



Birds of Kansas Streamside Forests

Nature's Winged Legacy

Eastern Kansas hosts a wondrous variety of bird life. In addition to the better known grassland species such as meadowlarks and prairie chickens, there are many beautiful and melodious species along forested watercourses. From a bird's-eye view, streamside forests meander like green threads through a quilt of tallgrass prairie, crop fields, pastures and towns.

More than 100 bird species use stream and river forests in Riley County alone. Many depend on these riparian forests for nesting and rearing of young. Others use the forests as "stop over" habitat during migration or as a safe winter haven.

Landowners or land managers can play an important role in conserving nature's winged legacy. This publication describes features of streamside forests that are important for birds. It suggests ways to manage stream corridors for healthy bird populations. Best practices to promote bird life dovetail with those for managing streamside areas for other conservation purposes such as soil and stream bank stabilization, improved water quality, timber and firewood production, natural scenery, and habitat for fish and wildlife. Landowners can determine how well their streamside forests benefit birds.

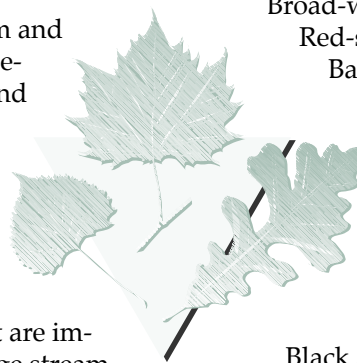
Forest Size and Continuity

Some birds require or prefer large tracts of forest of more than 50 acres. Large-bodied forest birds, such as the pileated woodpecker and red-shouldered hawk, require large territories for foraging. Others, especially such song birds as the red-eyed vireo, Kentucky warbler and ovenbird, need the security of the

inner forest for protection. For some species, such as whippoorwill, barred owl and wood duck, continuous stretches of woodland may be more important than forest patch size.

Birds that select larger patches of forest in eastern Kansas include:

- Hairy woodpecker
- Pileated woodpecker
- Broad-winged hawk
- Red-shouldered hawk
- Barred owl
- Wood duck
- Wood thrush
- Yellow-eyed vireo
- Scarlet tanager
- Red-eyed vireo
- Blue-gray gnatcatcher
- Northern parula
- Kentucky warbler
- Black and white warbler
- Ovenbird
- Black-billed cuckoo
- Whippoorwill



Forest Age and Condition

Mature forests with full-size, seed- and fruit-producing trees are important to some species, usually for adequate food supply, nesting sites and cover. Species associated with mature forests are:

- Hairy woodpecker
- Pileated woodpecker
- Barred owl
- Scarlet tanager
- Summer tanager
- Wood duck
- Northern parula

Ovenbird
Red-shouldered hawk

For other birds, the overall age of the forest may be less important than the presence of large, older trees for perching, roosting or nesting. Species that use large trees include:

Bald eagle
Red-headed woodpecker
Yellow-throated vireo
Osprey
White-breasted nuthatch
Brown creeper
Broad-winged hawk
Great Blue heron
Turkey vulture

Other birds, such as red-headed woodpecker, northern flicker, downy woodpecker, yellow-billed cuckoo and chuck-will's-widow, favor open woodland, which is forest with a broken or noncontinuous canopy. This habitat type allows these species to forage more efficiently.

Young forests are preferred by sharp-shinned hawk (dense trees) and yellow-bellied sapsucker, while American woodcock selects young forests with openings.

Often it is the understory vegetation, such as shrubs and small trees below the forest canopy, that determines the presence of certain birds. Species selecting dense understory areas for foraging or protection are:

Kentucky warbler
Yellow-billed cuckoo
Black-billed cuckoo
Willow flycatcher
Red-eyed vireo
Black and white warbler

Other birds such as whippoorwill and yellow-crowned night-heron prefer an open understory with parklike conditions below tree canopy.

Dead, Damaged and Diseased Trees: “3-D” Forest Conditions

Many birds require forests that have an ample supply of dead, damaged or diseased trees, also known as 3-D. Woodpeckers, flickers and sapsuckers excavate cavities in trunks and limbs that are broken or filled with decayed wood. These cavities serve as nest sites not only for the woodpeckers, but also for a host of other birds called secondary cavity nesters. For example, bluebirds are secondary cavity nesters of field and woodland edges. Other species, such as bald eagle and osprey, use tall dead trees as hunting perches. More than a dozen species of birds depend

wholly or partially on “3-D” forest conditions along watercourses in eastern Kansas:

Hairy woodpecker
Downy woodpecker
Pileated woodpecker
Red-bellied woodpecker
Yellow-bellied sapsucker
Bald eagle
Barred owl
Red-headed woodpecker
Wood duck
Northern flicker
Eastern screech owl
Osprey
Tree swallow
White-breasted nuthatch
Louisiana waterthrush
Tufted titmouse

Pollution and Disturbance

Toxic substances such as lead and other heavy metals, pesticides, dioxin and PCBs can reduce the health, reproduction and longevity of birds. Birds may be killed or become diseased. Pesticides can affect insect-eating birds by reducing their food supply. For northern parula, air pollution can destroy the lichens and mosses needed for nesting. Birds of streamside forests of Kansas that are especially vulnerable to environmental pollution because of their diet include:

Bald eagle
Yellow-throated vireo
Scarlet tanager
Black-crowned night-heron
Cooper's hawk
American woodcock
Osprey
Tree swallow
Northern parula
Black-billed cuckoo
Yellow-billed cuckoo
Whippoorwill
Red-shouldered hawk

Some bird species of streamside forests are sensitive to human disturbance, particularly when breeding and nesting. These include:

Bald eagle
Great blue heron
Turkey vulture
Wood thrush
Yellow-throated vireo
Summer tanager
Scarlet tanager
Black-crowned night-heron
Kentucky warbler

Whippoorwill
Chuck-will's-widow
Red-shoulder hawk
Cooper's hawk

Best Practices for Forest Management

Forest Restoration — Riparian forests may regenerate naturally if there are nearby mature trees as a seed source. Natural regeneration can be rapid for sites that experience occasional flooding, because water deposits sediment carrying tree and shrub seeds. Where natural regeneration would be slow or unlikely, a landowner should plant a variety of native tree and shrub seedlings. In either case, seedlings and saplings may need protection from livestock and wild herbivores such as deer. In some areas, the stream or river corridor will need to be restored or stabilized before reforestation is possible. Landowners that have established a young forest can consider using nest boxes to support certain species, such as wood duck and eastern screech owl, during the forest regrowth period.

For more information on establishing riparian woodlands, refer to K-State Research and Extension publication MF-2489, *Establishing Riparian Buffers*.

Low-cost native trees and shrub seedlings are available each spring from the Kansas Forest Service. For details, phone 785-532-3300 or visit www.kansasforests.org.

Forest Stewardship – In general, large forest patches are the most desirable for streamside bird communities of eastern Kansas. A few acres or more of forest can provide habitat for many songbirds, but larger tracts of 20 acres to several hundred acres may be needed for others, such as pileated woodpecker and northern parula.

Small openings in a forest are tolerated by many species and may benefit others (e.g. yellow-throated vireo, red-eyed vireo, Kentucky warbler, broad-winged hawk). Good to excellent canopy cover is also desirable, especially for smaller woodlands. Landowners with large patches of forest may wish to provide an understory of native shrubs of various composition and density to match the preferences of a range of bird species. For birds such as wood thrush and northern parula, it is important to retain leaf litter, which conserves soil moisture.

Riparian bird communities will benefit from a diversity of naturally occurring tree species. Some species, such as red-eyed vireo, black-and-white warbler and tufted titmouse, favor high tree diversity. Other birds may prefer certain tree species; for example, scarlet tanager and blue-gray gnatcatcher favor oaks.

Wherever possible, landowners should create a zone of dense shrubs and small trees along the transition between forest and field (soft edge), or allow shrubs to dominate open areas of the forest. Certain birds, such as Bell's vireo, white-eyed vireo, and Berwick's wren, require low, dense vegetation for nesting and protection from natural enemies.

Landowners should retain snags in flooded areas, protect beaver ponds and can even construct new wetlands near riparian forests.

Timber Harvesting – Landowners that harvest trees from riparian forests can benefit bird communities by maintaining a blend of trees of varying species, ages and sizes, and a varied shrub and low tree understory. Several dead trees and damaged trees with dead branches should be retained on each acre. At least some large trees should be left (more than 20 inches diameter at breast height). Thinning can be used to release other trees for more rapid growth and maturity. Thinning will favor some birds over others, but landowners should avoid clear cutting, heavy selective cutting (which can eliminate even versatile species such as eastern screech owl), and timber operations during the bird breeding season. Long harvest rotations of more than 50 years and reducing tree removal can help provide mature forest conditions important to many birds of eastern Kansas.

Firewood cutting – Landowners should avoid excessive firewood removal of dead trees and branches, especially big trees, because it eliminates nesting habitat for species such as red-headed woodpecker, which has been declining in numbers. It is useful to retain snags in groups whenever possible. Downed timber can be left for species such as Louisiana waterthrush that nests under logs and upturned trees.

Livestock Grazing – Livestock owners should avoid grazing areas of young tree seedlings and riparian woodlands. Use of alternative water supplies, alternative shelter and fencing for livestock can help prevent overgrazing. Some birds, such as willow flycatcher and Cooper's hawk, are especially sensitive to loss of vegetation by livestock grazing and related indirect environmental effects such as soil compaction, root exposure and gullying. In Kansas, the whippoorwill requires ungrazed woods for nesting.

Recreational Activities – Recreational activities should be diverted from nests and roosts of birds that can be easily disturbed, such as bald eagle and red-shouldered hawk. Avoid disturbing spring nesting birds, especially ground-nesters such as Kentucky warbler, ovenbird, whippoorwill and Chuck-will's-widow.

Pest Species – European starlings displace many native birds through aggressive competition for nest-

ing cavities. Starlings can out-compete northern flicker, a species that creates cavities for many other native birds.

Another nonnative, the house sparrow, will remove the young of other birds when taking over a nesting cavity. Brown-headed cowbird, a bird that lays its eggs in the nests of other birds, can heavily affect songbird populations. Landowners can discourage these species and other pests by preventing or limiting access to livestock feed, grains and garbage, and by placing feedlots and stables away from forests. They can also reduce predation on forest birds by controlling free-ranging domestic cats.

Pesticide Applications – Contamination of riparian forest with herbicides and insecticides can be avoided by proper timing, spacing and positioning of applications. Farmers and other property owners can reduce risk to birds and other wildlife by using pesticides with the lowest toxicity and at the lowest effective concentrations. Alternative measures for pest control should always be considered.

Land Development and Conservation – Landowners can incorporate conservation of forest birds in development and management plans to enhance the beauty, safety and value of their property. Measures include setbacks from riparian forest for home building, construction and maintenance of wooded wetlands and careful placement of roads and trails to avoid forest fragmentation. Riparian forests can be secured against future development through measures such as conservation easements and purchase of development rights

(contact a land trust for assistance). Landowners can also collaborate with others to encourage broader community support for conservation of streamside forests in eastern Kansas.

Where To Find Assistance

Landowners who wish to develop and improve stream sides for birds and other wildlife can contact:

- USDA, Natural Resource Conservation Service, 760 S. Broadway, Salina, KS 67401, (785) 823-4500 (ask about the Wildlife Habitat Incentives Program)
- Kansas Department of Wildlife and Parks, 512 SE 25th Ave., Pratt, Kan. 67124, (620) 672-5911.

Technical assistance is also available for forestry practices and restoration from:

- Kansas Forest Service, 2610 Clafin Road, Manhattan, KS 66502, (785) 532-3300 www.kansasforests.org

Information and assistance on streamside stabilization and restoration is available from the Natural Resource Conservation Service and the

- Kansas Conservation Commission, 109 SW 9th Street, Suite 500, Mills Bldg., Topeka, KS 66612 (785) 296-3600
- Kansas Alliance for Wetlands and Streams, P.O. Box 236, McPherson, KS 67460, (620) 241-3636

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Charles J. Barden
Forestry Specialist

C. Dustin Becker
Assistant Professor, Forest Ecology

Tony Povilitis
Conservation Biologist, Life-Net

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