarest cyprinids of northern United States and adjacent Canada. It is rather widespread but rare in Minnesota, Wisconsin, and Michigan, and is disappearing from peripheral areas primarily because of increased turbidity of lake and stream waters and reduction in aquatic vegetation (Trautman 1957, Smith 1979).
Management Recommendations: Glacial lakes in northeastern Illinois support many organisms seldom or never encountered elsewhere in the state (Evers and Page 1977). Management of these lakes should include protection from further development, a prohibition of sport fish introductions, protection and enhancement of emergent and submerged vegetation, and protection from pollution and the use of herbicides (Page 1985b).

Notropis boops Gilbert

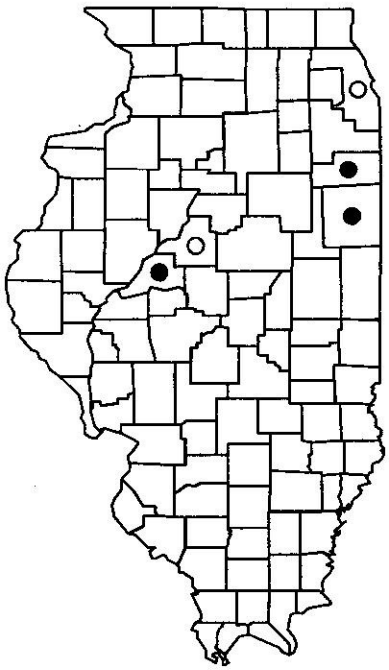
BIGEYE SHINER **CYPRINIDAE** **Status:** Endangered in Illinois



Present Distribution: The bigeye shiner occurs from the Lake Erie drainage in Ohio to eastern Kansas and the Mississippi River basin south to northern Alabama, Louisiana, and southern Oklahoma (Page and Burr 1991). In Illinois it is uncommon but known from tributaries of the Mississippi and Wabash rivers.
Former Illinois Distribution: The bigeye shiner was formerly considered common in the Vermilion and Little Vermilion rivers but has always been relatively rare and sporadic in the rest of the state (Forbes and Richardson 1908, O'Donnell 1935, Smith 1979).
Habitat: The bigeye shiner occurs in clear, high-gradient streams over clean gravel or mixed sand and gravel (Smith 1979), often near emergent vegetation along the stream margin (Page and Burr 1991). It apparently avoids strong currents (Pflieger 1975).
Reason For Status: Siltation, increased turbidity and impoundments have caused a significant decrease in abundance of this species within Illinois (Smith 1979).
Management Recommendations: Efforts are needed to prevent continued declines in water quality in Illinois streams if our native stream fauna is to remain intact.

Notropis chalybaeus (Cope)

IRONCOLOR SHINER **CYPRINIDAE** **Status:** Threatened in Illinois



Present Distribution: Lowlands of the Atlantic and Gulf basins from New York to southern Florida across the Gulf Slope to Texas; also in the Mississippi Embayment from Louisiana to southeastern Missouri. Isolated populations occur in Texas, Illinois, Iowa, Wisconsin, Michigan and Indiana (Page and Burr 1991). In Illinois the ironcolor shiner is restricted to the sand areas of Kankakee, Iroquois, and Mason counties.
Former Illinois Distribution: Besides the modern collections from Kankakee, Iroquois, and Mason counties there is only one historic collection, a 1901 specimen taken from the Des Plaines River in Cook County.
Habitat: In Illinois, the ironcolor shiner usually occurs in small, clear, low-gradient streams with a sand/organic matter substrate and an abundance of aquatic macrophytes (Burr *et al.* 1989).
Reason For Status: This species' restricted distribution within Illinois and its clean water requirements threaten its continued existence in Illinois.
Management Recommendations: Protection of high quality Illinois streams from siltation, increased turbidity and pollution are necessary to prevent further decimation of the Illinois population of this species.

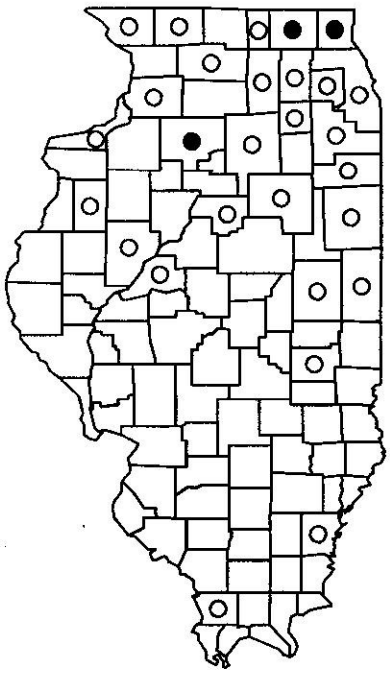
Notropis heterodon (Cope)

BLACKCHIN SHINER **CYPRINIDAE** **Status:** Threatened in Illinois

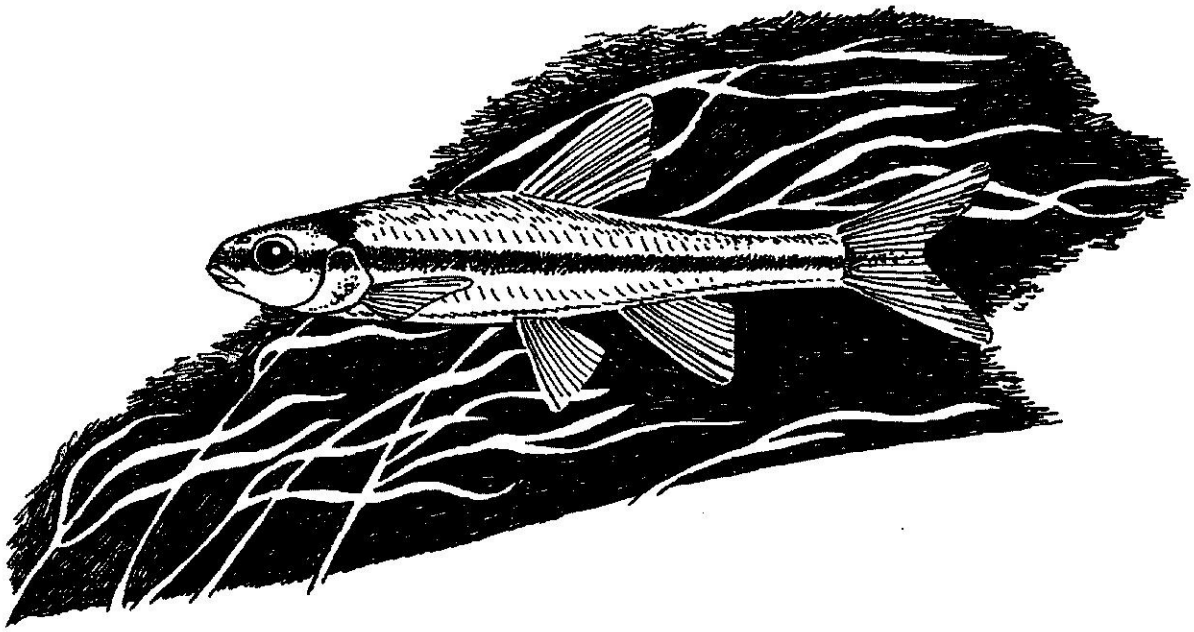
Present Distribution: The blackchin shiner ranges from southern Quebec and Vermont west to Minnesota and Iowa; mostly restricted to Great Lakes and upper Mississippi River basins (Page and Burr 1991). In Illinois this species is presently restricted to glacial lakes in Lake and McHenry counties, where it may be locally abundant (Seegert 1990).
Former Illinois Distribution: This species has apparently always been restricted to Cook, Lake and McHenry counties in northeastern Illinois (Smith 1979).
Habitat: In Illinois, the blackchin shiner occurs in clear, well-vegetated glacial lakes and their connected streams in northeastern Illinois (Smith 1979).
Reason For Status: Although still relatively common in a few of the glacial lakes in northeastern Illinois, the blackchin shiner has been eliminated from several others, especially those highly modified by human disturbance (Smith 1979).
Management Recommendations: Protection of northeastern Illinois glacial lakes is necessary in order to avert deterioration resulting from human development projects, pollution, and introductions of sport fishes.

Notropis heterolepis Eigenmann & Eigenmann

BLACKNOSE SHINER **CYPRINIDAE** **Status:** Endangered in Illinois



Present Distribution: The blacknose shiner ranges from Nova Scotia to Saskatchewan and south to Ohio, Illinois, and Kansas (Page and Burr 1991). Presently the Illinois populations of the blacknose shiner are mostly in glacial lakes in northern Illinois (Page and Retzer 2002).
Former Illinois Distribution: The blacknose shiner formerly had a much larger distribution, occurring in creeks and rivers throughout the northern two-thirds of Illinois and in glacial lakes in northern Illinois (Forbes and Richardson 1908, O'Donnell 1935, Smith 1979).
Habitat: The blacknose shiner occurs in clear vegetated lakes, and pools and runs of clear streams. It usually occurs over sand and mud substrates (Page and Burr 1991).
Reason for Status: The disappearance of the blacknose shiner in Illinois has been among the most dramatic of any fish. Increased turbidity of lake and pool waters and the disappearance of aquatic vegetation have probably been the major factors causing its decline (Smith 1979). These factors are also responsible for its decline in Ohio (Trautman 1957) and Missouri (Pflieger 1975).
Management Recommendations: Better soil conservation practices that allow less silt to enter streams and protection of some glacial lakes would enhance the probability of survival for the blacknose shiner in Illinois. If streams were less turbid and silt-laden, aquatic vegetation could return to some areas and provide additional habitat for the blacknose shiner. If soil conservation does not improve, the glacial lakes of Lake and possibly McHenry counties offer this species its only chance for survival in Illinois.



Notropis heterolepis
(Blacknose Shiner)

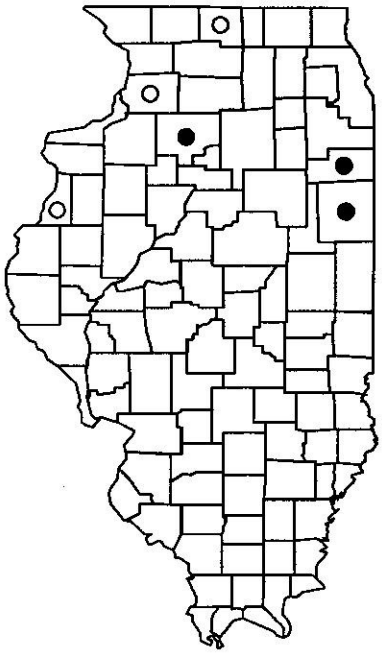
Notropis maculatus (Hay)

TAILLIGHT SHINER **CYPRINIDAE** **Status:** Endangered in Illinois

Present Distribution: The taillight shiner occurs in the Atlantic, Gulf, and Mississippi River basins from North Carolina to Texas, and north to central Illinois (Page and Burr 1991). It is locally common in the southeastern United States, but uncommon in the Mississippi River basin (Page and Burr 1991).
Former Illinois Distribution: In Illinois, this species was first collected in a wetland in Massac County in 1987 (Burr *et al.* 1988). Searches for this species elsewhere in the state have been unsuccessful (Page and Retzer 2002).
Habitat: The taillight shiner occurs in swamps, ponds, backwaters, and pools of small to large rivers usually near vegetation (Page and Burr 1991).
Reason For Status: The taillight shiner has a very restricted range in Illinois and is known from only one location in the state.
Management Recommendations: Protection of the wetland area where this species occurs is necessary because searches for this species in other potential habitat have been unsuccessful.

Notropis texanus (Girard)

WEED SHINER **CYPRINIDAE** **Status:** Endangered in Illinois



Present Distribution: The weed shiner is found in the Great Lakes, Hudson Bay and Mississippi River basins from Michigan, Wisconsin, and Minnesota south to the Gulf of Mexico; also in Gulf Coast drainages from Florida to Texas (Page and Burr 1991). In Illinois the weed shiner is presently restricted to the Kankakee and Green river systems (Page and Retzer 2002).
Former Illinois Distribution: The weed shiner was probably never an abundant species in Illinois but was once more widespread occurring in the Illinois, Wabash and Rock river systems (Smith 1979).
Habitat: In Illinois, the weed shiner occupies clear sand-bottom creeks with some submerged vegetation (Smith 1979). In other parts of its range it also occupies sloughs and large rivers (Smith 1979).
Reason For Status: The weed shiner occurs in very few locations in Illinois and its habitat is threatened due to deteriorating water and stream quality due to pollution and siltation.
Management Recommendations: Protection and maintenance of high quality, clear, clean streams are necessary to protect Illinois populations of this species.

Noturus stigmosus Taylor

NORTHERN MADTOM **ICTALURIDAE** **Status:** Endangered in Illinois

Present Distribution: The northern madtom occurs in the Lake Erie and Ohio river basins from Pennsylvania, Michigan, and Kentucky, and in tributaries of the Mississippi River in Tennessee and Mississippi (Page and Burr 1991). This small catfish is sporadic and uncommon throughout its range and is disappearing from the edges of its range (Page and Burr 1991). In Illinois it is only known to occur in the Ohio River near Joppa, Massac County (Page and Retzer 2002).

Former Illinois Distribution: The northern madtom has only been collected at two locations in Illinois, the Vermilion River in Vermilion County and the Ohio River in Massac County. All collections were made since 1962 (Page and Retzer 2002).

Habitat: The northern madtom occurs in mixed sand and rock riffles and runs with debris in small to large, often swift rivers (Page and Burr 1991).

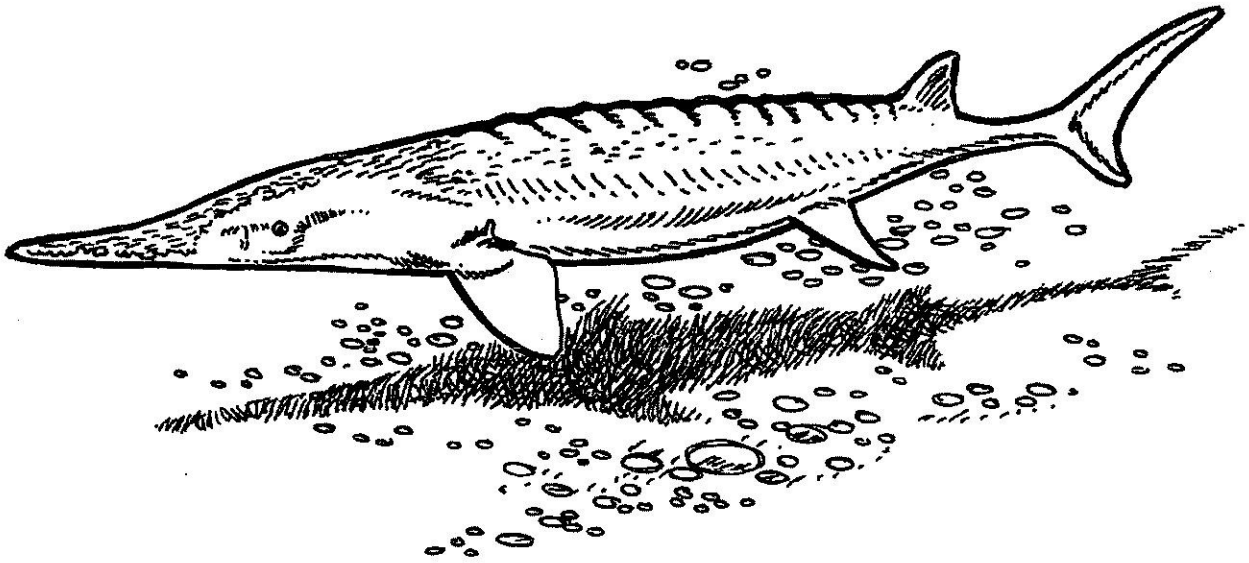
Reason For Status: The northern madtom has been collected from very few locations in Illinois and has limited distribution within the state. Populations of this species are threatened by declining water quality, habitat destruction, siltation, increased turbidity and pollution (Page and Retzer 2002).

Management Recommendations: Better soil conservation practices that allow less silt to enter streams and rivers would enhance the probability of survival for the northern madtom in Illinois.

Scaphirhynchus albus (Forbes & Richardson)

PALLID STURGEON **ACIPENSERIDAE** **Status:** Endangered in Illinois
Federally Endangered

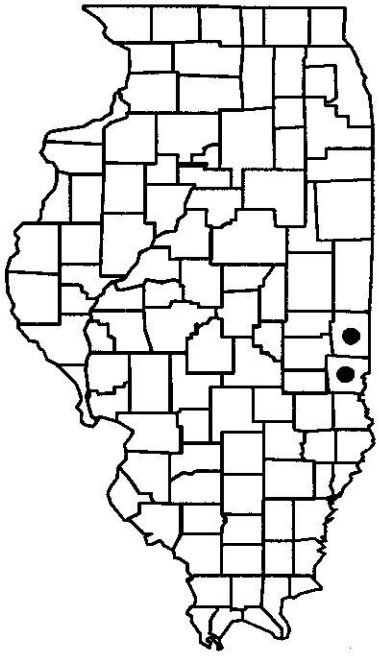
Present Distribution: The pallid sturgeon is currently known only from the Missouri River, the lower Yellowstone River in Montana, and the Mississippi River downstream from the confluence of the Missouri River. There is one recent record for Illinois from the Mississippi River in Madison County.
Former Illinois Distribution: Forbes and Richardson (1905) reported several specimens from the Mississippi River near Alton. Since this time there have been very few records of this species in Illinois, all from the Mississippi River south of the St. Louis area.
Habitat: The pallid sturgeon occupies large, deep, turbid river channels, usually occurring in strong current over firm sand or gravel substrates (Page and Burr 1991).
Reason For Status: Populations of the pallid sturgeon are threatened by habitat modification, lack of reproduction, over harvesting, and hybridization with the shovelnose sturgeon.
Management Recommendations: Complete protection of this species and its habitat are necessary in order to avoid its extinction.



Scaphirhynchus albus
(Pallid Sturgeon)

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.

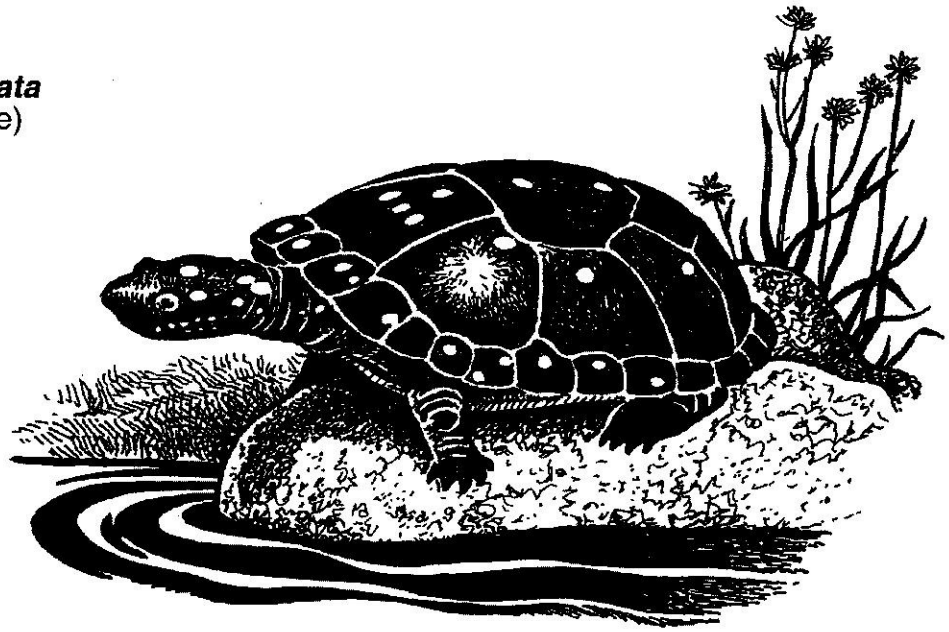
Former Illinois Distribution: This species was first found in Illinois in 1990. It is presently restricted to the Wabash Border Division in the east-central part of the state (Phillips *et al.* 1999).

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.

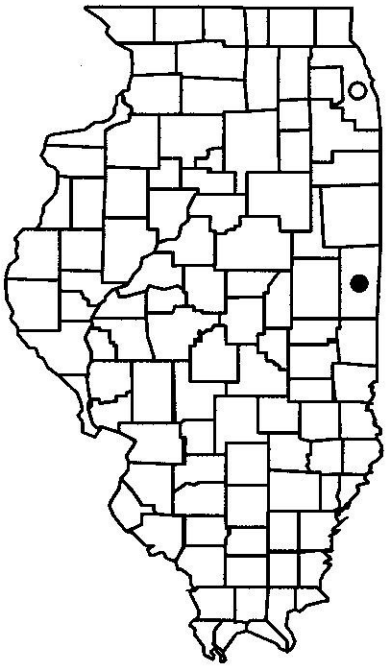
Management Recommendations: Ponds where Jefferson salamanders breed should be protected from draining and should not be stocked with fish which prey on eggs and larvae.

Clemmys guttata
(Spotted Turtle)



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.

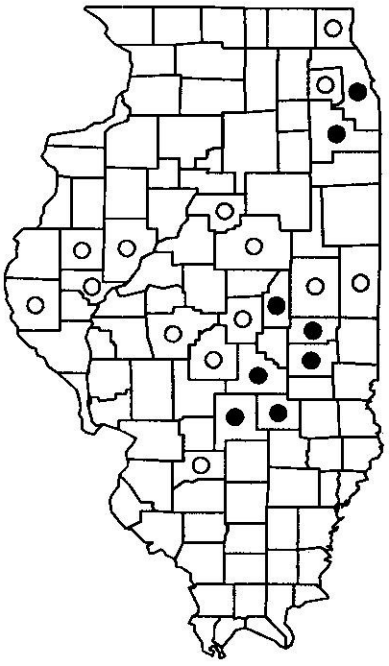
Clemmys guttata (Schneider)

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).

Clonophis kirtlandi (Kennicott)

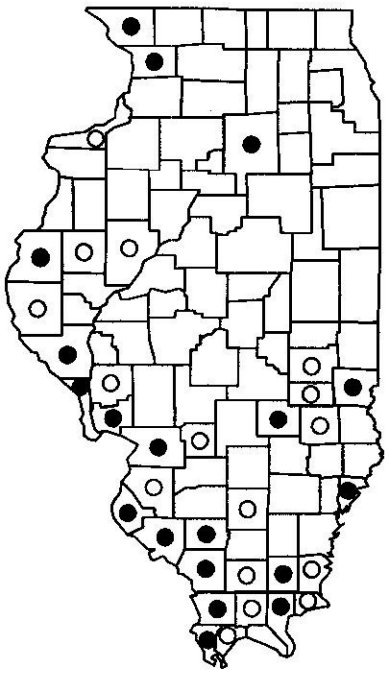
KIRTLAND'S SNAKE **COLUBRIDAE** **Status:** Threatened in Illinois



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.

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.

Cryptobranchus alleganiensis (Daudin)

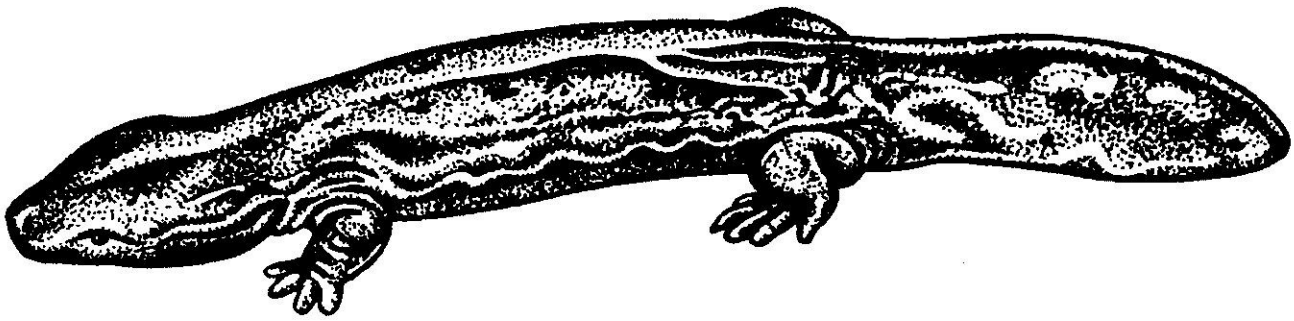
HELLBENDER **CRYPTOBRANCHIDAE** **Status:** Endangered in Illinois

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.

Desmognathus conanti Rossman

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

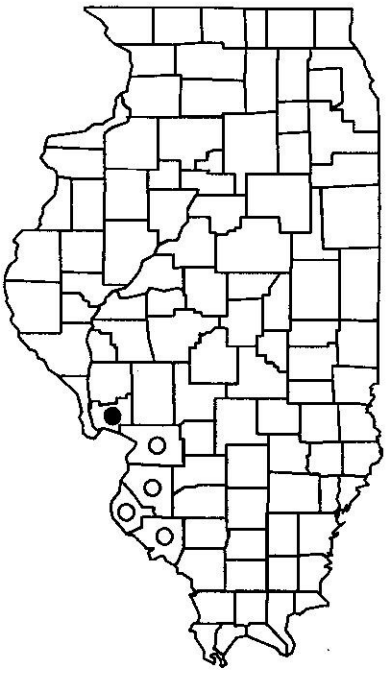
Present Distribution: *Desmognathus conanti* (spotted dusky salamander) occurs in Illinois, western Kentucky, and western Tennessee to the Gulf of Mexico and east to the Florida panhandle. In Illinois, it is known from a few locations in Pulaski County, and one location (possibly introduced) in Johnson 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*.



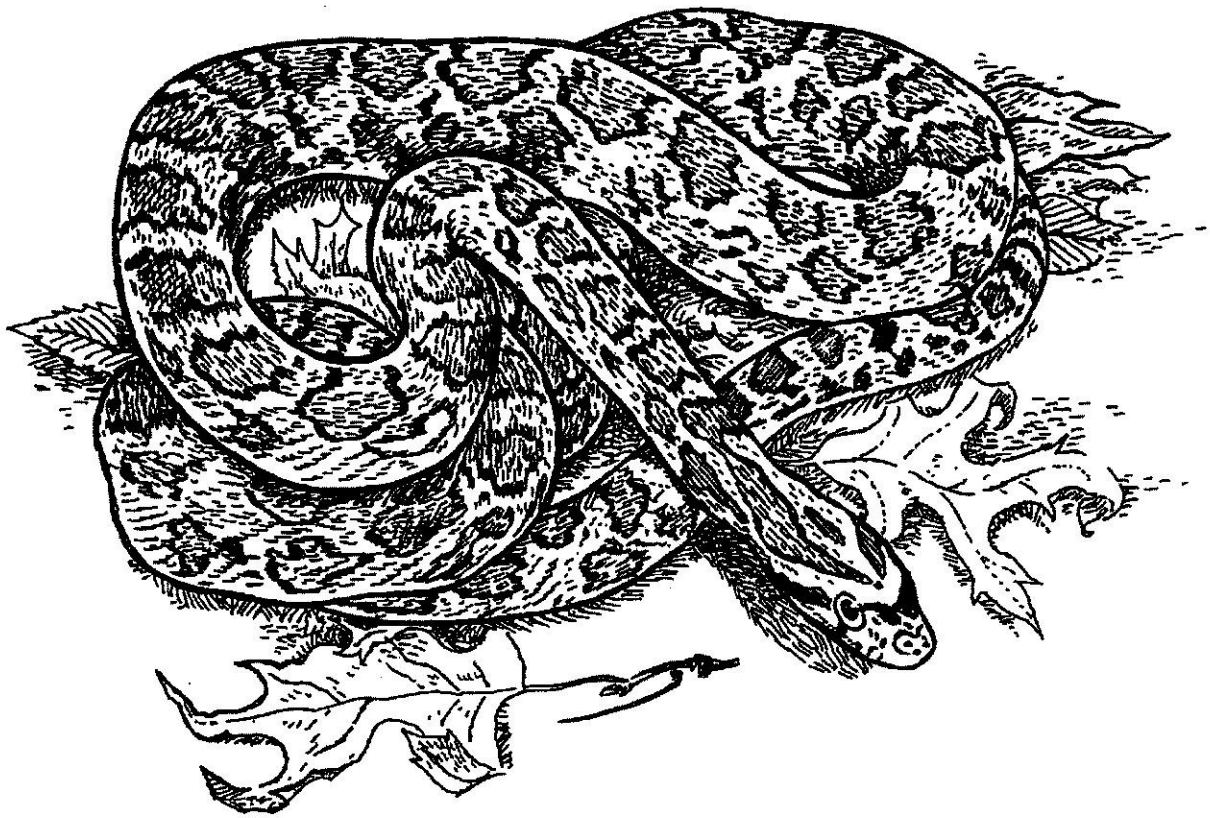
Cryptobranchus alleganiensis
(Hellbender)

Elaphe emoryi (Baird & Girard)

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



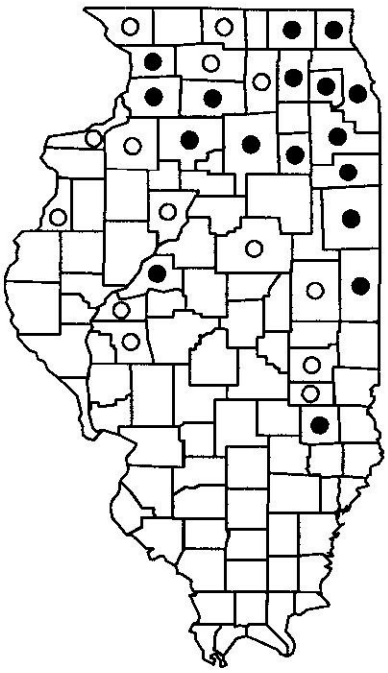
Present Distribution: The Great Plains ratsnake is found throughout much of the south-central United States and northern Mexico (Conant and Collins 1991). In Illinois it is known only from Jersey County south to Randolph County (Smith 1961). Most specimens have been found along the Mississippi River 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.



Elaphe emoryi
(Great Plains Ratsnake)

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.

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).

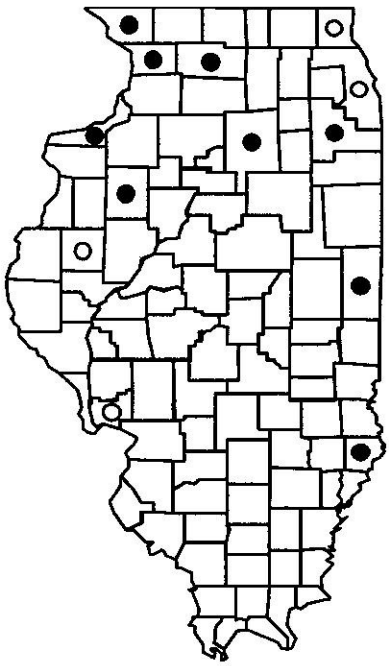
Habitat: In Illinois this species occurs in open, moist areas with abundant ground cover where it feeds regularly on ants. It breeds in temporary and permanent waters such as ponds, lakes, swamp edges, marshy fields, and roadside ditches (Phillips *et al.* 1999).

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.

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).

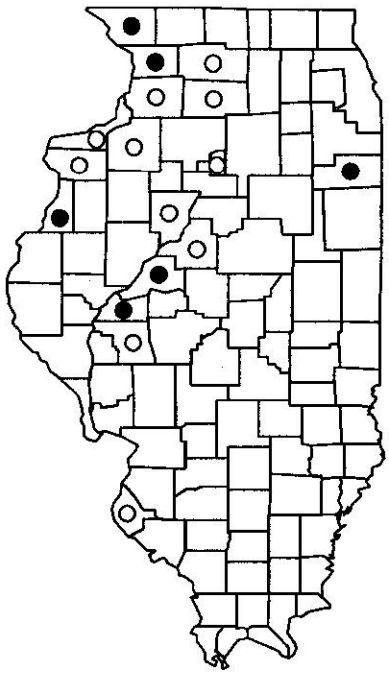
Habitat: In Illinois, four-toed salamanders are found in boggy woodland ponds, sphagnum areas adjacent to woodlands, and springfed headwaters of small woodland streams. Adults are terrestrial, while larvae are aquatic.

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.

Heterodon nasicus Baird & Girard

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



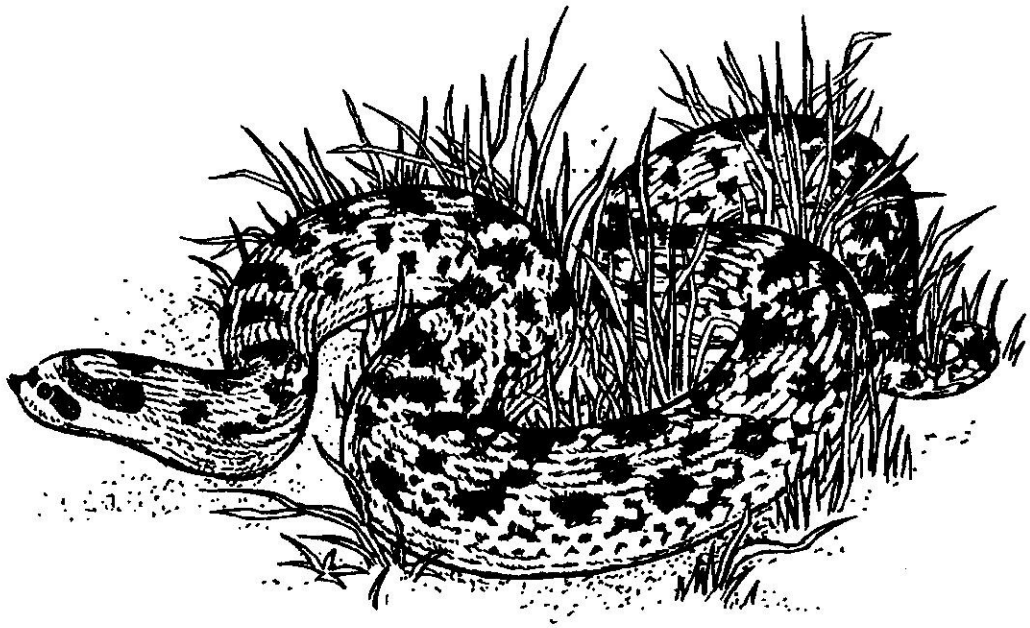
Present Distribution: This species is found from southern Alberta to northern Mexico. Its principal range covers the central Great Plains, but disjunct colonies exist as far east as Missouri and Illinois (Conant and Collins 1991). Most Illinois records are from the sand areas in the northwestern and 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.



Heterodon nasicus
(Western Hognose Snake)

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.

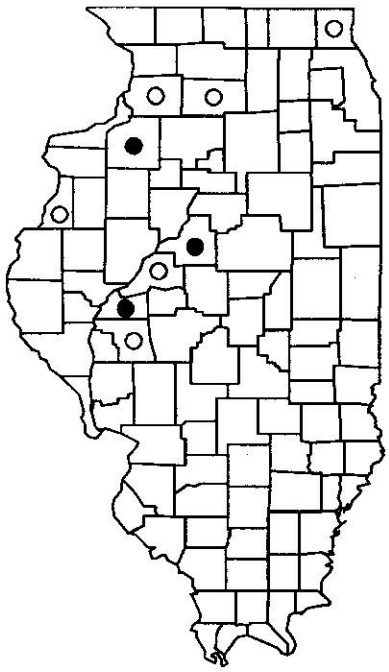
Reason for Status: Bird-voiced treefrogs in Illinois are threatened due to reduced population size and their dependence on a rare and vulnerable habitat.

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.

Kinosternon flavescens
(Illinois Mud Turtle)

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.

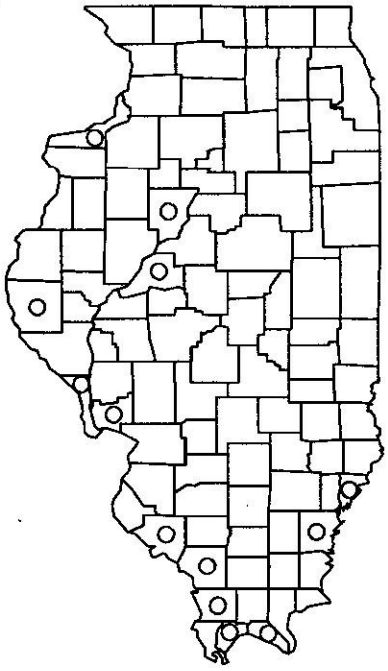
Habitat: The Illinois mud turtle inhabits temporary to permanent ponds in addition to backwaters of rivers in regions with deep sandy soils (Smith 1961, Brown and Moll 1979, Dreslik *et al.* 1998, Phillips *et al.* 1999). In the spring and fall, individuals are aquatic, whereas in summer, mud turtles 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).

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).

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.

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.

Nerodia fasciata (Linnaeus)

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

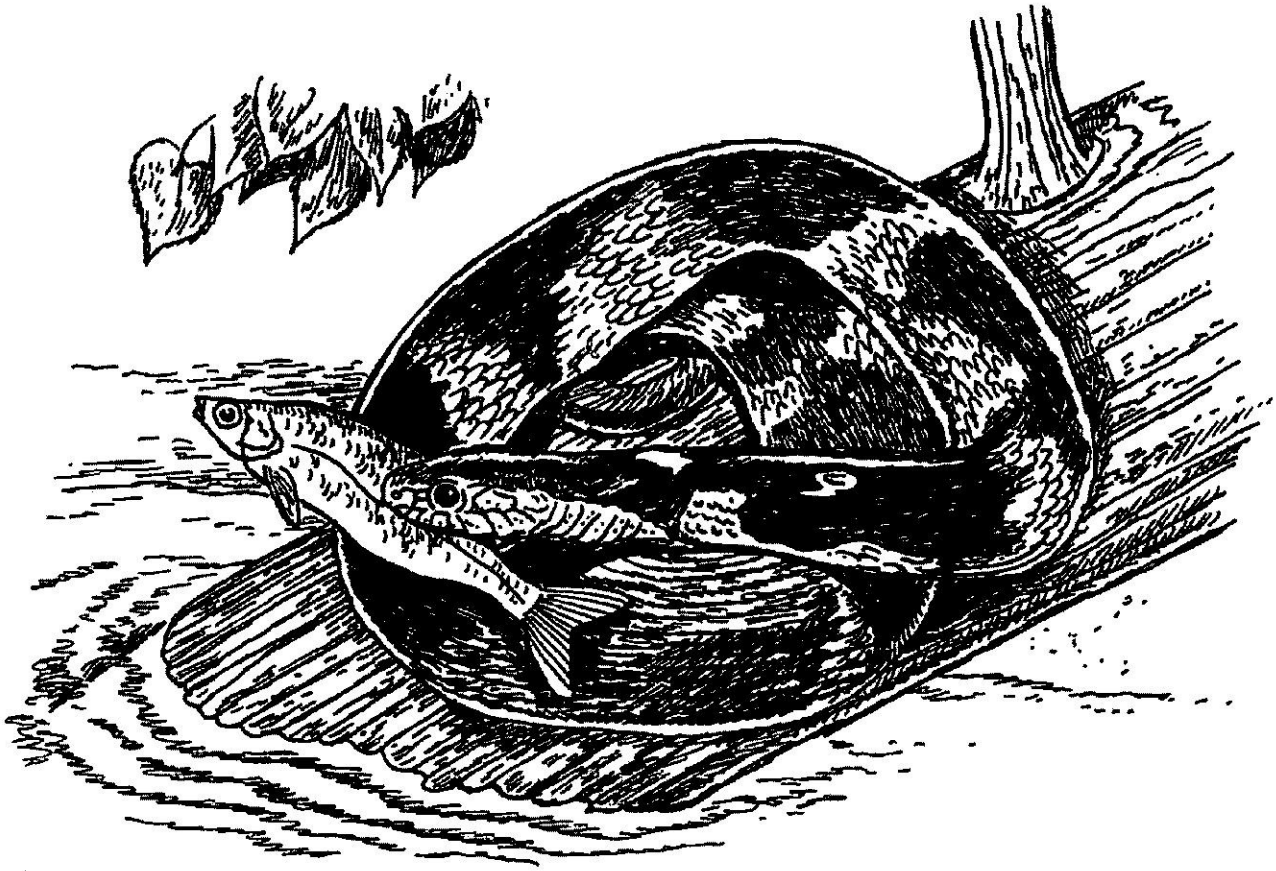
Present Distribution: This aquatic species is found from North Carolina to Florida west to eastern Texas and southern Oklahoma and up the Mississippi River valley to the southern tip of Illinois (Conant and Collins 1991). The subspecies *Nerodia fasciata confluens*, the broad-banded watersnake, occurs 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.

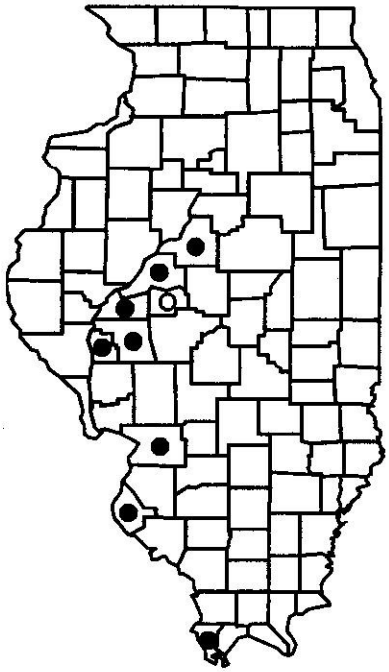
Management Recommendations: Further habitat disturbances at Horseshoe Lake and at similar areas in Alexander County should be kept to a minimum.



Nerodia fasciata
(Broad-Banded Watersnake)

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 Illinois along 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.

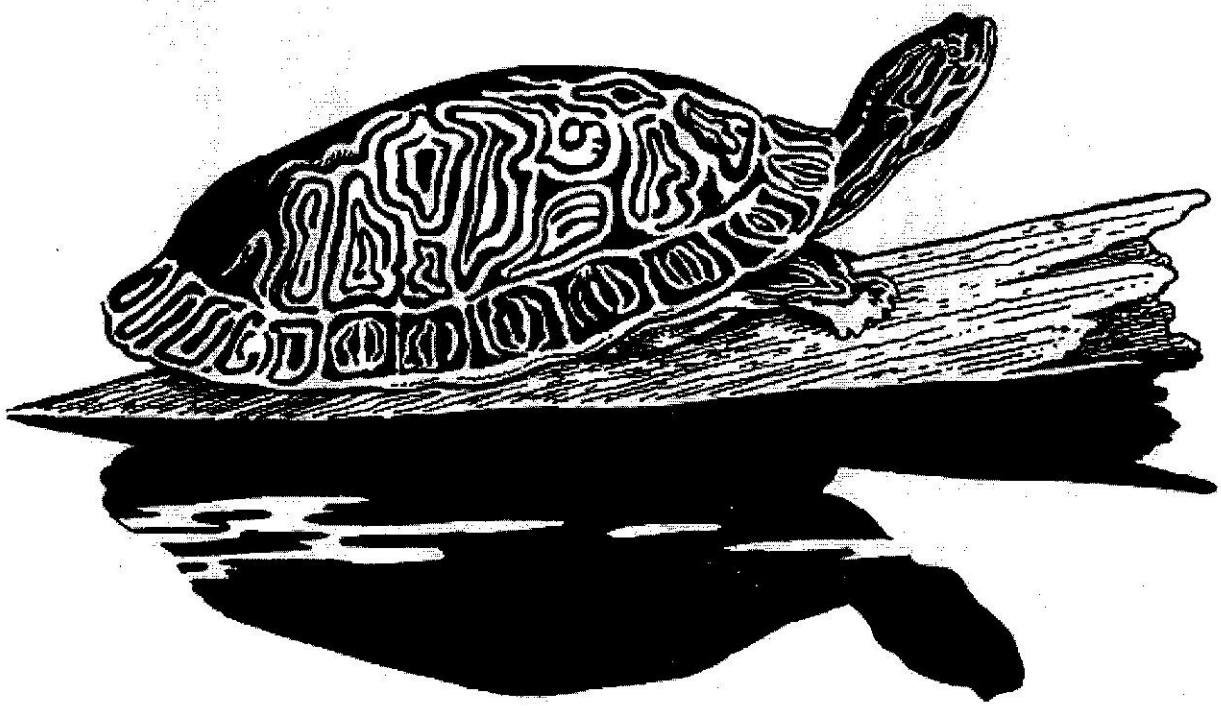
Management Recommendations: Areas harboring large concentrations of this species should be acquired and protected from habitat disturbances. Some reforested blowouts could be returned to their natural state by removing undergrowth.

Pseudacris streckeri
(Illinois Chorus Frog)

Pseudemys concinna (Le Conte)

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

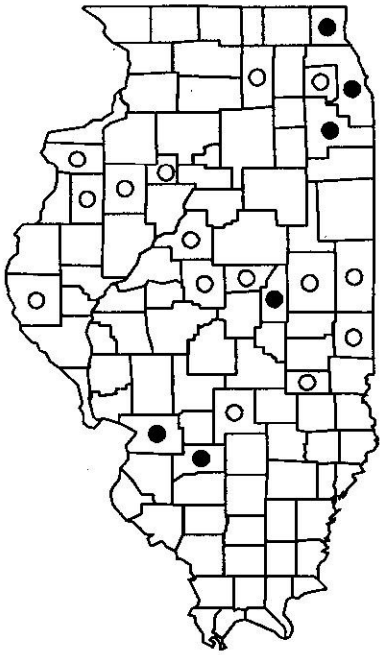
Present Distribution: The river cooter is distributed in the southeastern United States, ranging from the Atlantic Coastal Plain west to eastern Texas, Oklahoma, and Nebraska (Conant and Collins 1991, Dreslik 1998). Once thought to be extirpated from Illinois (Morris and Smith 1981), numerous populations 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.



Pseudemys concinna
(River Cooter)

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.

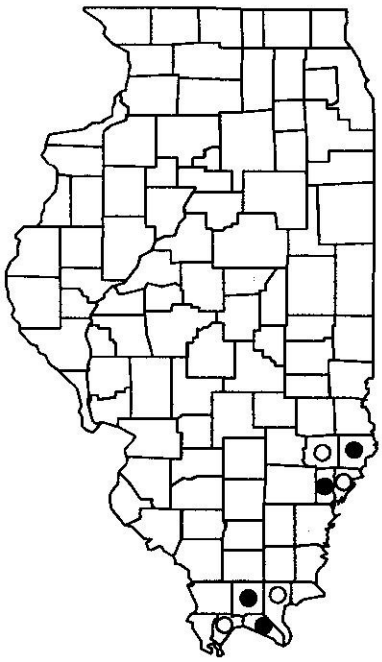
Tantilla gracilis Baird and Girard

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.

Thamnophis sauritus (Linnaeus)

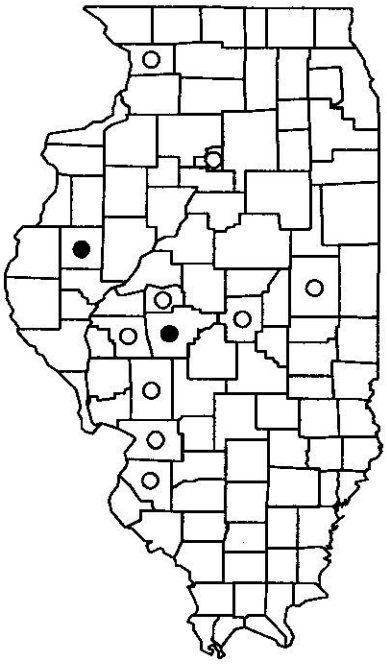
EASTERN RIBBONSNAKE **COLUBRIDAE** **Status:** Threatened in Illinois



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.

Tropidoclonion lineatum (Hallowell)

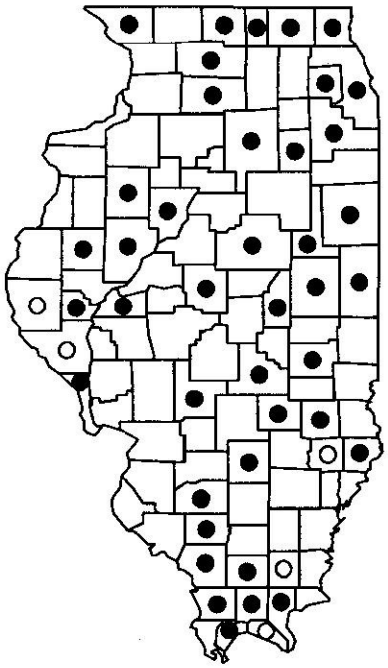
LINED SNAKE **COLUBRIDAE** **Status:** Threatened in Illinois



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.

Ammodramus henslowii (Audubon)

HENSLOW'S SPARROW **EMBERIZIDAE** **Status:** Threatened in Illinois



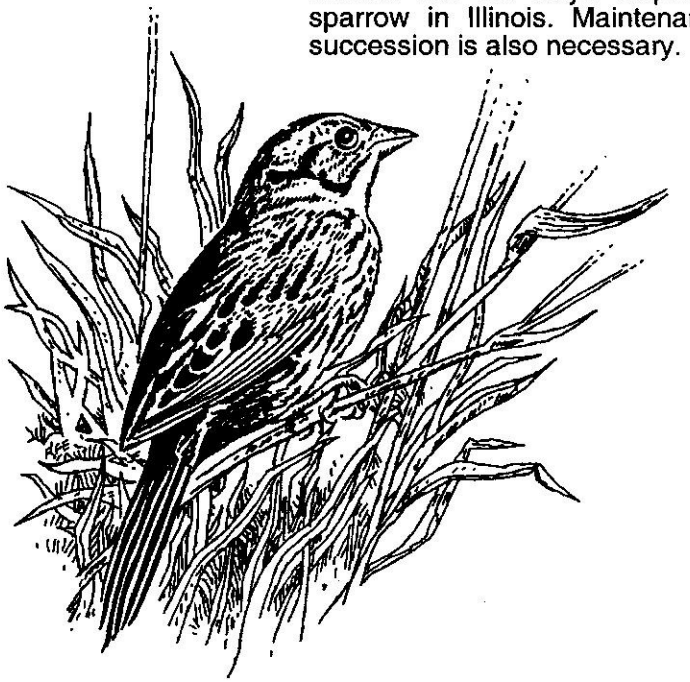
Present Distribution: The Henslow's sparrow breeds locally in the northeastern and east-central U.S. and winters in the Gulf and south Atlantic states. In Illinois it is a uncommon summer resident and an occasional migrant (Bohlen 1989). There are recent summer records from 41 Illinois counties.

Former Illinois Distribution: Ridgway (1889) regarded this species as common or even abundant in Illinois and described it as among the most common species encountered at Fox Prairie (Richland County) in 1871. Nelson (1876b) also considered it rather common in northeastern Illinois. This sparrow probably once nested in prairie habitat throughout the state.

Habitat: The Henslow's sparrow originally nested in prairie habitat, but now also nests in undisturbed grasslands and occasionally hayfields. Important habitat characteristics include a well developed litter layer, tall dense vegetation and the presence of some standing dead residual vegetation (Wiens 1969, Kahl *et al.* 1985, Herkert 1994). Henslow's sparrows also are dependent upon relatively large grassland areas for nesting (Peterson 1983, Bollinger 1995, Herkert 1994), rarely occurring on Illinois grasslands less than 50 ha in size. Nesting success is also higher in large fields (Herkert *et al.* 2003). Burning prevents nesting at established breeding areas until cover is reestablished (Zimmerman 1988, Herkert 1994).

Reason for Status: Loss of grassland nesting habitat appears to have been the primary cause for the decline of this sparrow in Illinois. Additionally, relatively few of the state's remaining grassland areas contain the undisturbed, tall-dense vegetation this species requires. The establishment of undisturbed grassland cover through the Federal Conservation Reserve Program has benefitted this species in Illinois and helped stabilize populations (Herkert 1998).

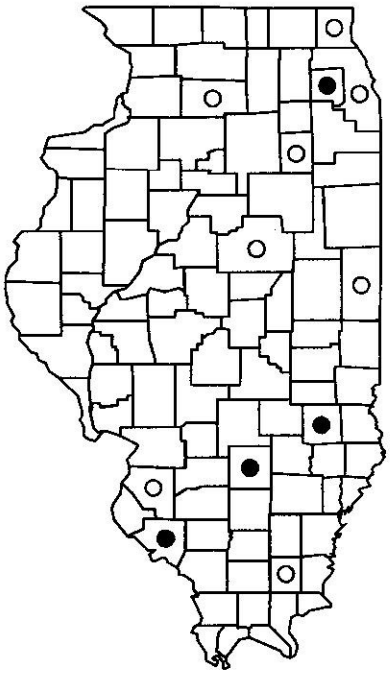
Management Recommendations: Protection of grassland nesting areas and maintenance of undisturbed cover through the nesting season are the major requirements for protecting the Henslow's sparrow in Illinois. Maintenance of fields in the proper state of succession is also necessary.



Ammodramus henslowii
(Henslow's Sparrow)

Asio flammeus (Pontoppidan)

SHORT-EARED OWL **STRIGIDAE** **Status:** Endangered in Illinois



Present Distribution: In North America, short-eared owls breed locally from Alaska and northern Canada south to New York, Illinois, northern Colorado and northern California (Holt and Leasure 1993). They winter from the southern part of their breeding range to as far south as Guatemala. This owl is a rare summer resident and an uncommon migrant and winter resident throughout the state (Bohlen 1989). In 1990 this species nested at five locations in Jasper, Lee, Marion and McLean counties, the first documented nesting in the state since 1973. The species is now a more regular, though still erratic breeder in the state, with confirmed nesting in four years and possible breeding in four additional years between 1991-2001.

Former Illinois Distribution: Cory (1909) believed this owl nested in Cook County, and Ford (1956) emphasized an erratic nesting behavior in Illinois. Sporadic nesting probably formerly occurred across the northern half of Illinois wherever appropriate habitat was available. Wintering birds have apparently always been locally common in Illinois.

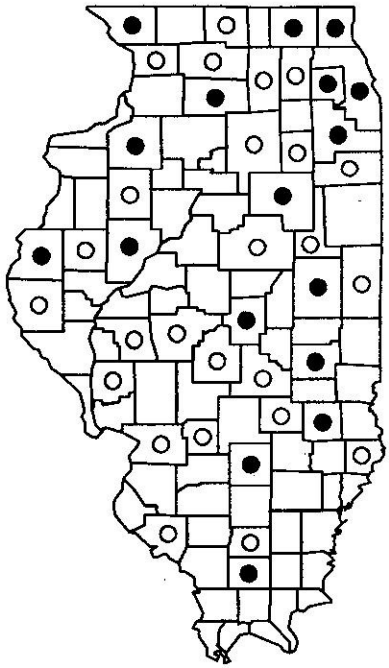
Habitat: The short-eared owl nests on the ground in open country including prairies, meadows, marshes, savanna and dunes usually in vegetation 30-60 cm in height (Duebbert and Lokemoen 1977). In Illinois the short-eared owl nests in wet prairie habitats (Birkenholz 1975), agricultural set-aside lands, and managed conservation areas. Most recent nest records for Illinois are from grassland areas at least 50 ha in size.

Reason for Status: Destruction of grassland and wetland habitat have probably been the primary factors creating the precarious status of this owl as a breeding species in Illinois. Populations are known to fluctuate widely in response to small mammal abundance (Holt and Leasure 1993). The extremely low breeding population and erratic nesting behavior make the short-eared owl's continued presence unpredictable even in known nesting areas.

Management Recommendations: Since most recent nesting records of this species in Illinois are from large grassland areas, the preservation of large blocks of prairie and marsh habitat appear essential. Within Illinois this species appears to prefer grasslands that have been recently managed (within the last 12 months) over those that are idle for nesting (Herkert *et al.* 1999).

Bartramia longicauda (Bechstein)

UPLAND SANDPIPER **SCOLOPACIDAE** **Status:** Endangered in Illinois



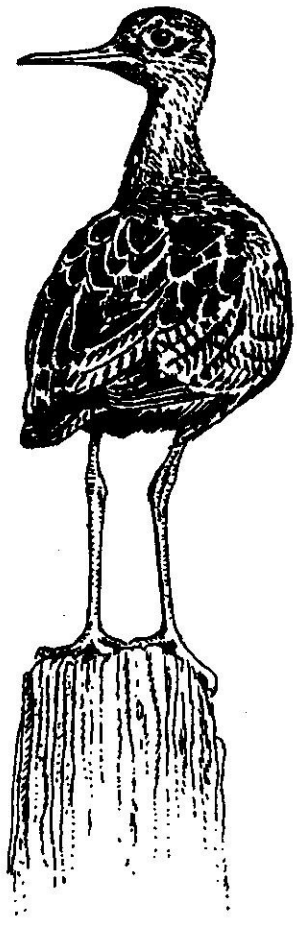
Present Distribution: The main portion of this species breeding range extends from southern Canada south to the central United States, from the Rocky Mountains east to the Appalachian Mountain region (Houston and Bowen 2001). Sparse and often isolated populations occur west of its main range in the United States with small numbers also breeding in Alaska. This species winters in South America. It occurs as an uncommon summer resident and migrant throughout Illinois (Bohlen 1989).

Former Illinois Distribution: The upland sandpiper was once a very common summer resident throughout Illinois (Nelson 1876b, Ridgway 1895, Ford 1956). However, it was hunted nearly to extinction before it was given protection (Ridgway 1915).

Habitat: In Illinois, the upland sandpiper usually inhabits prairies, pastureland and hayfields with an average grass height less than 30 cm (Graber and Graber 1963, Buhnerkempke and Westemeier 1988). However, late spring burns and drought may allow this species to utilize areas of normally taller grasses. Grasslands adjacent to airports also are sometimes utilized by this species in Illinois (Becker 1980). Grasslands utilized by this species also tend to be large (Bollinger 1991, Herkert 1991a, 1991b, Helzer and Jelinski 1999, Walk and Warner 1999).

Reason for Status: Upland sandpiper populations in the state have declined considerably and few populations are known that consist of more than just a few individuals. The continued loss and fragmentation of grassland habitat (pasture, hayfields, and upland prairie) continues to threaten this species' persistence in Illinois.

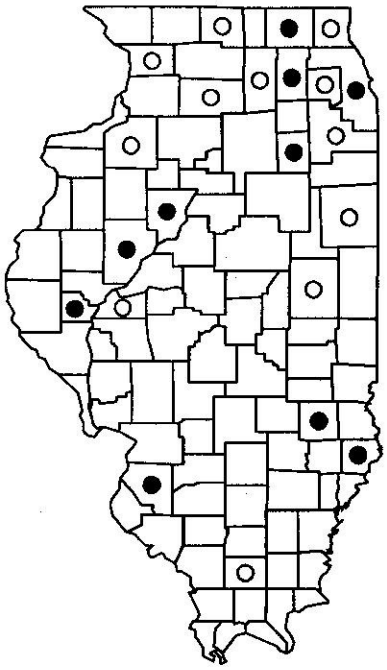
Management Recommendations: Preservation and proper management of large grassland areas are critical for this species. Grazing, prescribed burning or mowing are essential in order to provide the short areas required for foraging and brood rearing and taller areas required for nesting (Houston and Bowen 2001). A reduction in disturbance levels in pastures and hayfields also would likely benefit this species (Houston and Bowen 2001).



Bartramia longicauda
(Upland Sandpiper)

Botaurus lentiginosus

AMERICAN BITTERN **ARDEIDAE** **Status:** Endangered in Illinois



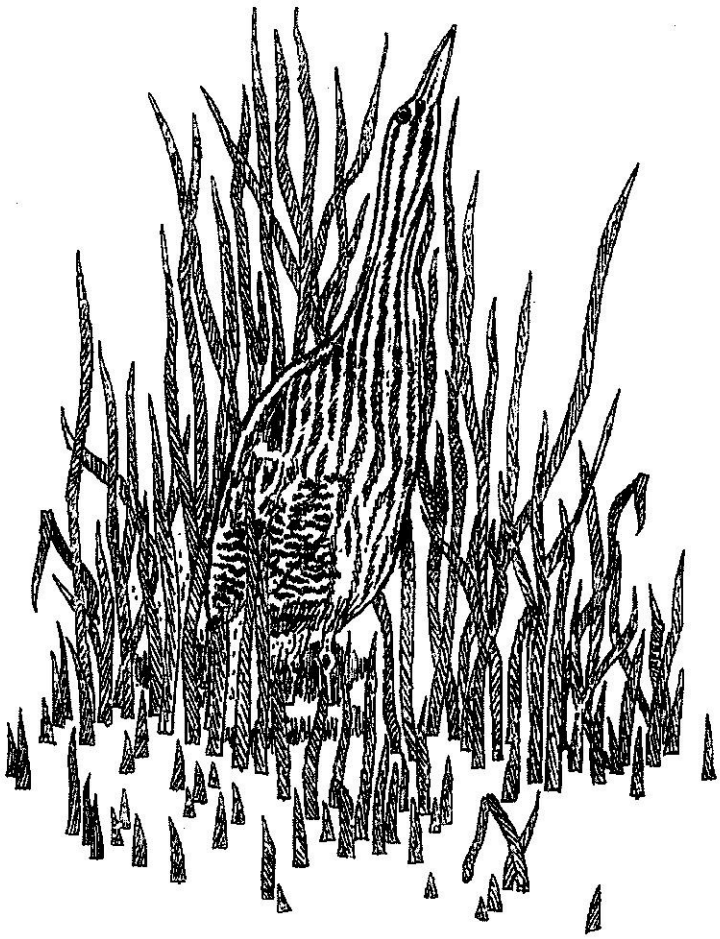
Present Distribution: The American bittern breeds from southeastern Alaska and Newfoundland south to southern California, Kansas, Mexico and Florida. It winters north to British Columbia, Ohio, and Delaware. In Illinois it is a rare summer resident and an uncommon migrant and winter resident (Bohlen 1989).

Former Illinois Distribution: The American bittern probably once nested in wet prairie and marsh habitat throughout Illinois. Nelson (1876b), Cory (1909), and Ford (1956) all indicated that this species was a common summer resident in northern Illinois.

Habitat: In Illinois this bittern usually inhabits freshwater marshes and marshy lake shores. Nelson (1876b) reported prairie sloughs as nest sites and Beecher (1942) reported a nest among cattails, bulrushes, and sedges just above water level at a marsh edge. Nesting also has been noted at woodland ponds (Graber *et al.* 1978).

Reason for Status: The American bittern is a solitary and secretive species usually with widely scattered nests and low population levels. The nesting population in Illinois has declined greatly since the early 1900s, most likely as a result of wetland loss and degradation.

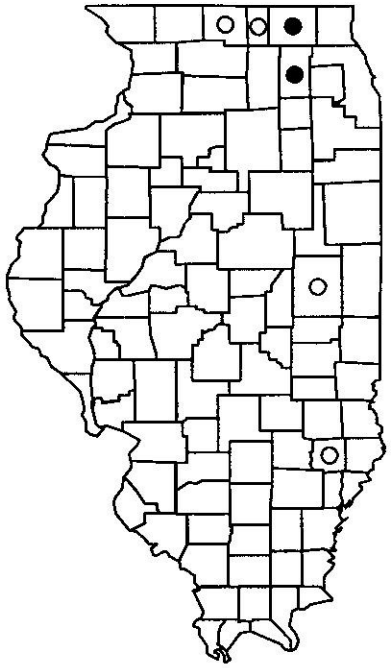
Management Recommendations: Preservation and/or restoration of freshwater wetland habitats, especially large (>10 ha), shallow wetlands with dense robust emergent growth is the most urgent management need (Gibbs *et al.* 1992).



Botaurus lentiginosus
(American Bittern)

Buteo swainsoni (Bonaparte)

SWAINSON'S HAWK **ACCIPITRIDAE** **Status:** Endangered in Illinois



Present Distribution: This western hawk breeds from Alaska and western Minnesota south to Texas and northern Mexico, rarely occurring in Illinois and Missouri. It winters from Florida south to South America. The Swainson's hawk occurs in Illinois as a rare local summer resident and a rare migrant in northern Illinois (Bohlen 1989). Recent nesting has occurred only in Kane and McHenry Counties.

Former Illinois Distribution: This species may have formerly occurred as a rare or local summer resident in appropriate habitat in the northern two-thirds of Illinois. Nelson (1876b) considered it rare in northeastern Illinois. Historic nesting records are available for Richland, Champaign, Winnebago and Boone counties (Ridgway 1889, Hess 1910, Bohlen 1989).

Habitat: The Swainson's hawk occupies open grasslands, usually placing its nest in an isolated tree. Recent nesting in Illinois has occurred in open bur oak woodlands adjacent to agricultural areas. Prairies or open fields are apparently necessary for foraging.

Reason for Status: The Swainson's hawk occurs at the eastern limit of its range in Illinois. Although it has probably always been relatively uncommon in Illinois, it was formerly more widespread in the state and is now very locally distributed with usually only one or two nests occurring annually.

Management Recommendations: Protection of nesting birds from human disturbance is an important factor, since disturbances during nest building and incubation may cause nest desertion (Keir *et al.* 1976, Sharp 1986, England *et al.* 1997). Destruction of nest trees also needs to be prevented (Sharp 1986).

Buteo swainsoni
(Swainson's Hawk)

Charadrius melodus (Ord)

PIPING PLOVER **CHARADRIIDAE** **Status:** Endangered in Illinois
Federally Endangered in the Great Lakes Region

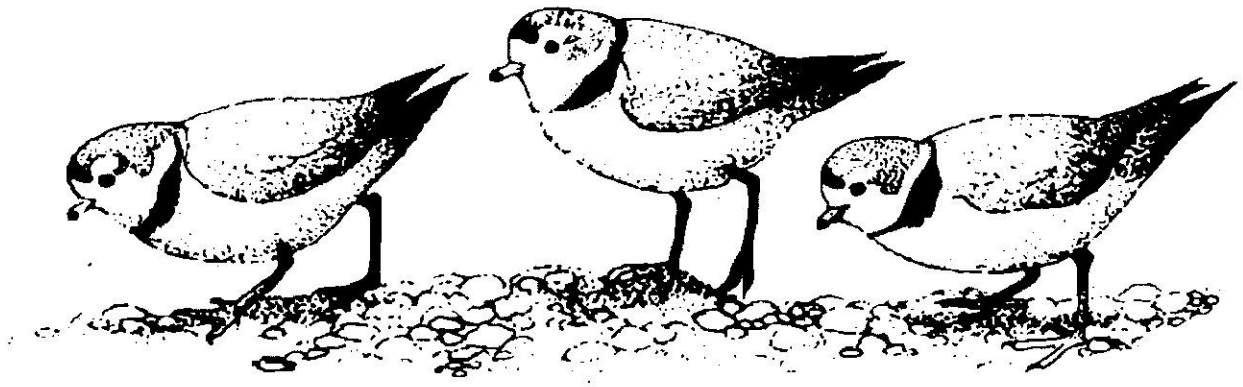
Present Distribution: This sparrow-sized plover nests from Newfoundland south along the Atlantic Coast to the Carolinas and locally inland along the Great Lakes to the northern Great Plains. It winters from the Carolinas southward along the Atlantic and Gulf coasts to the West Indies and Mexico. The piping plover occurs in Illinois as a rare migrant and formerly very rare resident along Lake Michigan. No recent nest sites are known for Illinois, this species last successfully bred near Lake Michigan in 1979.

Former Illinois Distribution: The piping plover apparently has never nested far from Lake Michigan in Illinois, breeding primarily on the beach zone. Nelson (1876b) listed it as a very common summer resident along the lake shore and reported finding 24 breeding pairs per km of beach at several points along the lake. Nesting also formerly occurred at Powderhorn Marsh, Wolf Lake, and Lake Calumet, all in Cook County (Russell 1973). Populations of piping plovers started to decline in the 1940s and by 1955 had disappeared from the state (Bohlen 1989). In 1973 and again in 1979, however, a pair nested near Waukegan.

Habitat: Nelson (1876b) described the habitat of this species in Illinois as pebbly beach between the sand dunes and shore, although fill composed of cinders has been used at Lake Calumet (Russell 1973). The eggs are laid in a depression in the sand that is usually lined with pebbles (Bull and Farrand 1977).

Reason for Status: The piping plover has always occupied a restricted habitat in Illinois and began to decline with the increased recreational use of its habitat in the 1940s. Recreational and vehicular use of the Lake Michigan shoreline, especially during the initial nesting period, may be preventing this species from nesting in Illinois. Also, storm erosion of sand beaches, coupled with erosion from altered lakeshore currents, have caused a significant loss of habitat for the piping plover in Illinois.

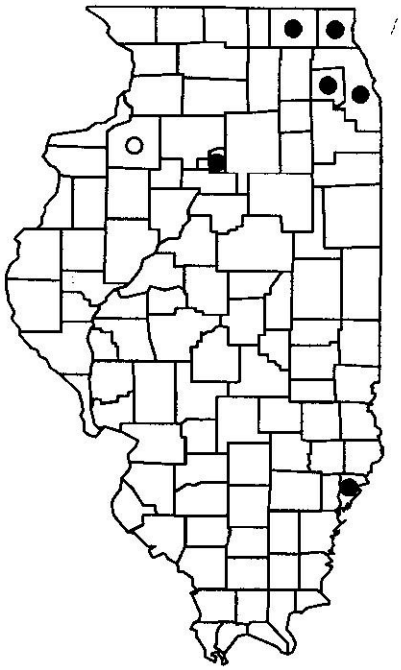
Management Recommendations: Preservation of nesting habitat and protection of beach areas from human disturbance (during the nesting season) would be the most important factors in trying to reestablish the piping plover as a breeding bird in Illinois. In 2001, 10.2 km of Lake Michigan shoreline in Illinois was designated as critical habitat for the Piping Plover in Illinois (USFWS 2001).



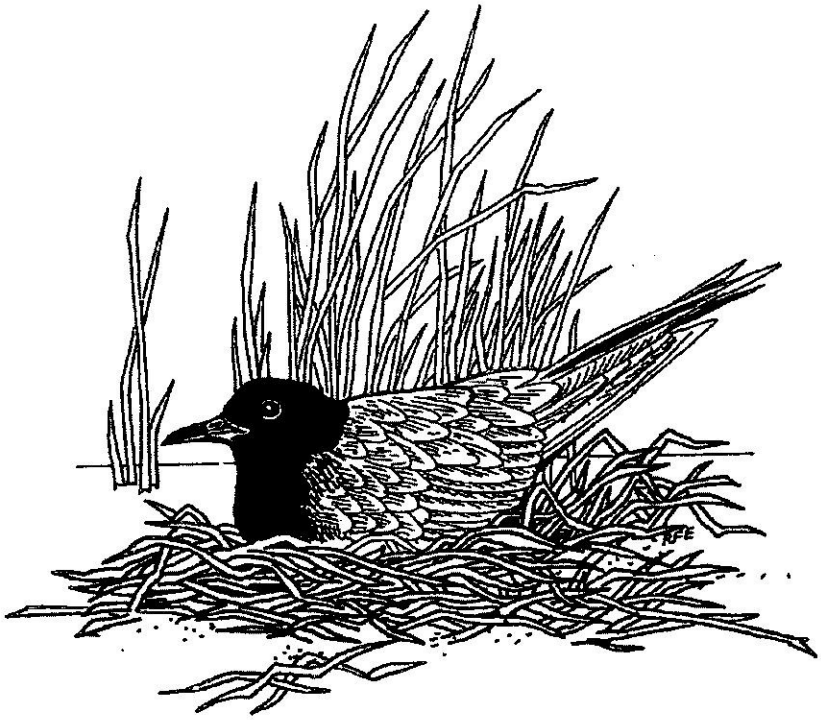
Charadrius melodus
(Piping Plover)

Chlidonias niger (Linnaeus)

BLACK TERN **LARIDAE** **Status:** Endangered in Illinois



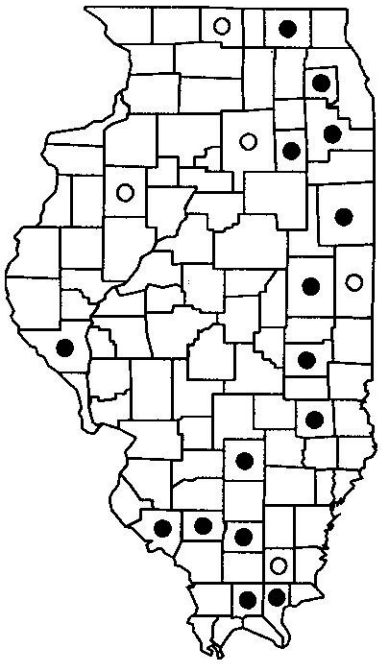
Present Distribution: The black tern breeds from Nova Scotia, Alaska, and the Mackenzie District south to Pennsylvania, Missouri, and California. It winters in South America. This species occurs throughout Illinois as a common migrant and an uncommon summer resident in the extreme northeastern counties. Most recent nesting in Illinois has been restricted to four counties in the northeastern portion of the state.
Former Illinois Distribution: The black tern was once considered an exceedingly abundant summer resident upon all the larger marshes, prairie sloughs, and inland lakes in northeastern Illinois (Nelson 1876b, Cory 1909). It's distribution has probably always been largely restricted to the northeastern part of the state.
Habitat: Habitat for the black tern in Illinois consists of freshwater marshes and shallow ponds and lakes, which provide an ample amount of cover and open water. Nests are placed on floating mud mats, cattail root stocks, muskrat lodges and boards (Heidorn *et al.* 1991). Nests usually occur in water 0.5-1.2 m deep in areas with 25%-75% of the water's surface covered with emergent vegetation (Dunn and Agro 1995). Brown and Dinsmore (1988) have shown that this species is dependent upon large wetlands with open water or a group of small wetlands in a large wetland complex for successful reproduction.
Reason for Status: The black tern has a low population in Illinois with 20-60 nests occurring annually in recent years. Changing wetland conditions due to urban development, and drainage for cultivation and construction, are eliminating habitat suitable for this species in Illinois.
Management Recommendations: Maintenance of high water quality, protection of wetland habitat from destruction or alteration, and avoidance of human disturbance to breeding areas during the breeding season should be the primary means of protecting this species in Illinois.



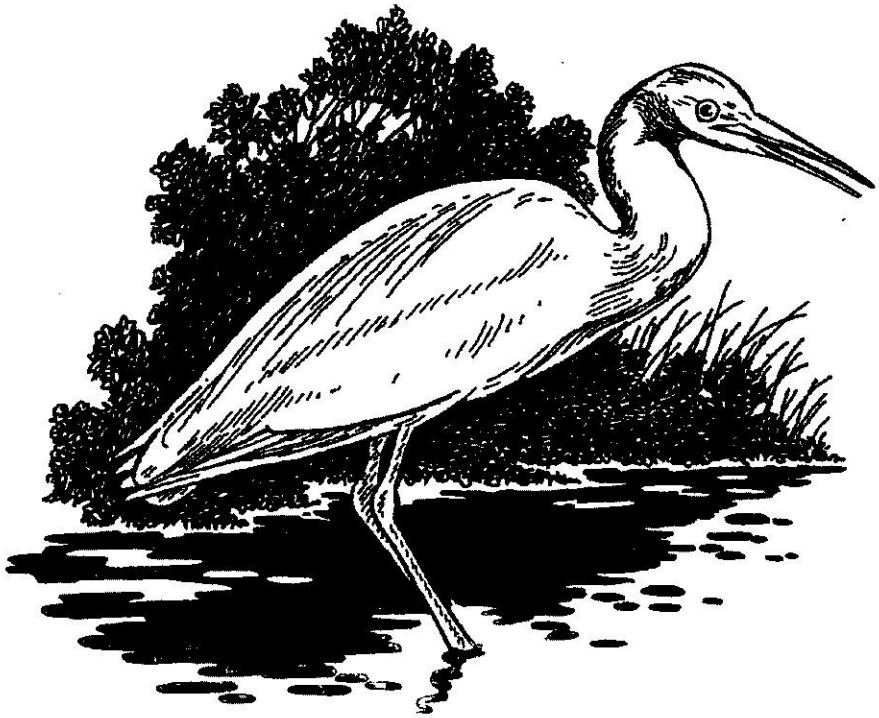
Chlidonias niger
(Black Tern)

Circus cyaneus (Linnaeus)

NORTHERN HARRIER **ACCIPITRIDAE** **Status:** Endangered in Illinois



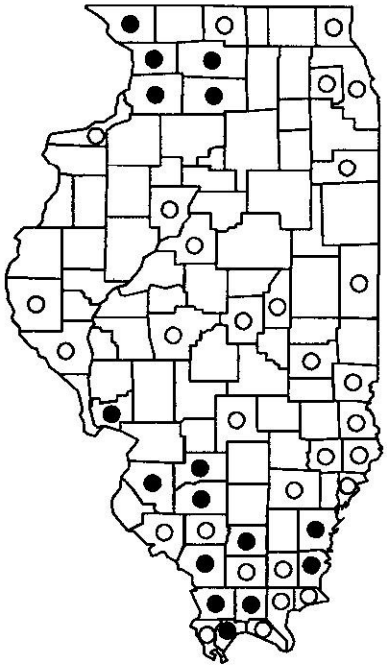
Present Distribution: The northern harrier nests from Alaska, the Mackenzie District, and Newfoundland south to Virginia and northern Mexico and winters south from British Columbia, Wisconsin, and New Brunswick. It is an occasional summer resident and a common migrant and winter resident in open country throughout Illinois (Bohlen 1989).
Former Illinois Distribution: Ridgway (1889) described the northern harrier as a species of very extensive distribution in Illinois, but also noted that very little was known about it habits.
Habitat: In Illinois, harriers are most often observed during migration as they hunt over pastures and fallow fields. Nesting is usually restricted to relatively large undisturbed grasslands and marshes, with tall-dense vegetation (> 60 cm; Duebbert and Lokemoen 1977). The nest is usually placed on the ground in open treeless habitats including both wet and dry areas (MacWhirter and Bildstein 1996). Most harrier nests in Illinois occur in grasslands at least 60 ha in size and include a variety of cover types such as prairie grasses, brome, timothy, fallow fields, and even wheat fields.
Reason for Status: As a breeding bird, this species is rare in Illinois. Destruction of grasslands and marsh nest habitat probably led to the decline of its once wide distribution. The population decline, present status, and habitat of this species are similar to those of the short-eared owl although this species is less erratic in its occurrence.
Management Recommendations: Preservation of large blocks of prairie and marsh habitat are essential for this species. This species also prefers undisturbed cover for nesting (Herkert *et al.* 1999). Nesting success may also be higher in undisturbed grasslands (Toland 1986).



Egretta caerulea
(Little Blue Herson)

Dendroica cerulea (Wilson)

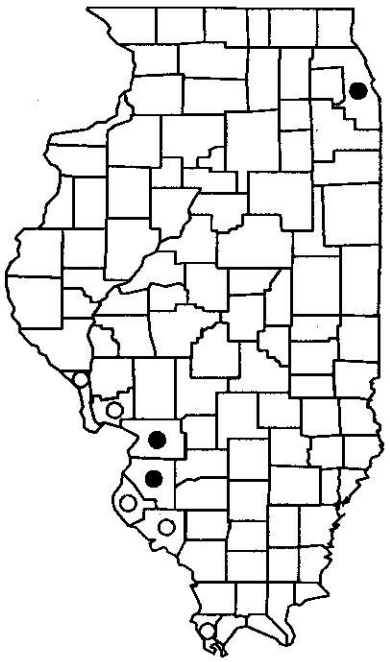
CERULEAN WARBLER **PARULIDAE** **Status:** Threatened in Illinois



Present Distribution: The cerulean warbler breeds mainly from central Minnesota east to Ontario and New Jersey, and south to eastern North Carolina, Tennessee and Arkansas. Within this range it is unevenly distributed (Hamel 2000). In Illinois this species is most common in the southern and southwestern portions of the state, with scattered populations also occurring in the east-central and northern parts of the state (Kleen *et al.* 2004).
Former Illinois Distribution: In the 1800s the cerulean warbler was considered to be the most common of the summer resident warblers in some portions of the state (Ridgeway 1889). In the early 1900s it was described as "common in the southern part of the state, but casual or rare in northern Illinois" (Cory 1909). This species likely had a distribution that once included nearly every county in the state, although actual historic records are available from only a small number of Illinois counties (Graber *et al.* 1983).
Habitat: Throughout its range, this species is associated with forested landscapes where it is usually found in mature forests with large and tall trees and an open understory (Hamel 2000). In Illinois, the majority of birds occupy tall, diverse floodplain forests or white-oak dominated slopes; they are most common in forests greater than 1,000 acres and rarely occur in forest tracts less than 200 acres (Roseberg *et al.* 2000).
Reason for Status: Illinois is near the center of the cerulean warbler's historic range, and this species was abundant within the state during historic times. Today the cerulean warbler is rare, patchily distributed and extremely area sensitive in the state.
Management Recommendations: Main conservation actions required include protection of mature deciduous forest (especially along stream valleys), maintenance of large forest tract sizes, use of long-term, uneven aged timber management, and maintenance of favored tree species, especially oaks, sycamores, elms and chestnut (Robbins *et al.* 1992, Hamel 2000).

Egretta caerulea (Linnaeus)

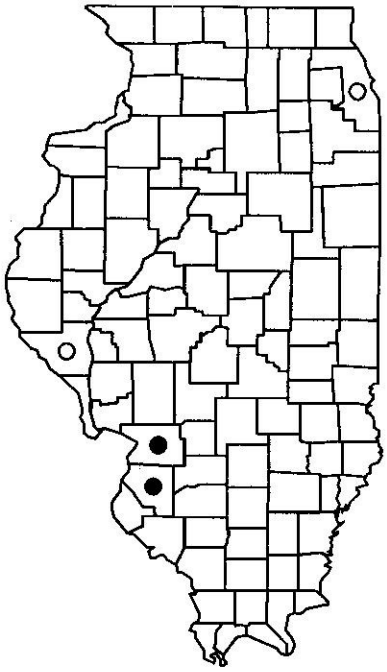
LITTLE BLUE HERON **ARDEIDAE** **Status:** Endangered in Illinois



Present Distribution: The little blue heron breeds from southern Illinois and New England southward throughout the southern Atlantic states and the Mississippi River Valley to southern South America. In Illinois, it is an uncommon migrant and local summer resident in the south and a postbreeding wanderer throughout the rest of the state (Bohlen 1989). This species has recently bred at six locations in the state.
Former Illinois Distribution: Little information is available on the past distribution and abundance of this species in Illinois. Cory (1909) considered the little blue heron to be fairly common in southern Illinois in late summer, probably as a result of postbreeding influx.
Habitat: In Illinois, this species typically nests in association with other herons (black-crowned night-herons, great egrets, and cattle egrets). Nests are often placed in stands of young trees, primarily black willows and cottonwoods that form dense thickets (Graber *et al.* 1978). Feeding takes place in shallow waters of lagoons, marshes, and swampy areas.
Reason for Status: The low population level, few nesting locations, and continued risk of wetland destruction jeopardizes the prospect for this species' long-term survival in Illinois.
Management Recommendations: Preservation of marsh and lagoon habitat is of highest priority. In these areas, isolated thickets of trees should be maintained for nest habitat. Protection from disturbance at nesting sites also is beneficial. Buffer zones of 100-m are recommended for nesting sites (Erwin 1989, Rodgers and Smith 1995).

Egretta thula (Molina)

SNOWY EGRET **ARDEIDAE** **Status:** Endangered in Illinois



Present Distribution: The snowy egret breeds from northern California, Oklahoma, and Maine south to southern South America and winters regularly north to California and South Carolina. This egret is a rare migrant and postbreeding wanderer throughout Illinois, and a rare local summer resident in St. Clair and Madison counties.

Former Illinois Distribution: Nesting of the snowy egret in Illinois has probably always been largely restricted to the American Bottoms of the Mississippi River, although records of post-breeding wanders are available from throughout the state. Snowy egret numbers were greatly reduced by plume hunters during the 19th and early 20th centuries throughout their entire U.S. range (Cooke 1913) and apparently were eliminated from Illinois during this period (Widmann 1907). They had reappeared by 1934 (Jones 1935) but probably have never had a large breeding population in the state (Graber *et al.* 1978)

Habitat: In Illinois, snowy egrets nest in lowland thickets or forest in association with other species of colonial herons, especially little blue herons (Graber *et al.* 1978). Foraging is generally restricted to lagoons and marshes of the American Bottoms.

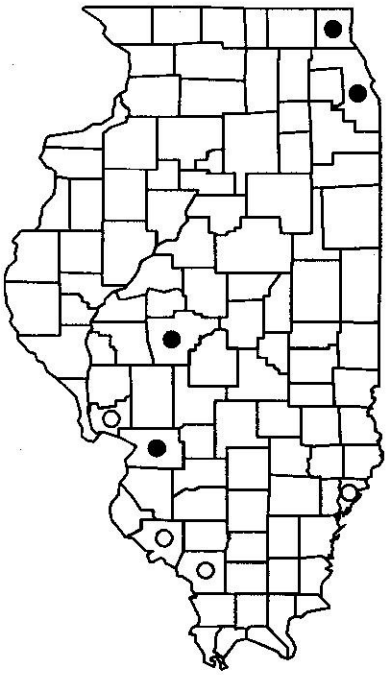
Reason for Status: At present snowy egrets usually nest at only one location in Illinois where 10-50 nests occur annually. The small breeding population and concentrated nesting of this species severely jeopardize its chances for long-term survival in Illinois. The cattle egret is similar in ecology to this heron and may compete with it for feeding and nesting space (Graber *et al.* 1978).

Management Recommendations: Protection of forage and nest sites from disturbance and human encroachment is critical to the survival of the snowy egret as a breeding species.

Egretta thula
(Snowy egret)

Falco peregrinus (Tunstall)

PEREGRINE FALCON **FALCONIDAE** **Status:** Threatened in Illinois



Present Distribution: The peregrine falcon formerly bred from Alaska and Greenland south to Georgia and Baja California, but was completely eliminated from the eastern U.S. by 1970. In 1974 there were only 60 pairs of peregrine falcons known to nest in the contiguous U.S.. Since this time, over 3,000 peregrine falcons have been reintroduced into their former range and in 1998 there were over 1,000 pairs nesting in 41 states. The species has been successfully reintroduced in the Chicago and St. Louis metropolitan areas.

Former Illinois Distribution: The peregrine falcon once nested locally throughout Illinois. Nelson (1876b) considered it an occasional summer resident in northern Illinois and Ridgway (1889) found several pairs nesting in the cavities of large sycamores in Wabash County. Prior to the Chicago reintroduction program, which began in 1986, the last known nesting in the state occurred in Jackson County in 1951 (Bohlen 1989).

Habitat: Habitat for this species is usually described as open country along large rivers, lakes, and coastlines. High cliffs are often used as nest sites. In Illinois, breeding is presently restricted to buildings, bridges and other man-made structures in the Chicago and St. Louis metropolitan areas.

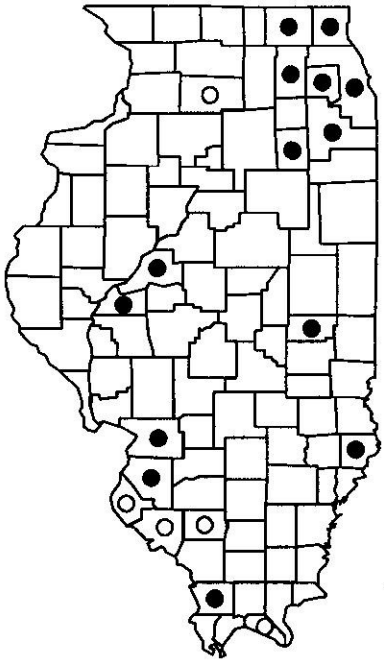
Reason for Status: This species was extirpated from large portions of its range primarily due to the widespread use of pesticides. It has now been successfully reintroduced into many eastern cities, the Illinois population has increased but remains small, with only 10 nesting pairs the last few years (2001-2003). Due to its' recent population increase in Illinois, the peregrine falcon has met the reclassification goals for a change in status from Endangered to Threatened within Illinois. Its status in Illinois was changed from endangered to threatened in 2004. There is, however, some evidence that PCBs, DDE, and mercury may still be a threat to this species in some portions of its' range (Cochran *et al.* 1992).

Management Recommendations: The peregrine falcon is tolerant of humans and is being successfully reintroduced into suitable habitat in many areas. Since reintroduction efforts are proving successful, eventual recovery to former population levels is a possibility.

Falco peregrinus
(Peregrine Falcon)

Gallinula chloropus (Linnaeus)

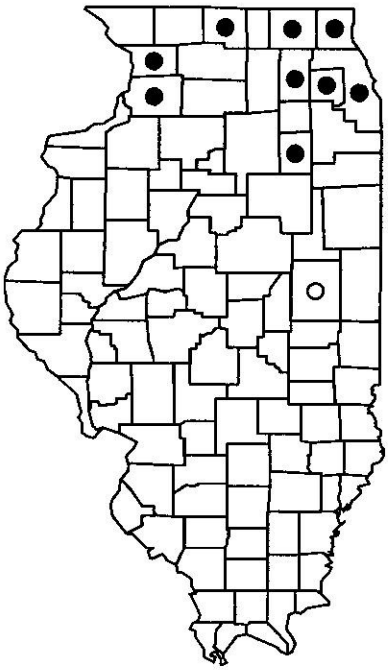
COMMON MOORHEN **RALLIDAE** **Status:** Threatened in Illinois



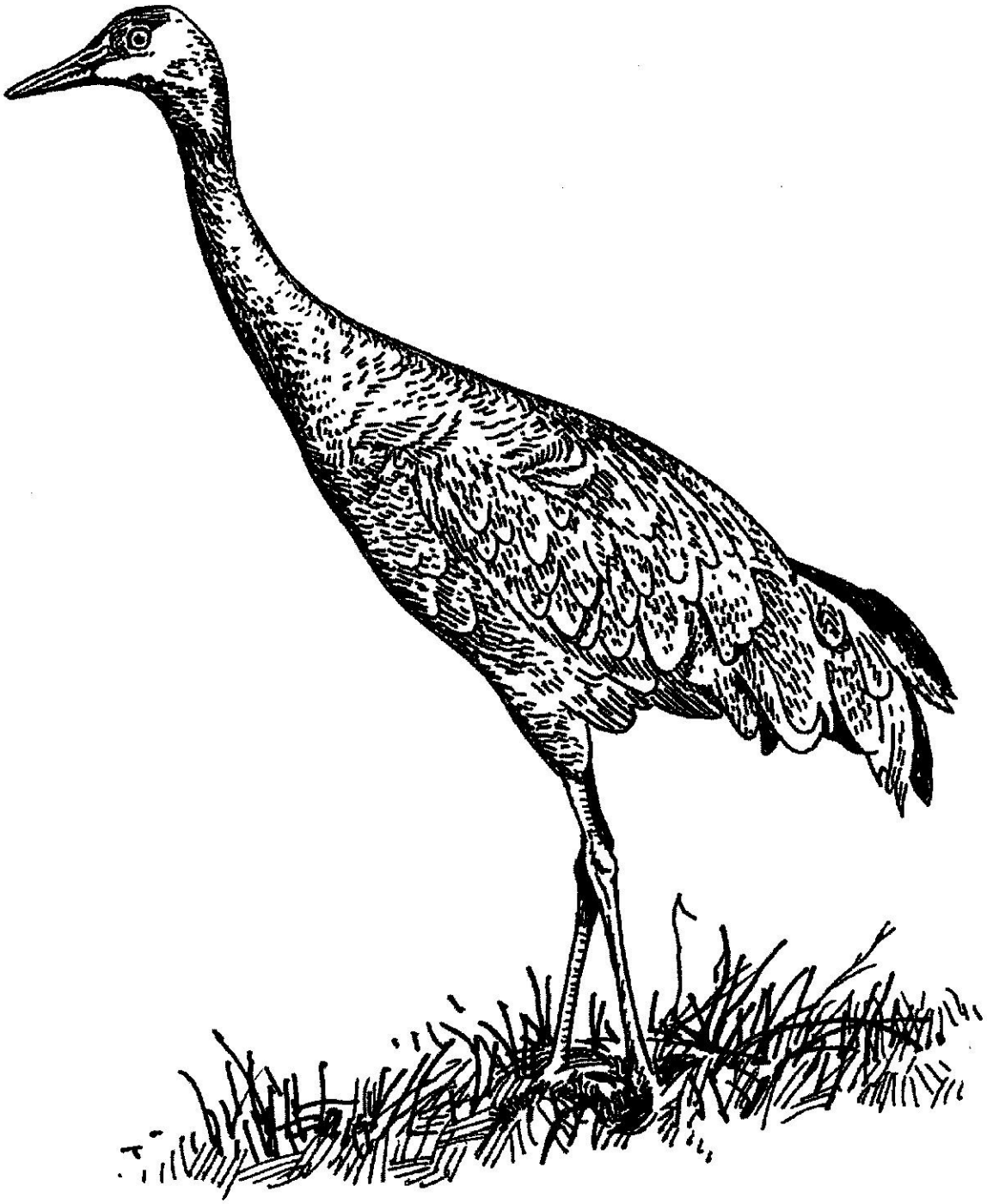
Present Distribution: The common moorhen is distributed throughout North and South America, occurring from southern Canada to southern South America. In Illinois, it is an uncommon migrant, and a locally uncommon summer resident in the northern counties; decreasing in abundance southward (Bohlen 1989).
Former Illinois Distribution: The common moorhen was formerly a very common summer resident in marshes and large prairie sloughs throughout the state (Nelson 1876b, Ridgway 1895).
Habitat: The common moorhen inhabits freshwater marshes, canals, quiet rivers, lakes and ponds with emergent aquatic vegetation, especially cattails and bulrushes. The nest normally consists of a shallow platform elevated slightly above the water and placed among robust emergent vegetation. Nests are usually built over water 40-50 cm deep (Bannor and Kiviat 2002).
Reason for Status: Much less abundant today than before European settlement, the common moorhen still sporadically occupies wetland habitat throughout Illinois. Populations in Illinois may still be declining as drainage, alteration, and destruction of marsh habitat continues.
Management Recommendations: Maintenance of open water marsh habitat with emergent vegetation is critical for this species. Water level manipulation and prescribed burning are suggested as control mechanisms for keeping open areas in marshes. Artificial wetland sites in some regions of the state may supplement the natural breeding habitat of this species.

Grus canadensis Linnaeus

SANDHILL CRANE **GRUIDAE** **Status:** Threatened in Illinois



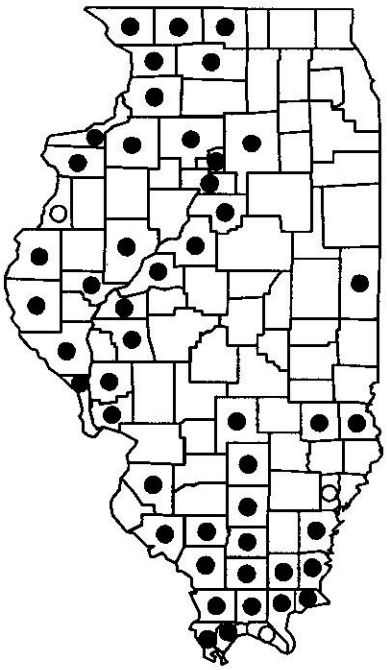
Present Distribution: The sandhill crane occurs from northeastern Siberia, Alaska, and the mid-arctic region of Canada south to California and the upper Midwest; also occurring in the Gulf States from Florida to Texas. In Illinois, this crane was once considered to be extirpated (George 1971, Bowles *et al.* 1980), but has recently returned (Greenberg 1980) as an uncommon breeding species in northern Illinois.
Former Illinois Distribution: The sandhill crane was once abundant on the large marshes in northern and central Illinois but had become very rare by the late 1800s (Kennicott 1855, Nelson 1876b). Prior to its return to the state in 1979, the last known nesting in Illinois occurred in Champaign County in 1872 (Greenberg 1980).
Habitat: Sandhill cranes nest in relatively large undisturbed freshwater marshes and prairie ponds. The nest usually consists of a large mound of grass or uprooted plants placed on the ground or in shallow water.
Reason for Status: Low annual recruitment rates limit the ability of sandhill cranes to recover from previous population declines (Tacha *et al.* 1992). As a result, the number of sandhill cranes breeding in Illinois has increased slowly, but steadily, since their range expansion into the state in 1979. The population is still relatively small, with breeding presently limited to eight counties in the northern portion of the state. Wetland destruction and disturbance by humans are the principal threats to this species.
Management recommendations: The protection and preservation of wetland areas in the rapidly expanding urban areas in the northeastern portion of the state are the primary management needs for this species.



Grus canadensis
Sandhill Crane

Haliaeetus leucocephalus Linnaeus

BALD EAGLE **ACCIPITRIDAE** **Status:** Threatened in Illinois
Federally Threatened



Present Distribution: The bald eagle formerly bred throughout most of North America but now breeds in Alaska, parts of northern and eastern Canada, the northern U.S., the Gulf Coast, and the southeast U.S. coast from Delaware to Florida. Winter habitat includes large bodies of water, especially the larger rivers in the interior of the continent. This eagle is a fairly common migrant and winter resident along the Illinois and Mississippi rivers and in southern Illinois on wildlife refuges. It is an uncommon summer resident with recent nesting known from 41 counties. The number of nests in Illinois has been increasing in recent years. In 1999, there were at least 36 active eagle nests in Illinois.

Former Illinois Distribution: Ridgway (1889) indicated that the bald eagle occurred along all the major watercourses of the state at all times of the year. Cory (1909) stated that it occurred fairly commonly throughout the unsettled regions of the state and bred throughout its range.

Habitat: In Illinois, bald eagles inhabit relatively undisturbed areas near large rivers and lakes. Their nests are usually located in the high branches of old trees, and are usually reused from one year to the next.

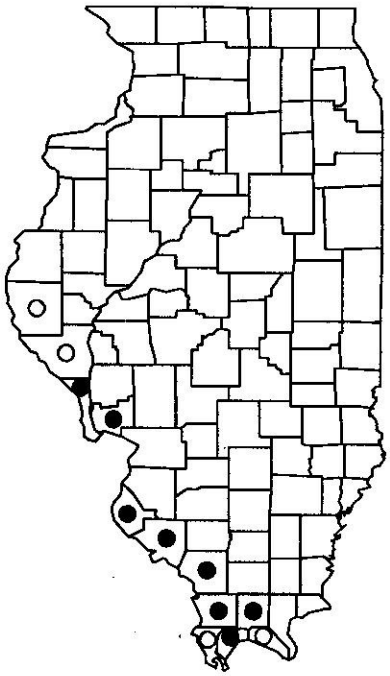
Reason for Status: The breeding population of bald eagles in Illinois continues to be relatively small. Despite recent increases in the number of active nests, nest success remains fairly low in Illinois. Humans either directly (e.g., shooting, trapping, poisoning) or indirectly (e.g., impacts with powerlines or vehicles, electrocution) still represent the single greatest cause of mortality accounting for at least 70% of all bald eagle deaths (Buehler 2000).

Management Recommendations: Breeding and wintering eagle populations and their respective feeding, roosting, and nesting habitats should receive protection from human disturbances.

Haliaeetus leucocephalus
(Bald Eagle)

Ictinia mississippiensis (Wilson)

MISSISSIPPI KITE **ACCIPITRIDAE** **Status:** Endangered in Illinois



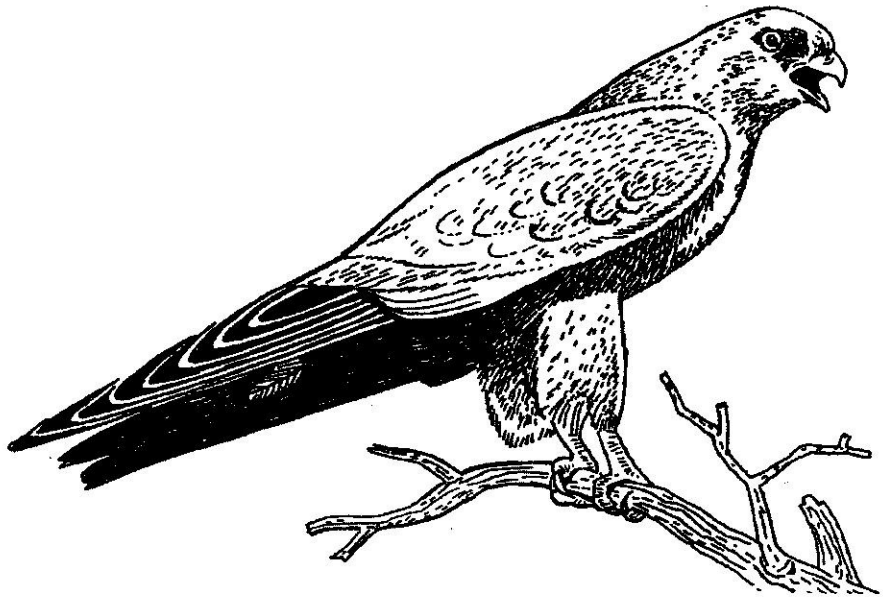
Present Distribution: The Mississippi kite breeds locally from the southeastern and south-central U.S. south into Central America. In Illinois, it occurs as an uncommon migrant and a local summer resident in the southern counties near the Mississippi River and as a rare wanderer farther north into central Illinois (Bohlen 1989).

Former Illinois Distribution: The Mississippi kite formerly occurred in the Mississippi, Illinois, and Wabash river valleys in Illinois (Hardin and Klimstra 1976), where it was considered relatively common in some localities (Ridgway 1889). After 1900 the population in the state declined for unknown reasons.

Habitat: In Illinois, Mississippi kites utilize mature, mixed bottomland forest for nesting and fallow fields, mixed forest, marshes, or other openings for foraging. Nests are placed in tall trees usually near streams, drainage ditches, or narrow roads (Hardin *et al.* 1977, Evans 1981). Nesting of this species is generally restricted to large forested tracts (usually more than 75 ha in size), with considerable nearby open habitat, including pasture and cropland, linear waterways, lesser-used roads, levees, and small lakes (Evans 1981, Parker 1999). The species rarely uses small woodlots in extensive areas of cultivation, narrow riparian woods, tree plantations, or isolated trees (Parker 1999). The species frequently reuses old nest sites in subsequent years, often reusing the same nest or building a new nest in the same tree (Evans 1981, Parker 1999).

Reason for Status: In Illinois this kite declined in abundance with few records noted between 1900 and 1962 (Bohlen 1978). The status of this species has improved somewhat in Illinois but the population is still small with as few as 60 nesting pairs occurring in the state (Evans 1981, Bohlen 1989).

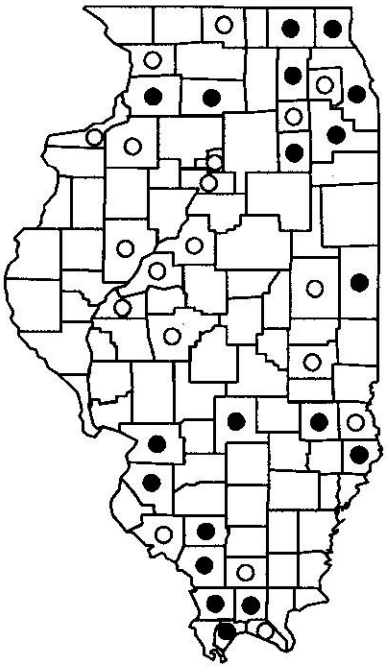
Management Recommendations: The Mississippi kite requires extensive tracts of mature, mixed bottomland forest interspersed with openings. Protection of streambank and forest trees, and the establishment of uncultivated or fallow fields in the vicinity of known nesting areas, would benefit this species (Evans 1981).



Ictinia mississippiensis
(Mississippi Kite)

Ixobrychus exilis (Gmelin)

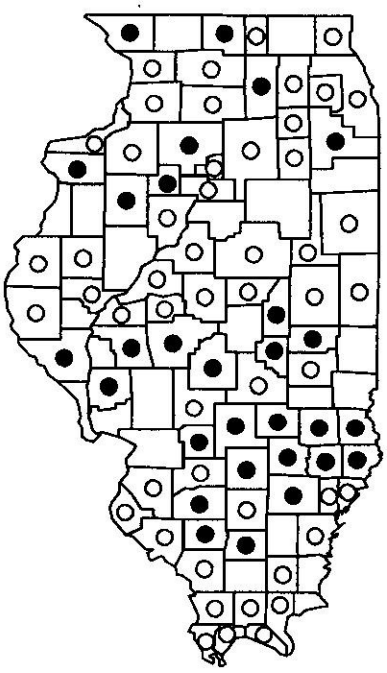
LEAST BITTERN **ARDEIDAE** **Status:** Threatened in Illinois



Present Distribution: The least bittern breeds from southeastern Canada through the U.S. and Mexico to Costa Rica. Other subspecies extend well into South America. In Illinois it is an uncommon migrant and summer resident (Bohlen 1989).
Former Distribution: The least bittern was formerly a very common, possibly even abundant, species in Illinois occupying marshy habitats throughout the state (Kennicott 1855, Nelson 1876b, Ridgway 1895).
Habitat: The least bittern inhabits shallow freshwater lakes and marshes with dense, tall growths of aquatic or semiaquatic vegetation (particularly *Typha, Carex, Scipus, Sagittaria* or *Myriscus*) interspersed with open water (Gibbs *et al.* 1992). The nest is usually built above water 8-96 cm deep and less than 10 meters from open water, channels or other openings (Gibbs *et al.* 1992).
Reason for Status: This formerly abundant species is now relatively uncommon with recent nesting known from 18 Illinois counties. Destruction of wetland habitat appears to be the primary threat to this species in Illinois and elsewhere within its range.
Management Recommendations: Preservation and protection of relatively large (6 ha) wetland areas with shallow water interspersed with robust emergent vegetation are the primary management needs of this species in the Midwest (Hands *et al.* 1989a). Wetlands also need to be protected from chemical contamination, siltation, eutrophication, and other forms of pollution (Gibbs *et al.* 1992).

Lanius ludovicianus (Linnaeus)

LOGGERHEAD SHRIKE **LANIIDAE** **Status:** Threatened in Illinois

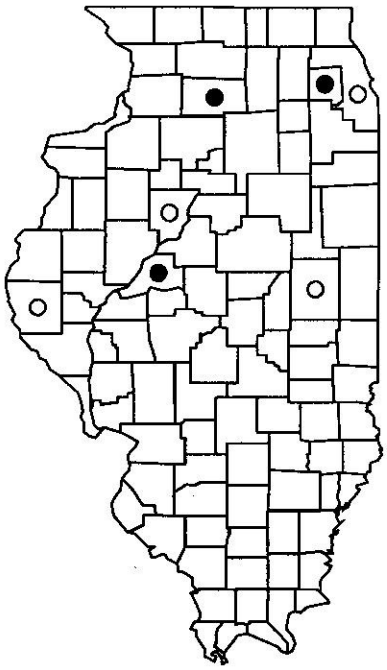


Present Distribution: The loggerhead shrike breeds from southern Canada south to southern Florida, the Gulf Coast, and southern Mexico. Wintering birds occur north to Virginia, the Midwest, and northern California. The loggerhead shrike is an uncommon resident in the southern third of Illinois and a rare migrant and summer resident elsewhere in the state.
Former Illinois Distribution: Prior to 1900 the shrike was distributed statewide, adapting to Osage orange and other hedgerow trees for nesting and feeding. With the elimination of the hedgerows, the central and northern Illinois populations declined steadily and were almost entirely eliminated by 1972 (Graber *et al.* 1973).
Habitat: In the Midwest, loggerhead shrikes inhabit open, agricultural areas interspersed with grassland habitat (Brooks and Temple 1990b). Most of the nests found in Illinois are in Osage orange, honey locust, red cedar and rose.
Reason for Status: Shrike populations in Illinois declined dramatically between the 1950s and the early 1970s (Graber *et al.* 1973). Populations in Illinois have continued to decline in recent years with an estimated total population decline of more than 70% between 1966-2002 (Sauer *et al.* 2003). Although shrikes continue to occur nearly statewide, most nesting locations represent isolated, non-persistent locations. Relatively few persistent nesting areas are know.
Management Recommendations: The primary management needs of the loggerhead shrike in Illinois are the preservation of hedgerows and other thorny species, interspersed with large, open grassland areas. Although, pesticides are believed to have the potential to impact shrike populations, recent analyses indicate that pesticides are not related to recent shrike declines in Illinois (Herkert 2004).

Lanius ludovicianus
(Loggerhead Shrike)

Laterallus jamaicensis (Gmelin)

BLACK RAIL **RALLIDAE** **Status:** Endangered in Illinois



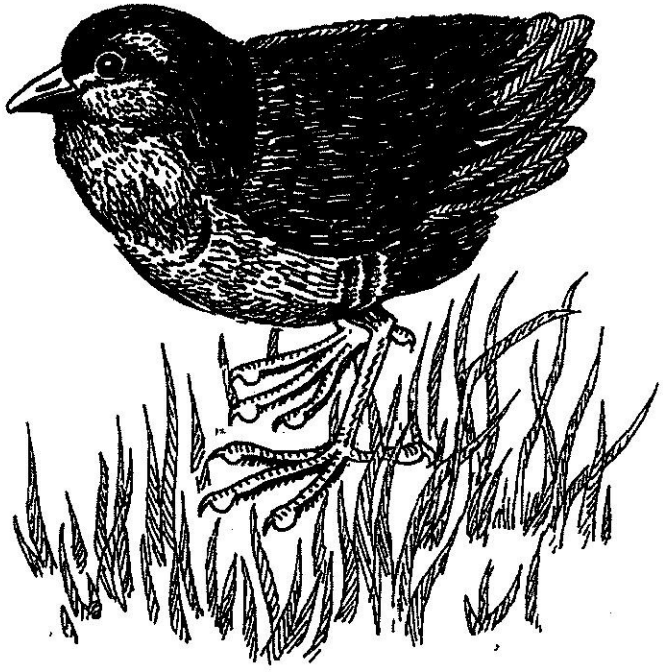
Present Distribution: This small rail breeds along the Atlantic and Pacific coasts from Long Island and California to southern South America, also occurring locally into the interior of the continent. Its winter range extends north to the Gulf Coast. In Illinois the black rail occurs as a rare migrant and very rare summer resident in the central and northern counties (Bohlen 1989). No recent nesting is known for Illinois. However, summering individuals have been recently encountered in Mason (1996), Lee (1997), and DuPage (2000) counties.

Former Illinois Distribution: Although rarely observed, the black rail probably once occurred locally throughout central and northern Illinois. Nelson (1876b) reported the first nest ever found in the U.S. from the Calumet River marshes in Cook County. Nests or young also have been found in Champaign and Adams counties (Hess 1910, Musselman 1937).

Habitat: In inland areas, the black rail inhabits wet areas with short, dense vegetation consisting of rushes, sedges, and grasses (Todd 1977). In the Midwest, it may prefer sedge meadows to the emergent vegetation of true marshes. Bohlen (1976) described black rail habitat in Mason County as consisting of cattails, spike rushes, bur-reed, seed box, sedges, and rushes.

Reason for Status: Illinois summer records for this elusive rail are rare, and very little is known of its population status in the state or elsewhere in the Midwest. Destruction of marsh habitat probably has decimated populations of this species and continues to be a threat.

Management Recommendations: The primary management needs for the black rail include the protection and preservation of wetland habitat, and management such as mowing, burning, or water manipulation that promotes early wetland successional stages (Hands *et al.* 1989b). Intensive surveys also are needed to more accurately determine the status of this species in Illinois and throughout the Midwest.



Laterallus jamaicensis
(Black Rail)

Limnothlypis swainsonii (Audubon)

SWAINSON'S WARBLER **PARULIDAE** **Status:** Endangered in Illinois

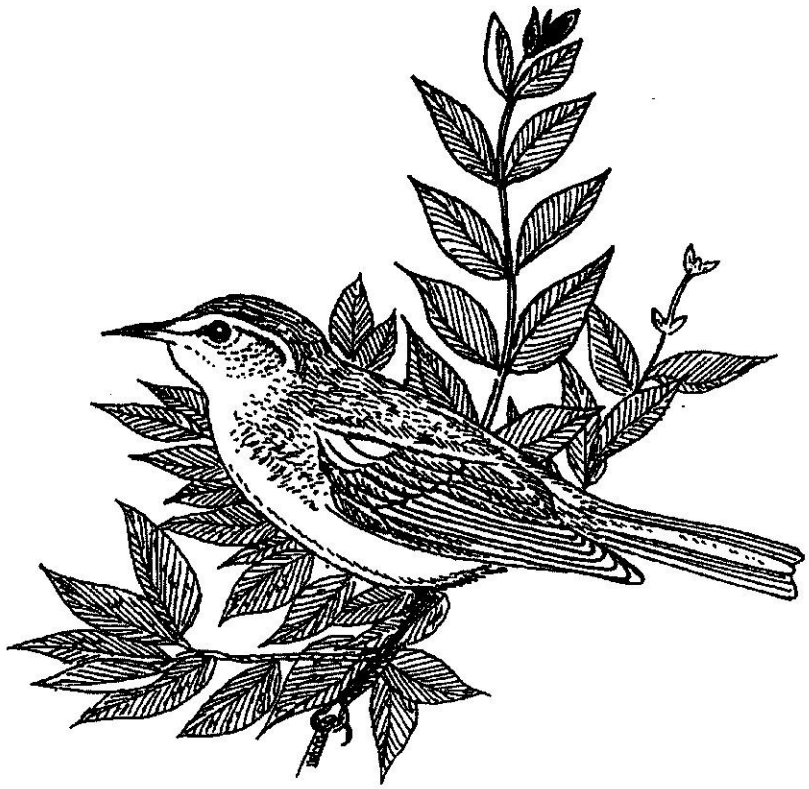
Present Distribution: The Swainson's warbler breeds from southern Illinois south to the southeastern U.S. It winters in Cuba, Jamaica, and southern Mexico south to Honduras. In Illinois, it is a rare migrant and very rare summer resident in the southern part of the state.

Former Illinois Distribution: The Swainson's warbler apparently has always been restricted to southern Illinois; however, due to its reclusive habits and general lack of observers from the southern part of the state there are few historic records. Gross (1908) reported a summer record for Perry County and Howell (1910) provided summer records for Alexander and Johnson counties. Nesting was not documented in the state until 1966 (George 1972).

Habitat: In Illinois, Swainson's warblers nest in forest areas with a high degree of canopy closure (80%) and an understory of giant cane that exceeds 10,000 stems/ha (Eddleman *et al.* 1980). They often nest near open water and also are dependent upon large contiguous tracts of forest, possibly requiring tracts as large as 850 acres (Eddleman *et al.* 1980),

Reason for Status: The Swainson's warbler apparently has always been relatively uncommon in Illinois. It is now, however, extremely rare in Illinois and has not been documented in the state since the Mississippi River floods of 1993 inundated the last known location for this species in the state.

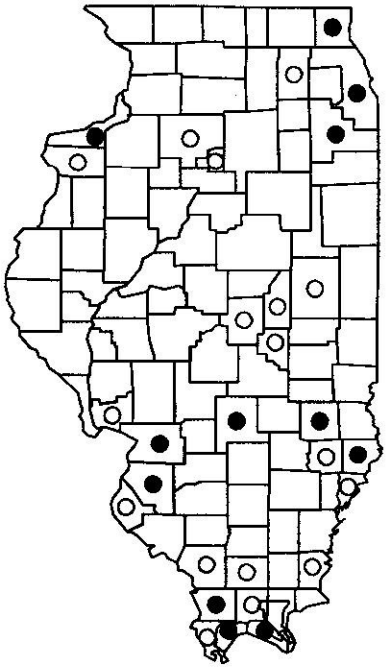
Management Recommendations: Preservation of large tracts of bottomland wetland habitat and maintenance of dense cane stands are critical factors for conserving this warbler in Illinois.



Limnothlypis swainsonii
(Swainson's Warbler)

Nyctanassa violacea (Linnaeus)

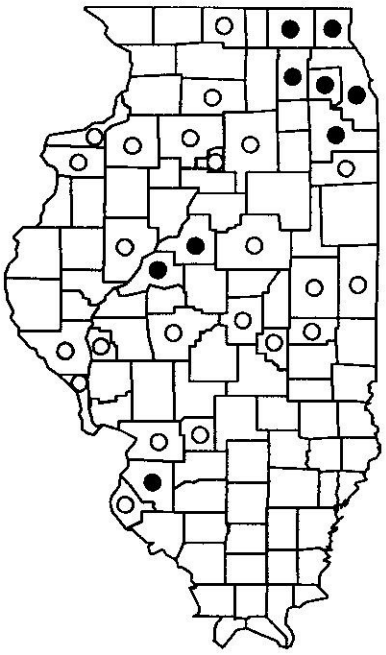
YELLOW-CROWNED NIGHT HERON **ARDEIDAE** **STATUS:** Endangered in Illinois



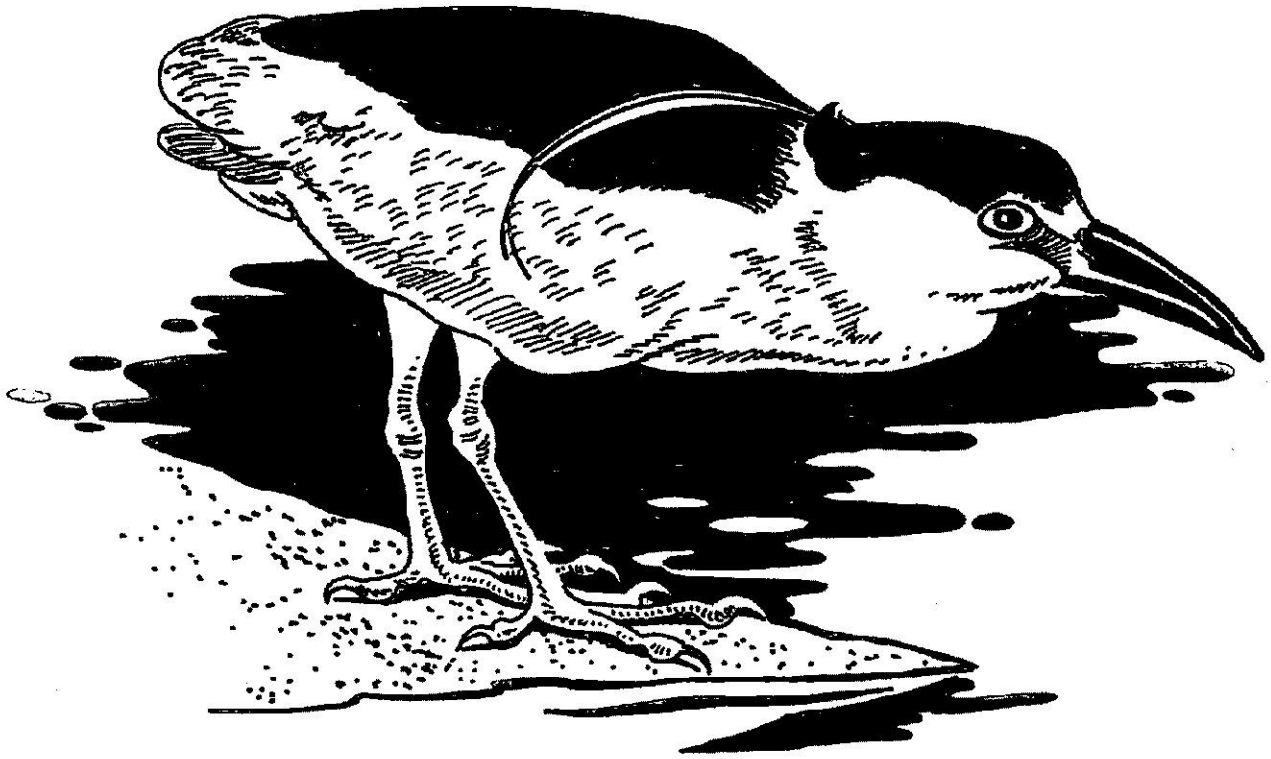
Present Distribution: The yellow-crowned night heron breeds from Connecticut to Florida and west to Texas, mostly in coastal areas but also north along the Mississippi River and larger tributaries, but also occurs locally in Ohio, Wisconsin, Minnesota and Michigan (Watts 1995). In Illinois the yellow-crowned night heron is an uncommon migrant and summer resident decreasing in abundance northward (Bohlen 1989).
Former Illinois Distribution: The yellow-crowned night heron was formerly considered to be of regular occurrence in the southern third of the state (Ridgway 1895). Since 1900 nesting has also been documented in northen Illinois (Graber *et al.* 1978). It is not known if the northern Illinois records represent a range expansion in Illinois or just greater efforts in locating nests of this species (Graber *et al.* 1978).
Habitat: In coastal areas, this species breeds on barrier and bay islands; inland nests in swamps, forested wetlands and forested uplands near lakes, rivers and creeks (Watts 1995).
Reason for Status: This heron is very thinly distributed in Illinois, with relatively few recent nesting records. This species' breeding habitat, bottomland woodlands, are also becoming increasingly rare in Illinois.
Management Recommendations: Increased protection from habitat destruction and human disturbance at breeding areas would benefit this species.

Nycticorax nycticorax (Linnaeus)

BLACK-CROWNED NIGHT HERON **ARDEIDAE** **Status:** Endangered in Illinois



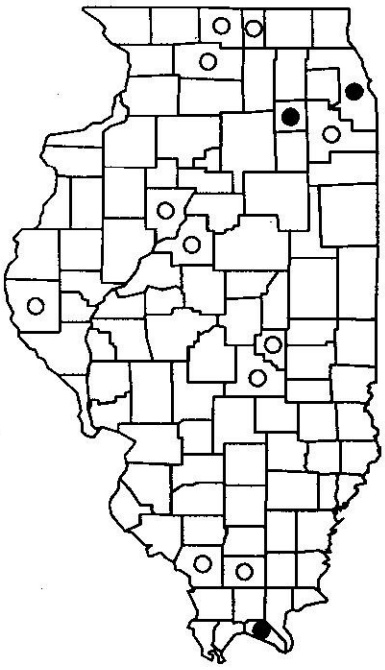
Present Distribution: The black-crowned night heron breeds from Washington, Saskatchewan, Minnesota, and New Brunswick south to southern South America. It winters in the warmer parts of its summer range. It occurs in Illinois as an uncommon migrant and rare summer resident (Bohlen 1989).
Former Illinois Distribution: The black-crowned night heron was formerly a common summer resident occurring in wetland habitats throughout the state (Nelson 1876b, Cory 1909).
Habitat: Black-crowned night-herons often nest among colonies of great blue herons and great egrets. Nests are placed in a wide variety of bottomland forest trees although willow or cottonwood thickets are also sometimes used. Nelson (1876b) reported nesting in herbaceous marsh vegetation in Illinois.
Reason for Status: The black-crowned night heron has declined substantially in Illinois. In recent years 600-1200 nests have occurred within Illinois. Although the Illinois population is possibly increasing slightly, destruction of foraging and nesting areas, and increasing encroachment and harassment by humans, continue to threaten this species.
Management Recommendations: Protection and preservation of both nest and forage sites are critical for this species in Illinois. Human encroachment into nesting areas during the breeding season should be prevented in order to avoid nest abandonment.



Nycticorax nycticorax
(Black-crowned Night Heron)

Pandion haliaetus (Linnaeus)

OSPREY **ACCIPITRIDAE** **Status:** Endangered in Illinois



Present Distribution: The osprey breeds from Alaska and Newfoundland south to Florida and the Gulf Coast. It winters regularly from the Gulf Coast and California south to Argentina. In Illinois, it is an uncommon migrant and rare summer resident (Bohlen 1989). It has recently bred in Cook and Massac counties. There are recent summer records of non-breeding birds from several other Illinois counties. This species also is frequently observed along major rivers and lakes in Illinois during Spring (early April - late May) and Fall (early September - late October) migrations.

Former Illinois Distribution: The osprey was probably once a common summer resident in Illinois nesting throughout the state along the major river valleys and in the glacial lakes of northeastern Illinois (Ridgway 1889, Cory 1909). Prior to the recent string of nesting in Cook (1998-2002) and Massac (1999-2001) counties, breeding in Illinois was rare and sporadic: a 1986 nest in Adams County and a 1952 in Williamson County were the two most recent.

Habitat: Throughout its range, the osprey occupies lakes, rivers, and seacoasts where a supply of fish is available. Nests are placed in deciduous or coniferous trees usually near water and occasionally on artificial sites such as telephone poles. Ospreys usually return to the same nest site in successive years.

Reason for Status: Although receiving less public attention than the bald eagle, the osprey experienced a similar decline between 1950 and the early 1970s, due primarily to pesticides. Although this species is showing signs of recovery in many other parts of its range, its recovery in Illinois has been extremely slow.

Management Recommendations: Maintenance of high water quality and protection of large tracts of lake and riverside habitat from human disturbance may help the recovery of the osprey in Illinois. Erecting artificial nest structures also could possibly benefit this species.

Pandion haliaetus
(Osprey)

Phalaropus tricolor (Vieillot)

WILSON'S PHALAROPE **SCOLOPACIDAE** **Status:** Endangered in Illinois

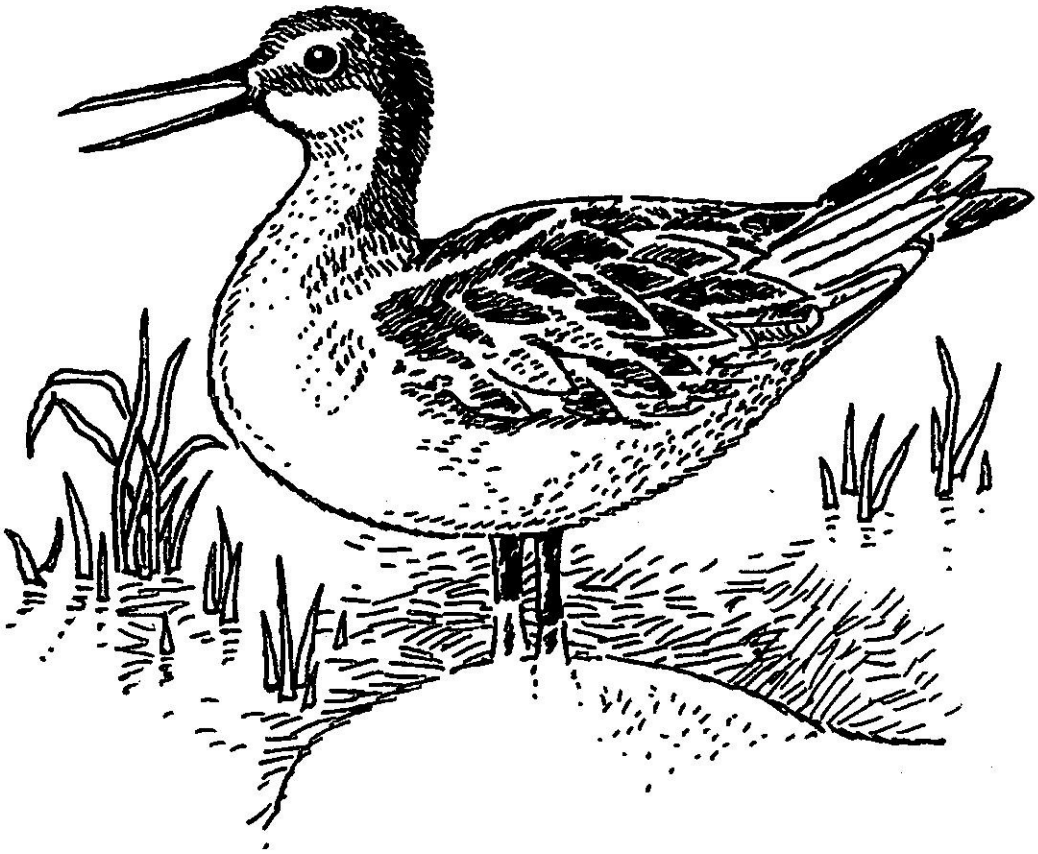
Present Distribution: This non-pelagic phalarope breeds from southwestern and south-central Canada to the central and western U.S. and winters chiefly in southern South America. In Illinois, it is an uncommon migrant and a very rare summer resident (Bohlen 1989). No recent nesting in known in Illinois although birds have recently been seen during the breeding season in De Kalb, Kane, Morgan and Wabash counties.

Former Illinois Distribution: The Wilson's phalarope apparently was once a fairly common summer resident in the prairie regions of Illinois, nesting in prairie wetlands (Nelson 1876b, Ridgway 1895, Cory 1909). By 1940, however, it was considered rare with just a few breeding sites remaining, all in the Chicago region (Ford 1956).

Habitat: Wilson's phalaropes nest in wetlands with three main characteristics: open water, emergent vegetation and open shoreline (Dechant *et al.* 2003). Nesting habitat varies widely, including wetlands, wet meadows, upland grasslands, and road rights-of-way (Dechant *et al.* 2003). The most recent known nesting in Illinois occurred on cinder flats in the Lake Calumet area (Bohlen 1989).

Reason for Status: This wetland dependent species would benefit from efforts to protect wetland complexes with both seasonal and semipermanent wetlands to provide suitable habitat during both wet and dry years (Dechant *et al.* 2003). Ensuring for the presence of wet-meadow areas near deeper wetlands during the breeding season would also benefit this species by making it easier for adults to move young from nests to wetlands (Dechant *et al.* 2003).

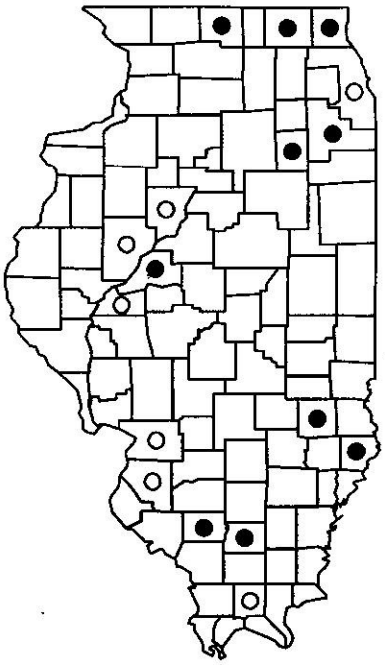
Management Recommendations: Wilson's Phalaropes need wetland complexes with both seasonal and semi-permanent wetlands to provide suitable habitat during both wet and dry years (Kantrud and Stewart 1984, Colwell and Oring 1988). Management should seek to ensure the presence of wet-meadow areas for nesting near wetlands during the breeding season (Colwell and Oring 1988). Areas where the species breeds also should not be disturbed (e.g., mow, burn, or grazed) during the breeding season, which generally extends from early May to late July (Kantrud and Higgins 1992).



Phalaropus tricolor
(Wilson's Phalarope)

Rallus elegans (Audubon)

KING RAIL **RALLIDAE** **Status:** Endangered in Illinois

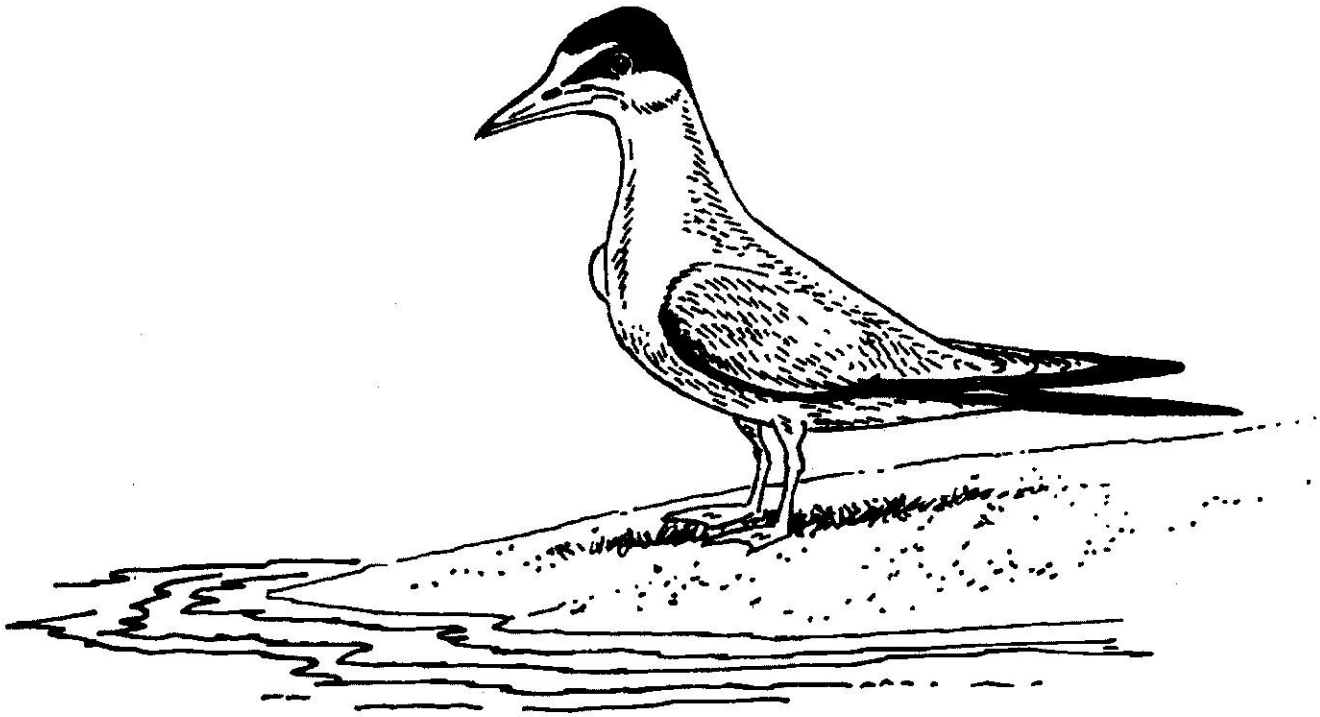


Present Distribution: The king rail breeds locally from southeastern North Dakota, Wisconsin, Michigan, southern Ontario and western New York south to the Gulf Coast, also along the Atlantic Coast north to New York (Meanley 1992). In Illinois, this rail in an occasional migrant and summer resident (Bohlen 1989). Recent nesting has been documented in 10 Illinois counties.
Former Illinois Distribution: The king rail was formerly considered to be a common summer resident in suitable localities throughout the state (Nelson 1876b, Ridgway 1895).
Habitat: The king rail inhabits fairly large freshwater marshes. The nest is usually placed in a clump of grass or a sedge tussock within 30 cm of the water surface (Meanley 1992).
Reason for Status: Populations of this formerly common species have declined greatly in Illinois. It is now only rarely encountered with very few documented breeding records in Illinois in recent years.
Management Recommendations: Loss of wetlands is by far the most critical threat to king rail populations (Meanley 1992), thus protection, restoration, and creation of large wetland areas in Illinois offers the most promising approach to increasing state populations of this bird.

Sterna antillarum (Lesson)

LEAST TERN **LARIDAE** **Status:** Endangered in Illinois
Interior populations Federally Endangered

Present Distribution: This small tern breeds along the Atlantic and Gulf coasts from Maine south to Venezuela, the Pacific Coast from central California to Baja California and inland locally along the Colorado, Red, Missouri, Mississippi, and Ohio rivers. It occurs in Illinois as an uncommon migrant and local summer resident in southern Illinois, and as a rare migrant and post-breeding wanderer in the rest of the state (Bohlen 1989). In Illinois all recent nesting has been located in the southern part of the state near the Mississippi, Ohio and Wabash rivers.
Former Illinois Distribution: The least tern once nested throughout the Mississippi River Valley and apparently also near Lake Michigan in Lake and Cook counties (Ridgway 1895, Ford 1956).
Habitat: In the Mississippi River, least terns prefer to nest in shallow depressions on sand islands. Apparently the most important factor influencing nesting colony location is the mean number of island exposure days (i.e. days above water), with birds preferring islands that are exposed for at least 100 days between 15 May and 31 August (Smith and Renken 1991). In years when water conditions in the large rivers preclude nesting this species will attempt inland nesting, usually with little success.
Reason for Status: Very few nesting sites exist in Illinois and most are vulnerable to flooding, dredging, spoil dumping, or other effects of humans. Their locations also tend to make them highly susceptible to disturbance.
Management Recommendations: Natural river fluctuations of the water level and resultant sandbar formation are necessary to provide island nesting habitat for this species. Protection from predators and disturbance by humans, and maintenance of high water quality also are critical for this tern's survival.



Sterna antillarum
(Least Tern)

Sterna forsteri (Nuttall)

FORSTER'S TERN **LARIDAE** **Status:** Endangered in Illinois

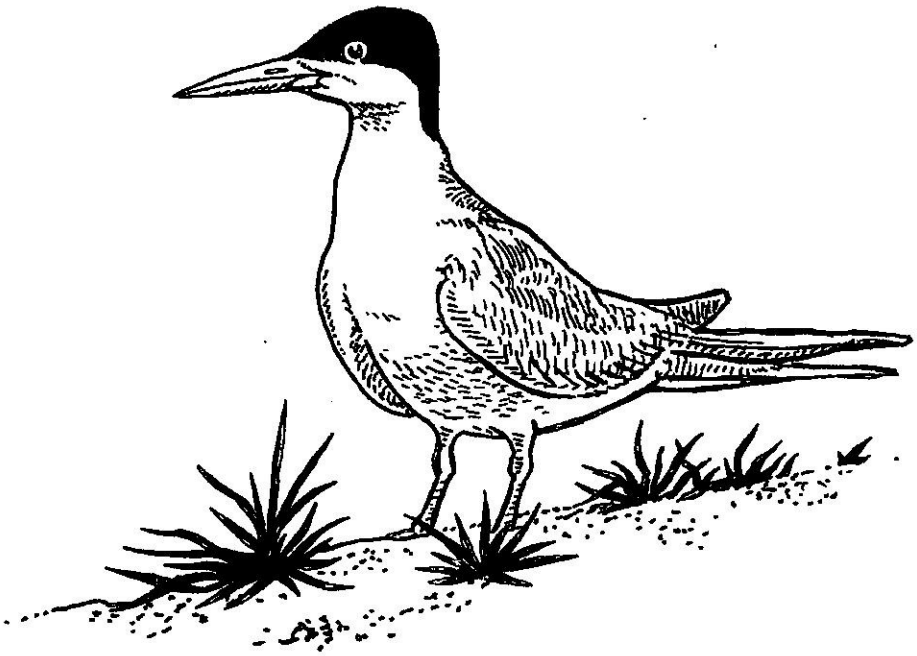
Present Distribution: This tern breeds along the Atlantic and Gulf Coasts from Maryland to Texas and in the interior of North and Central America from southern Canada to Guatemala. In Illinois this species is a common migrant and an occasional summer resident in the northeastern counties near Lake Michigan. Recent nesting has occurred only in Lake and McHenry Counties.

Former Illinois Distribution: The Forster's tern probably has always been restricted to northeastern Illinois where it was formerly considered common or even locally abundant (Nelson 1876b, Ford 1956).

Habitat: In the Midwest, Forster's terns occupy freshwater sites usually inhabiting marsh-bordered lakes. They are found most often in open, deeper portions of marshes, generally in wetlands with considerable open water and large stands of island-like vegetation and/or large mats of floating vegetation (McNicholl *et al.* 2001). In Iowa, this species was restricted to marshes greater than 50 acres (Brown and Dinsmore 1986). In freshwater marshes Forster's terns prefer to nest on muskrat houses or on mats of floating vegetation (McNicholl *et al.* 2001).

Reason for Status: Dependent upon large inland lakes with marsh borders for nesting, this species has declined with the loss of its preferred habitat. Development and heavy recreational use at known nesting sites in the state has significantly reduced Illinois' breeding population in recent years.

Management Recommendations: Protection of nesting areas from development and recreational use are important for this species' survival in Illinois (Heidorn *et al.* 1991). Maintenance of natural marsh conditions along the borders of larger inland lakes may provide potential nest habitat for this species. This species has the ability to colonize newly created marsh-like habitats and thus could benefit from management and restoration of large wetland systems (McNicholl *et al.* 2001).



Sterna forsteri
(Forster's Tern)

Sterna hirundo (Linnaeus)

COMMON TERN **LARIDAE** **Status:** Endangered in Illinois

Present Distribution: The common tern breeds from Labrador south to the Caribbean and west from Labrador to Alberta. It winters from Florida to southern South America. In Illinois, this species occurs as a common migrant and rare summer resident on Lake Michigan and a fairly common migrant elsewhere in the state (Bohlen 1989). Recent nesting has been restricted to a couple of sites near Lake Michigan in Lake County (Dann 2003).

Former Illinois Distribution: Nelson (1876b) considered this species to be an abundant migrant but indicated he had never observed it nesting in northeastern Illinois. A nesting colony was established at Waukegan from 1934 to 1936 (Ford 1956) and in the 1960s, nesting occurred at Powderhorn Marsh in Lake County (Bohlen 1978).

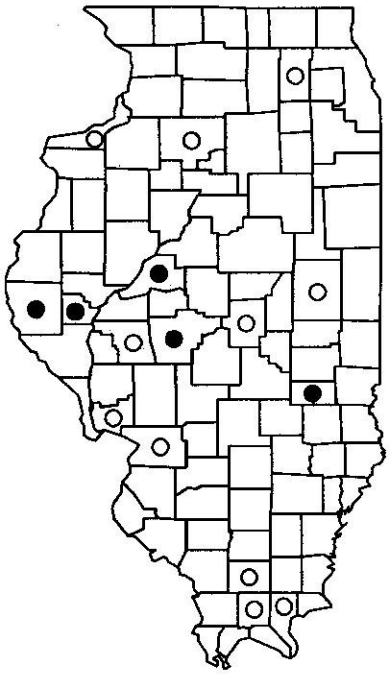
Habitat: The common tern usually nests in colonies on the ground, primarily in open areas with loose substrate (sand, gravel, shell, or cobble), but with scattered vegetation or other cover nearby in which chicks can find shelter (Nisbet 2002).

Reason for Status: The original nesting status of this species in Illinois is unclear. However, its population has apparently always been relatively low. Disturbance of nesting colonies, primarily by predators, has significantly reduced nest success in Illinois. In Illinois, common terns are known to have successfully fledged young in only six years between 1975 and 2002.

Management Recommendations: Efforts to protect breeding colonies from predator and human disturbances must continue in order to ensure successful nesting in Illinois. Vegetation management may also be necessary to ensure that breeding sites maintain the proper mix of open substrate with scattered cover.

Thryomanes bewickii (Audubon)

BEWICK'S WREN **TROGLODYTIDAE** **Status:** Endangered in Illinois



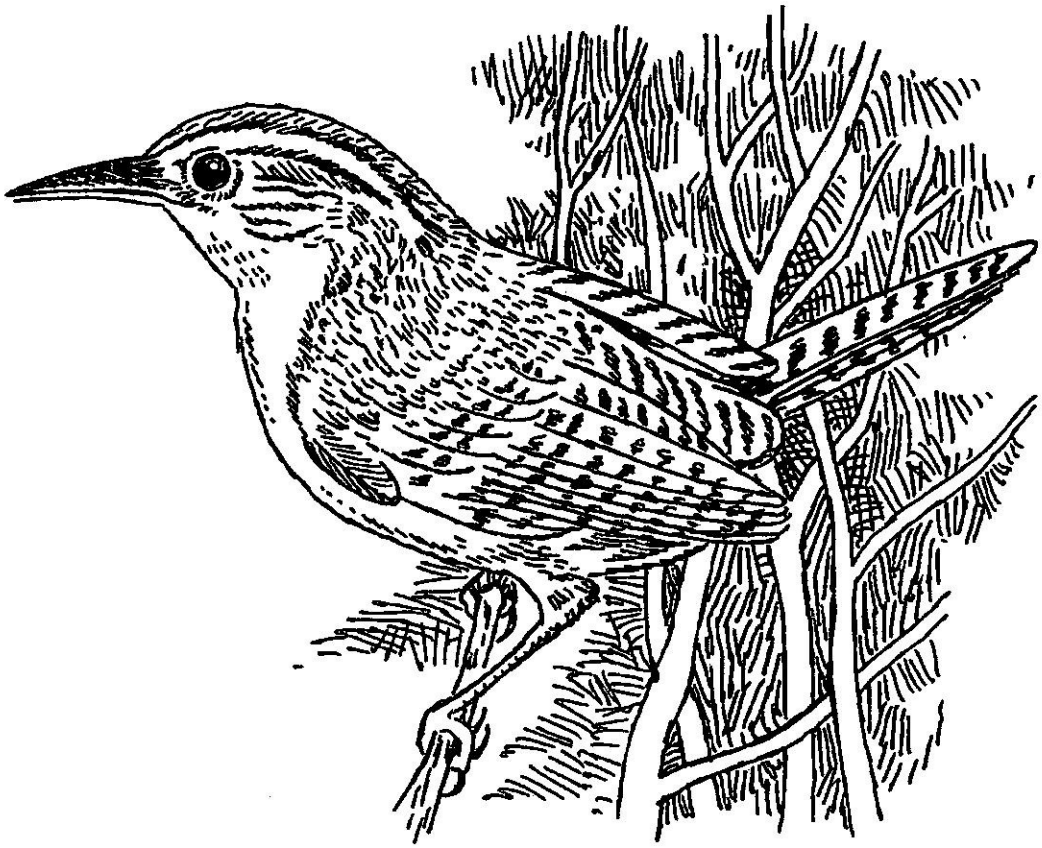
Present Distribution: This wren has a widespread but discontinuous distribution primarily in western and central North America. Along the west coast it occurs from British Columbia south to California and also occurs from Wyoming and Utah east to Missouri and south through central Mexico. It is a rare breeder east of the Mississippi River (Kennedy and White 1997). In Illinois, the Bewick's wren occurs as an occasional migrant and rare summer resident. It is also a rare winter resident in Illinois.

Former Illinois Distribution: Prior to 1900, the Bewick's wren bred commonly in southern Illinois and sporadically in the central and northern parts of the state (Ridgway 1889). In some parts of Illinois it was apparently once so common that practically every home with outbuildings had a nesting pair (Ridgway 1889).

Habitat: Preferred habitat of the Bewick's wren includes brushy areas, hedgerows and thickets in farming country, and open and riparian woodlands. The nest usually is placed in a woodpecker hole, tree or post cavity, building crevice or ledge, or nest box.

Reason for Status: Although once a common breeder in central and southern Illinois, this species is now a sporadic nester in the state. Recent nesting is known from only one location in Illinois, a state park in Adams and Brown counties. Three other Illinois counties have recent records of summering individuals, although nesting could not be confirmed at these locations (Cumberland, Mason and Sangamon counties). The entire population of this species east of the Mississippi River appears to be declining primarily due to competition with the house wren (Kennedy and White 1996).

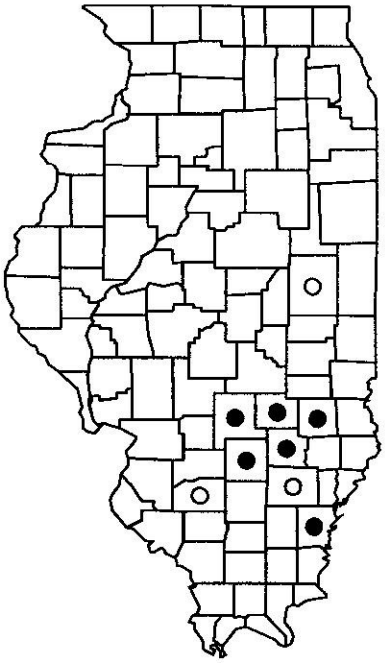
Management Recommendations: Protection and management of early successional communities, primarily open scrub woodland, would provide optimum habitat for the Bewick's wren. Prescribed burning to maintain open conditions could also be beneficial for this species.



Thryomanes bewickii
(Bewick's Wren)

Tympanuchus cupido (Linnaeus)

GREATER PRAIRIE CHICKEN **PHASIANIDAE** **Status:** Endangered in Illinois



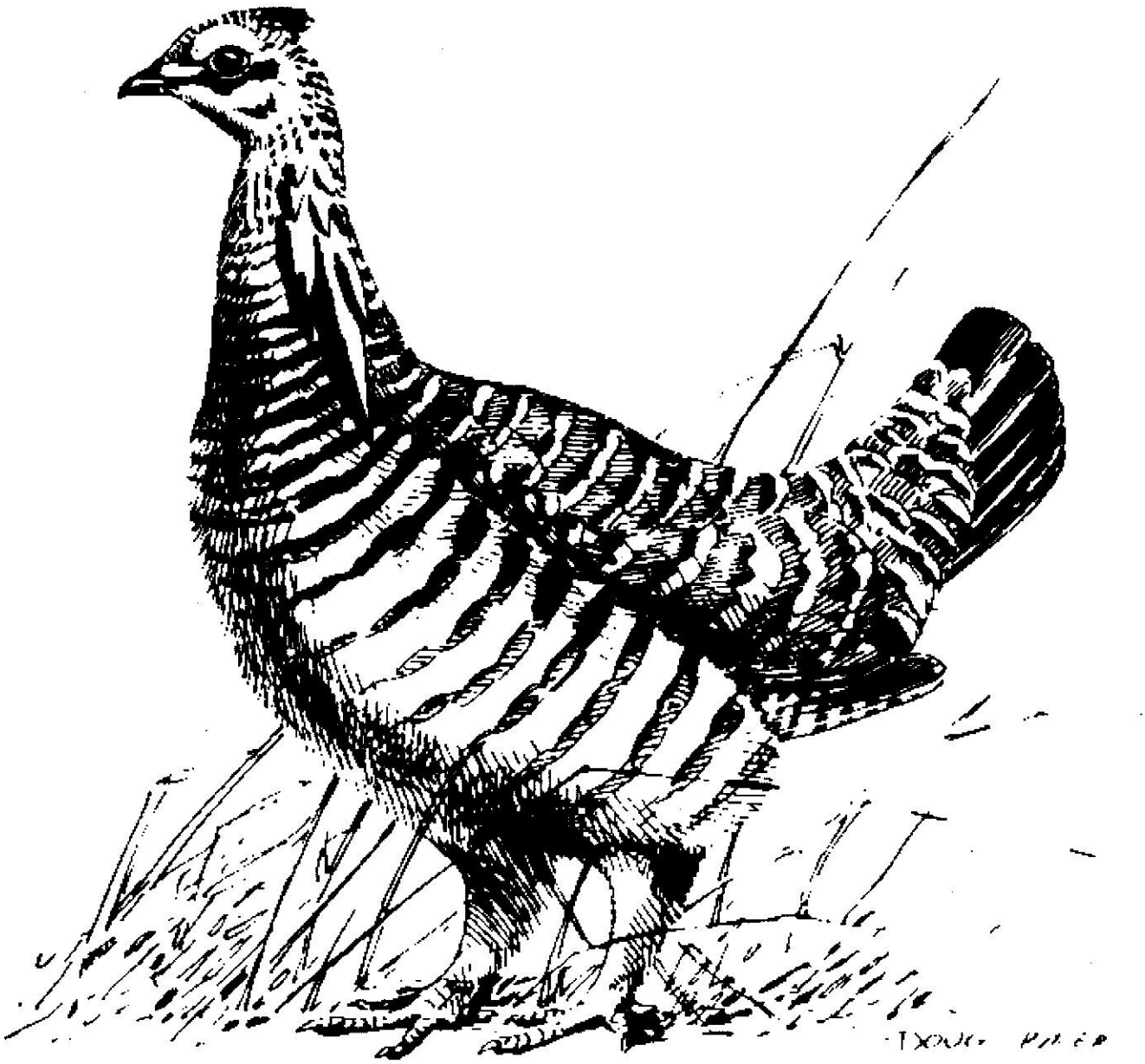
Present Distribution: The greater prairie-chicken occurs locally from North Dakota south through the Great Plains and Midwest to Oklahoma and Illinois. A distinct subspecies, the federally endangered Attwater's Prairie-chicken occurs on the coastal prairies of Texas. The greater prairie-chicken is a very rare and local permanent resident in south-central Illinois. The majority of the remnant population of approximately 200 birds occurs in two remnant flocks on public lands in Jasper and Marion counties. Scattered small flocks have existed recently in four additional counties.

Former Illinois Distribution: The prairie-chicken once was abundant in the prairie regions throughout the northern two-thirds of Illinois. The initial opening of the prairie and forests to agriculture in Illinois benefitted the greater prairie-chicken, and the population reached an estimated peak of approximately 10 million birds by 1860 (Westemeier and Edwards 1987). Prairie-chicken numbers began to decline shortly after reaching their peak abundance, however, by 1933 the Illinois population was estimated to be only 25,000 birds and furthered declined to 2,000 birds by 1962.

Habitat: Prairie-chickens require large, mid- to tall-stature grasslands with less than 5% woody cover, often near cropland (Schroeder and Robb 1993, S. Simpson pers. com.). Grasslands are required for roosting, loafing, and nesting. Nests are placed in grasslands with thick horizontal and vertical cover; usually 25-70 cm in height (Schroeder and Robb 1993). Well-drained, open booming grounds also are critical for the breeding activity of this species.

Reason for Status: Under tremendous pressure from hunting, egg collecting and more recently habitat loss, the Illinois population of this once abundant species has declined to but a very small representation of its former abundance. If it were not for the intensive land protection efforts of the Prairie-Chicken Foundation of Illinois, Illinois Department of Natural Resources, Illinois Natural History Survey, The Nature Conservancy, Illinois Audubon Society, and Ameren CIPS this species would certainly have been extirpated from Illinois by now. Lack of genetic diversity due to the small population size has contributed to recent population declines (Westemeier *et al.* 1998, Bouzat *et. al* 1998). However, translocation of individuals from populations further west appears to have restored genetic diversity into the population.

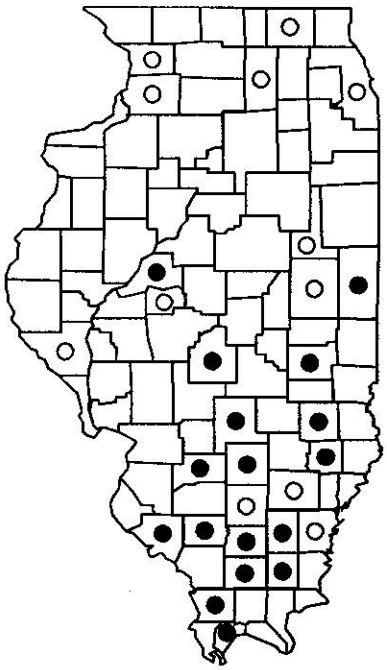
Management Recommendations: Illinois populations of the greater prairie-chicken are managed by the Illinois Department of Natural Resources. Land acquisition and restoration, seeding of required grass species, mowing, prescribed burning, and brush and exotic species control are primary management tools.



Tympanuchus cupido
(Greater Prairie Chicken)

Tyto alba (Scopoli)

BARN OWL **TYTONIDAE** **Status:** Endangered in Illinois



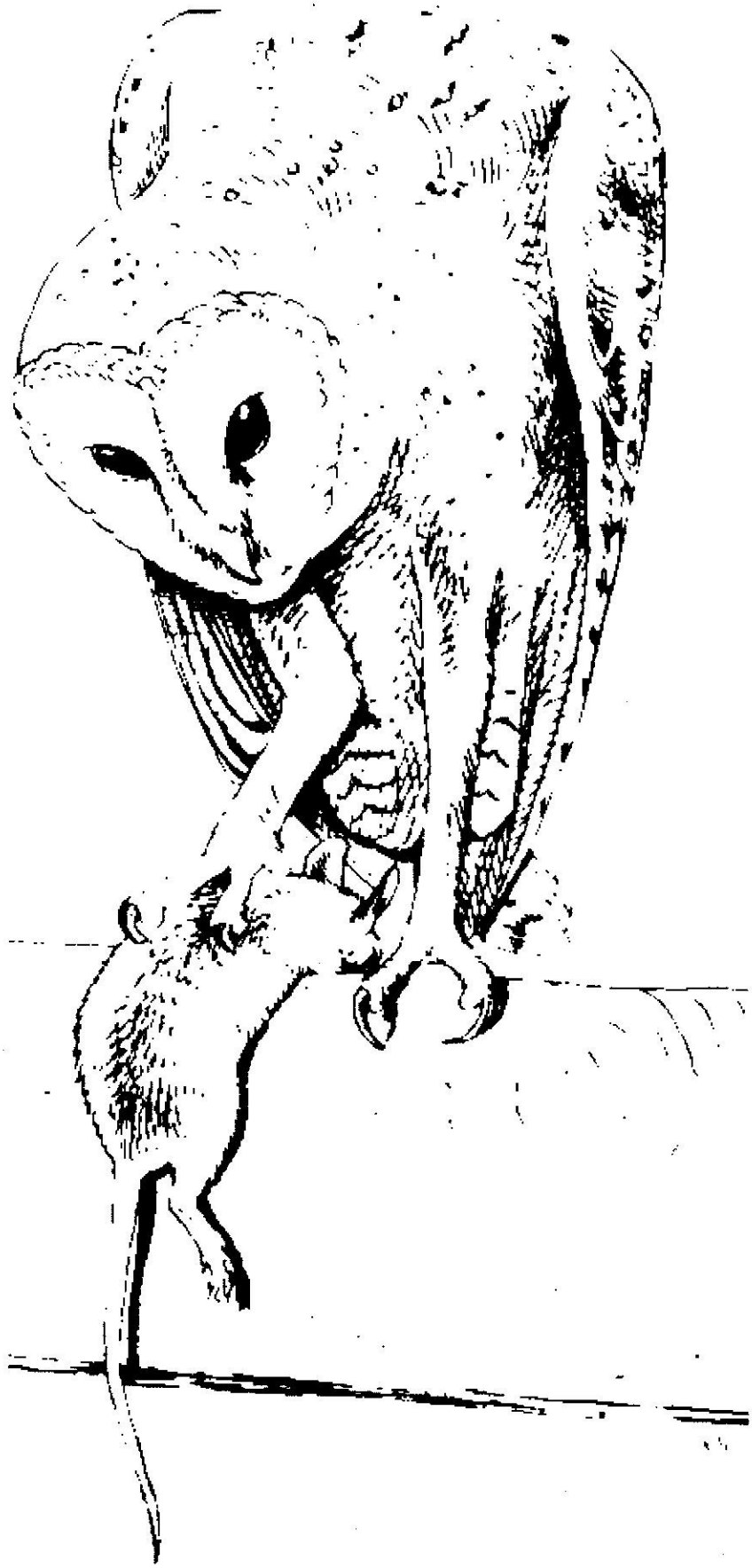
Present Distribution: The barn owl is distributed nearly worldwide, occurring in the Americas from extreme southern Canada to southern South America. Populations are very low in the northern portions of this area. In Illinois this species occurs statewide but is more common in the southern part of the state.

Former Illinois Distribution: Cory (1909) listed this species as of casual occurrence in northern Illinois and as a probable regular breeder in the southern part of the state. The barn owl probably once nested throughout Illinois, where it was considered to be relatively common or even abundant in some localities (Ridgway 1889).

Habitat: The barn owl occurs in open habitats, including grasslands, marshes and agricultural fields (Marti 1992). Nests are placed in a wide variety of cavities including trees, cliffs, rock outcrops, barn lofts, nest boxes, and crevices and cavities in houses (Marti 1992). Nesting in Illinois can occur at any time of year (Walk *et al.* 1999).

Reason for Status: Nearly every small town and some farms had barn owls prior to the early 1960s when populations declined rapidly (Bohlen 1989). Changing agricultural practices in the Midwest appear most likely to have contributed to population declines over the last two decades (Colvin 1985).

Management Recommendations: Habitat protection is probably the most effective management strategy for this species. Ensuring the availability of nest sites is essential as is providing open lands that support sufficiently high densities of small mammals (Colvin *et al.* 1984).



Tyto alba
(Barn Owl)