

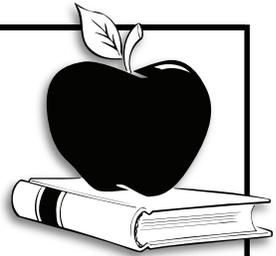
SUGGESTED GRADE LEVEL: 3

CORRELATION TO NEXT GENERATION SCIENCE STANDARDS: 3-LS4-3, 3-LS4-4

SKILLS/PROCESSES: observation, classification, inference, prediction

OBJECTIVE: Students will recognize that there are **threatened** and **endangered** bird species in Illinois and learn why they have been given this status.

TEACHER'S GUIDE



UNIT 3 ■ LESSON 3

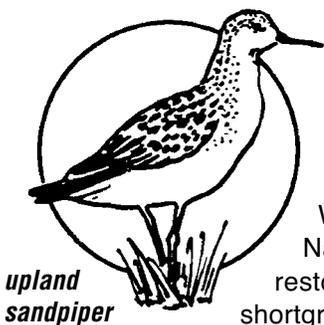
Here Today... Gone Tomorrow

BACKGROUND

Today, more than 9,900 species of birds inhabit the world, with 331 species listed as endangered or threatened as of 2015. In the United States, 100 bird species are listed as endangered or threatened. As of 2015, Illinois lists 24 endangered and seven threatened bird species.

Flocks of passenger pigeons (*Ectopistes migratorius*) once blackened the skies of North America for hours during their migrations. Passenger pigeons were a popular food item in the 1800s and were killed and shipped in large quantities to metropolitan areas. By 1895 these birds were considered **rare**. The last passenger pigeon died in the Cincinnati Zoological Gardens on September 1, 1914.

Numbers of the upland sandpiper, a state endangered species, have plummeted due to the loss of prairie.



upland sandpiper

Today, these birds may be found throughout the state on dairy farms or airports, but the largest known concentration of nesting upland sandpipers in Illinois is in Will County at the Midewin National Tallgrass Prairie. The restoration of large expanses of shortgrass prairies would provide attractive nesting **habitats** and

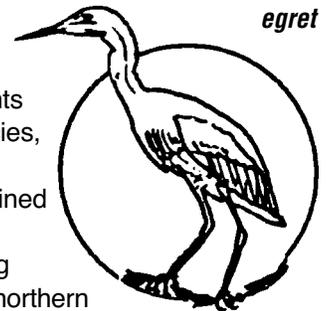
encourage recolonization.

Species are listed as threatened/endangered or become **extinct** for a variety of reasons. By law, changes to the endangered/threatened species list must be based on scientific evidence. Factors that are considered when evaluating a species include changes in population size, changes in range in the state, whether it occurs at protected sites, any known threats to its existence, as well as features of its life history which might have a bearing on survival. The Endangered Species Protection Board may remove from the Illinois endangered/threatened species list any nonfederally-listed species for which it finds satis-

factory scientific evidence that its wild or natural populations are no longer endangered or threatened in Illinois. A public hearing is held to consider the Board's action of listing, delisting or changing the list status of a species.

Historically, some bird species were jeopardized due to unregulated hunting. Today, loss or destruction of habitats is the primary reason for species' declines. Some birds are given the endangered/threatened designation because they are on the periphery of their range and may be more common in other locations (yellow-headed blackbird).

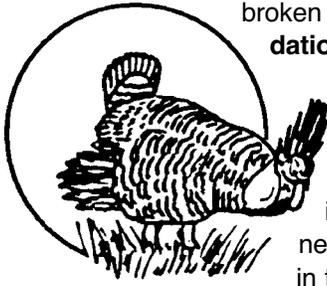
Habitat loss or destruction accounts for a significant number of the birds lost. Habitats may be destroyed through a variety of factors, including damming of rivers and streams, removal of vegetation, introduction of exotic plants which outcompete native species, and pollution of air, water and land. Wetlands have been drained for agricultural, industrial and urbanization purposes. Nesting populations of the black tern, northern pintail duck, great egret and American bittern have declined drastically as wetlands diminish. Loss of forests has affected nesting habitat for species like the wood thrush and brown creeper.



egret

Bluebird populations declined to dangerously low levels as meadows were converted to other uses. Intervention by people through agricultural set-aside programs and construction and placement of nest boxes in appropriate habitats has brought the bluebird back from the brink of extinction.

The decline of greater prairie-chicken populations is representative of how peoples' actions can compound to affect native wildlife populations. Conversion of prairies for agricultural purposes removed prairie-chicken "**booming**" grounds and nesting habitats. Unregulated hunting stressed population levels. As large areas of prairie were



greater prairie-chicken

broken up, an increase in nest **pre-
dation** by foxes, coyotes, skunks
and raccoons occurred as
these predators moved
along habitat edges. The
ring-necked pheasant, a bird
introduced from China, is a
nest **parasite** and lays its eggs
in the nests of prairie-chickens.

Pheasant eggs hatch earlier
than those of prairie-chickens, causing the prairie-chicken
hens to abandon their eggs to raise the pheasant
chicks. Today, less than 75 prairie-chickens remain on
specially managed **wildlife sanctuaries** in Illinois.

Neotropical migrants, birds that spend part of their year
in North America and the remainder in Latin America or
the Caribbean, are affected by **fragmentation** and
destruction of habitat areas in both their breeding and
wintering grounds. Neotropical migrants include a variety
of bird groups, such as warblers, thrushes, humming-
birds, swallows, flycatchers and orioles. Some species,
such as the Kirtland's warbler, are in imminent danger of
extinction. Others, while not as severely affected, have
declined by millions over the last century and this down-
ward trend could continue.

Population levels may be impacted not only through the
direct loss of breeding and wintering habitat but also the
indirect loss of food sources. The popularity of colorful
and vocal birds as pets has created a black market for
birds. More than 80 percent of the birds captured in the
wild intended for sale to pet shops die before reaching
the shop. **Pesticides**, such as DDT, were identified as
the causative agent for the decline of bald eagle, pere-
grine falcon and osprey populations. Excessive unregu-
lated hunting (passenger pigeon) and excessive use of
animal products (egret plumes for women's hats) histori-
cally threatened populations.

A variety of other human-caused actions can lead to
bird population declines. Thousands of migratory birds
are killed each year when they fly into tall buildings, tel-
evision towers, wind turbines and electrical power lines
and towers.

However, several species are now on the comeback trail
as a result of scientific studies to understand the life
requirements of the species, establishment of hunting
regulations, and public involvement in programs to pre-
serve, protect and manage habitats and species. The
peregrine falcon and whooping crane were close to
extinction, but human intervention through population
management and preservation of critical habitat areas
has ensured their survival. At the turn of the century the
wood duck population was dangerously low. Today, wood
ducks are present in sufficient numbers to allow harvest,

thanks to strict hunting regulations, construction and
placement of nesting boxes and sportsmen's commitment
to the species.

PROJECTS AND ACTIVITIES

1. Have the class participate in one or several of the
neotropical migratory bird activities in the *One
Bird—Two Habitats* unit from the Illinois Department
of Natural Resources.

EVALUATION

1. Have each student write a report on an Illinois threat-
ened or endangered bird, including its habitat, feed-
ing habits and reasons for being listed as endan-
gered or threatened. Visit the Illinois Endangered
Species Protection Board's Internet site at
<http://www.dnr.illinois.gov/ESPB/Pages/default.aspx>
for a current list of endangered/threatened birds in
Illinois.
2. Make an atlas of endangered bird species including
breeding and wintering areas, preferred foods and
migration routes.
3. Have each student write a paragraph relating how
he/she can make personal decisions which will
assist the survival chances of endangered and
threatened birds.

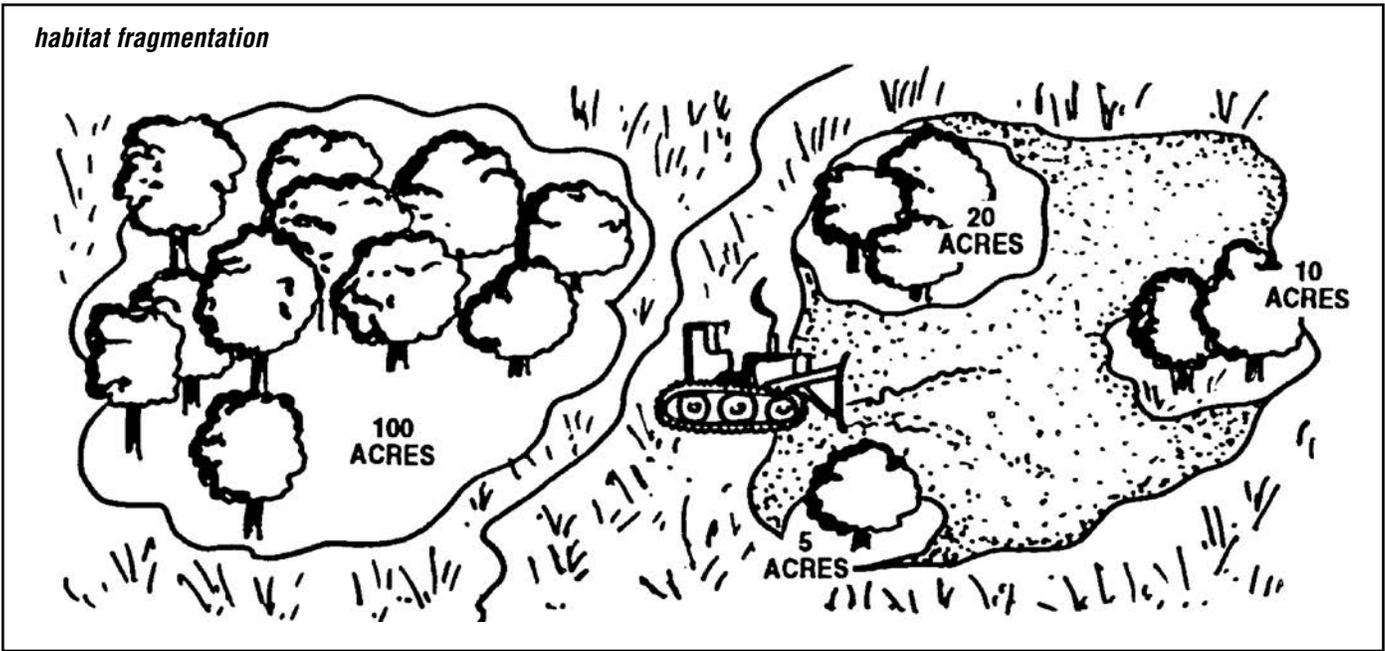
EXTENSIONS

- Research adoption of a plot of ground, such as the
"Adopt a Pothole" program coordinated by the Delta
Waterfowl Foundation. For more information about
this program, visit the Internet site at
<http://www.deltawaterfowl.org/what-we-do/adopt.html>.
- Trace bird migration paths and identify areas the
birds fly through and over.

VOCABULARY

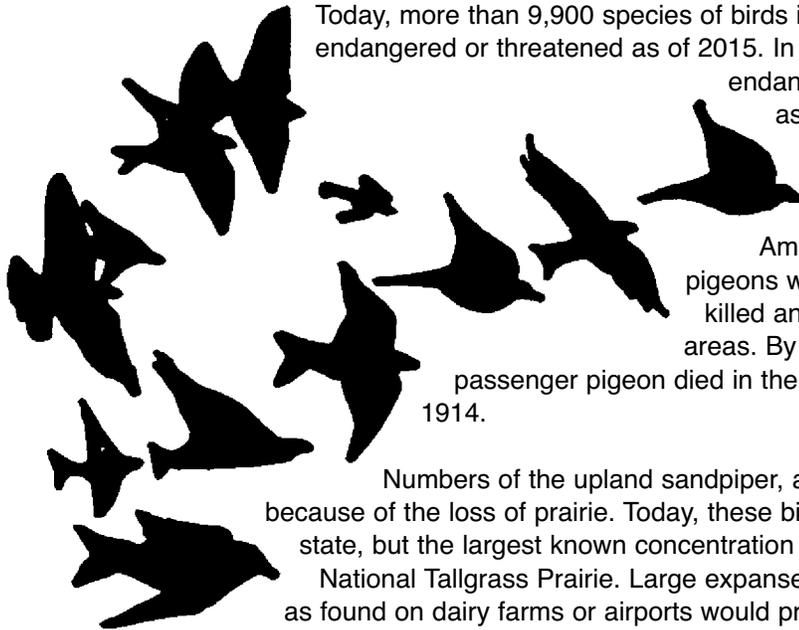
booming	parasite
endangered	pesticide
extinct	predation
fragmentation	rare
habitat	threatened
Neotropical migrant	wildlife sanctuaries

habitat fragmentation



Here Today... Gone Tomorrow

STUDENT'S GUIDE



Today, more than 9,900 species of birds inhabit the world, with 331 species listed as endangered or threatened as of 2015. In the United States, 100 bird species are listed as endangered or threatened. Illinois lists 24 bird species as endangered and seven as threatened species.

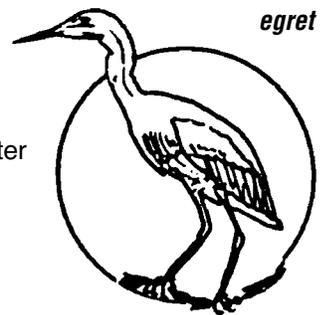
Flocks of passenger pigeons (*Ectopistes migratorius*) once blackened the skies of North America for hours during their migrations. Passenger pigeons were a popular food item in the 1800s and were killed and shipped in large quantities to metropolitan areas. By 1895 these birds were considered rare. The last passenger pigeon died in the Cincinnati Zoological Gardens on September 1, 1914.

Numbers of the upland sandpiper, a state endangered species, have plummeted because of the loss of prairie. Today, these birds may be found sporadically throughout the state, but the largest known concentration of nesting birds is in Will County at the Midewin National Tallgrass Prairie. Large expanses of short grass prairies or open pastures such as found on dairy farms or airports would provide attractive nesting habitats.

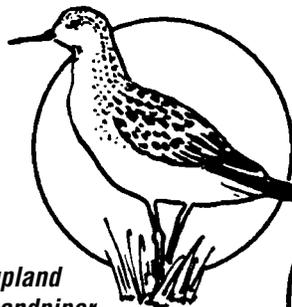
Why are species listed as threatened or endangered? By law, changes to the endangered/threatened species list for the state must be based on scientific evidence. Factors that are considered when evaluating a species include changes in population size, changes in range in the state, whether it occurs at protected sites, any known threats to its existence, as well as features of its life history which might have a bearing on survival. The Endangered Species Protection Board may remove from the Illinois endangered/threatened species list any nonfederally-listed species for which it finds satisfactory scientific evidence that its wild or natural populations are no longer endangered or threatened in Illinois. A public hearing is held to consider the Board's action of listing, delisting or changing the list status of a species.

Historically, species were jeopardized due to unregulated hunting, excessive use of animal products (egret plumes for women's hats) and pesticides. Today, loss or destruction of winter and breeding habitats is the primary reason for bird species' declines. Nest predation, nest parasites, loss of food sources and capture and sale of wild birds to pet shops affect some bird populations. Thousands of migratory birds are killed each year when they fly into tall buildings, television towers and electrical power lines and towers.

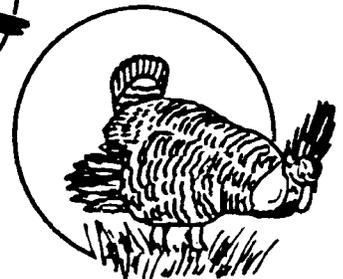
However, several species are now on the comeback trail. Scientific studies to understand the life requirements of the species, establishment of hunting regulations and public involvement in programs to preserve, protect and manage habitats and species are helping many birds.



egret



upland
sandpiper



greater prairie-chicken

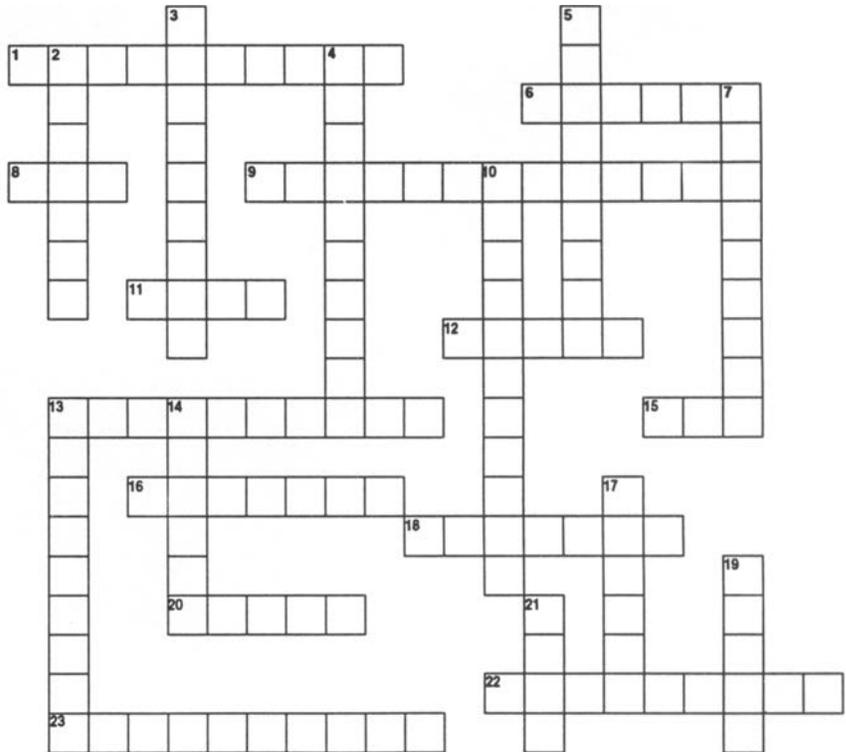
ACTIVITY PAGE

Bird Words

Use the clues below to complete the crossword puzzle. Note to teachers: The word list at the bottom of the page is provided for your use. You may elect to provide the word list to the students or photocopy the puzzle without the list.

Across

1. A species with the potential to become endangered.
6. These large wading birds have declined in numbers as wetland habitat has disappeared.
8. Pollution here threatens birds.
9. This process occurs when large areas of habitat are broken up into smaller sections.
11. Eighty percent of captured birds intended for this purpose die before reaching stores and homes.
12. The whooping ____ is an endangered bird.
13. DDT and other similar chemicals contributed to the decline of the bald eagle.
15. Birds do it.
16. This kind of chicken numbers fewer than 75 in Illinois today.
18. The barn ____ has long, pointed wings and only spends part of the year in North America.
20. This species is responsible for most of the reasons that birds become threatened.
22. Birds that have the law on their side are ____.
23. ____ means that no more members of the species survive.



Down

2. ____ is the natural environment providing food, water, shelter and space for organisms.
3. The upland ____ is a bird which lives in shortgrass prairies.
4. Having the potential to become extinct.
5. Birds that travel seasonally take part in ____.
7. A place where wildlife is safe.
10. ____ migrant birds include hummingbirds and orioles.
13. These falcons have adapted to city life.
14. The American robin is this type of bird.
17. The brown creeper has been affected by loss of this type of habitat.
19. Some birds build them on the ground.
21. Black ____ and northern pintail nesting populations have declined drastically as wetland areas diminish.

Word List
Across: threatened, egrets, air, fragmentation, pets, crane, pesticides, fly, prairie, swallow, human, protected, extinction
Down: habitat, sandpiper, endangered, migration, sanctuary, Neotropical, peregrine, thrush, forest, nests, tern

Word List