Managing Iowa Habitats:

Restoring Odd Areas in Rural Landscapes

Introduction

The landscape of early 1800s Iowa was an incredible blend of tallgrass prairie, wetlands, streams, and woodlands. Historically, this remarkably diverse countryside supported an abundance of wildlife. As Euro-Americans began exploring and settling the land, changes in these natural communities were a certainty.

The eventual impact of Euro-American settlement on Iowa's native plant and animal communities was severe. The natural treasures, the prairies, marshes, forests, rivers, lakes and streams, were traded for agricultural and economic prosperity. Under the pressure of a century and a half of intensive agricultural and urban development, many of Iowa's native plants and animals have vanished. While we have produced a world-renowned agricultural system, there are trade-offs.

Today, over 32 million acres of Iowa land is agricultural. With over 95 percent of the state in private ownership, private landowners are important land trustees. Rural landowners across the state already practice a variety of conservation techniques on their lands. Still, more can be done.

Non-tillable lands, like roadsides or fence corners, are often "wasted" space. These "odd areas" are easily converted to valuable wildlife habitat. This type of creative conservation management may prove critical to the future of Iowa's wildlife.

The proper management of non-tillable land is not only important for wildlife, but also for enhancing or improving environmental quality, recreational opportunities, and visual appeal. This publication is to assist landowners in managing those "odd areas" like abandoned farmsteads, roadsides, and fence corners.

IOWA STATE UNIVERSITY
University Extension

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Ecological specialist	Ecological generalists
pileated woodpecker	raccoon
wood turtle	white-tailed deer
crayfish frog	opossum

Wildlife needs

Outfitting "odd areas" with attractive features is the key to effectively managing them as wildlife habitat. Knowing what's attractive comes from understanding a few general wildlife biology concepts.

The basic requirements of all wildlife include **food, water, shelter,** and **space**. Individual components, with the exception of space, can be easily manipulated to provide or enhance wildlife habitat. The space needs are determined by the individual species and are not subject to human manipulation.

Certain species of wildlife, sometimes referred to as **ecological specialists,** have very specific habitat requirements. Since odd areas are typically small, discrete parcels or patches of land, it is difficult to attract specialists. It is more realistic for landowners to focus on attracting a different group of wildlife, the **ecological generalists.** These animals are able to use a wide range of resources and, like humans, adapt to a variety of habitat conditions.

Attracting targeted wildlife may mean tolerating the presence of what some people may perceive as less desirable species such as rodents or some insects. While sometimes viewed as a nuisance by people, they are important food sources for other animals, taking their places in the food webs of a rural landscape.

Encouraging animal diversity benefits people as well as wildlife. Insects are economically important to people as pollinators of a variety of food crops, like apples, and seed crops such as soybeans. In addition, they are an important food source for many types of wildlife.

General guidelines for managing odd areas

One way to attract diversity in wildlife species is to include variety in plant species and in plant structure. A collection of leafy plants, vines, shrubs, and trees offers food and shelter at several levels and in several seasons. This type of habitat brings more wildlife species than a monoculture of either trees or grasses. Variety in plants bring variety in wildlife.

In addition to providing variation in structure and form, make the edges of the wildlife area crooked. Although often preferred by people, the straight edges of a meticulously manicured lawn are less desirable to wildlife.

Finally, think year-round. Besides providing preferred foods such as serviceberry (*Amelanchier spp.*) and cherries (*Prunus spp*), include plants that have more persistent berries, like sumac (*Rhus spp.*) and highbush cranberry (*Viburnum spp.*). While preferred foods vanish rapidly during the growing season, the persistent varieties are an important food source for animals during the fall and winter months.

Thinking year-round is important when providing shelter as well. Red cedar (*Juniperus virginiana*), a common and easily grown conifer, and other evergreens provide excellent protection from extreme winter cold and wind, long after deciduous trees have lost their leaves. They also provide nesting cover for some birds and escape cover for small mammals.

In summary, don't settle for just one of these general guidelines. Creating a space combining several of these suggestions is sure to attract wildlife to your odd area.

Keep these general tips in mind when deciding how to manage specific odd areas such as homesteads, roadsides, or fence corners.

Some specifics...

Abandoned homesteads

Many rural lands have old homesteads no longer used or maintained by people. By providing some specific food, water, and shelter elements, these abandoned sites are great spaces to manage for wildlife.

Creating a smorgasbord for wildlife increases the odds of attracting several types of wildlife as well as meeting the nutritional needs of individual species at different life stages. For example, berries like serviceberry or dogwood may be a valuable food source for adult birds and mammals, but do not meet the protein requirements of young wildlife. Insects, like caterpillars or grasshoppers, are excellent protein sources.

While people typically don't directly provide insects as food, they do indirectly influence insect abundance and variety through management practices. By planting a diversity of plant species, a wide variety of insects are provided for the food chain. By eliminating mowing and/or spraying of these areas, insect survival is increased and so, therefore, is the survival of the birds and mammals that feed on them.

Flowering shrubs or plants, are valuable food sources for nectar-seeking animals such as butterflies and hummingbirds. In addition to being a direct food source, the insects attracted to the flowers serve as food for other wildlife.

Small ponds or pools of water attract wildlife of all kinds. They are extremely valuable for wildlife and provide excellent opportunities for people interested in wildlife viewing. Any water supply will likely become a hub of wildlife activity. Small pools are created by hand-digging a depression, or leaving a shallow container to catch and store rainwater.

The best watering areas take advantage of the natural terrain and plant cover, are located near natural or artificial cover, and provide a minimum of one escape route for animals using the water site.

Providing shelter is as important as food and water when managing an area for wildlife. It can be as simple as leaving existing rock piles and dead trees standing, or as complex as building brush or rock piles and nest boxes. Brush or rock piles are easy to construct and are used by a variety of wildlife. They are particularly valuable to small mammals such as the cottontail rabbit and Eastern chipmunk, and birds like house wrens and wild turkeys.

Roadways

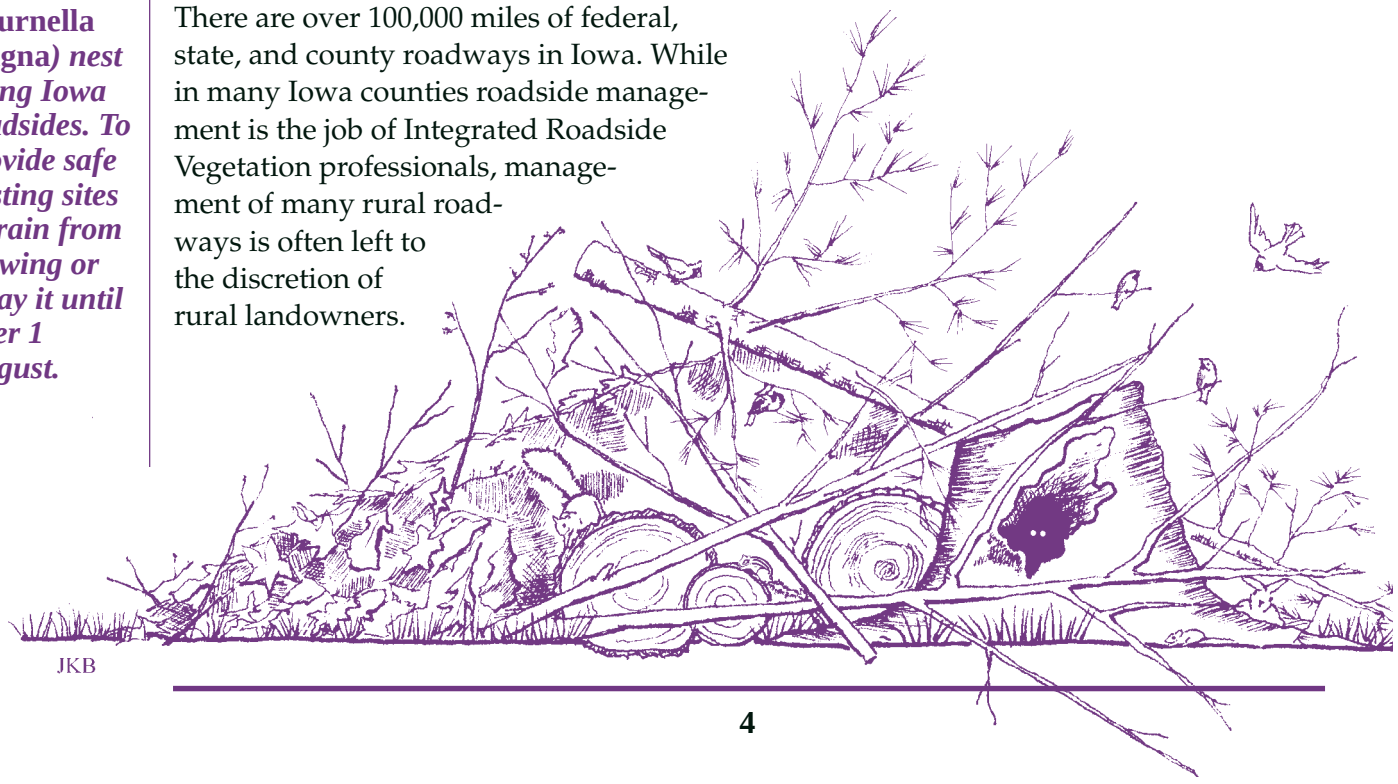
There are over 100,000 miles of federal, state, and county roadways in Iowa. While in many Iowa counties roadside management is the job of Integrated Roadside Vegetation professionals, management of many rural roadways is often left to the discretion of rural landowners.

Roadsides managed properly could potentially add 500,000 acres of wildlife habitat to the state.

Brush pile blueprint

- Place at the edge of other cover such as a grassy area or woodland.
- Space brush piles at intervals of 100–200 feet.
- Any large material, from logs to stumps or rocks, is suitable for a brush pile base and forms a network of tunnels inside the structure.
- Pile progressively smaller limbs and brush on top of the base to a height of 4–6 feet.
- The goal is a dense middle and loose edges.
- Over time materials settle, so simply add more!
- To extend your brush pile's life, plant a vine such as Virginia creeper (*Parthenocissus quinquefolia*)at the edge.

Grassland birds such as red-winged blackbirds (Agelaius phoeniceus) or western meadowlark (Sturnella magna) nest along Iowa roadsides. To provide safe nesting sites refrain from mowing or delay it until after 1 August.



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Well-managed roadsides benefit animals that use edge or corridor habitats. Studies indicate a variety of birds, insects, small mammals, amphibians, and reptiles benefit from the implementation of a few relatively simple roadside management practices.

Because different vegetative types, structures, and form attract a larger variety of animals, plant a diverse mixture of native grasses and flowers. Once planted, let it grow! Unmowed roadsides attract a significantly higher number of animals than mowed roadsides. Learn to recognize the species planted. Lack of knowledge often leads to unnecessary and harmful herbicide spraying on roadsides. A well-managed prairie roadside poses no threat to adjacent agricultural crops.

In general, eliminate or severely limit pesticide use along roadsides. Intensive chemical application is harmful to many species including insects, birds, and mammals. Direct effects include death of embryos and young and alteration in parental behavior of adults. Spot spray herbicides on problem plants rather than over-spraying the whole roadside.

Roadsides are ideal locations to maintain nest boxes for cavity nesting birds such as the American kestrel and eastern bluebird. Roadside nest boxes are accessible and easy to maintain.

Fence corners

Fence corners are easily manipulated to benefit many types of wildlife. By taking advantage of adjacent croplands, which serve as feeding sites and protective cover, fence corners are valuable assets for all types of animals.

It is easy to apply several of the ideas suggested in other sections of this publication to fence corners. Remember: variety in plant growth form and type benefits more types of animals than plantings of a single plant species. Promoting the growth of native warm-season grasses, flowering plants, shrubs, and trees provides food and shelter for area wildlife. In addition, maintain an overwinter food supply by eliminating fall tillage of crop fields. Studies show that even shallow tillage buries 90 percent of waste grain that could be used by wildlife.

Managing odd areas for wildlife: species highlights

Managing for certain species involves learning about the animal's habitat requirements or preferences. For example, different birds have different preferences for food and cover. In understanding both the basic and specific requirements of targeted animals, landowners can make a few modifications to the odd areas in and around their land to meet the needs of a variety of wildlife.

The easy access of fence corners made them an excellent location for placing and maintaining artificial nest structures such as this nest box designed for the Eastern bluebird.

Species highlights

Species	Feeding habits	Habitat requirements	Habitat modifications
American Kestrel 	Feeds mostly on insects, but also hunts for small birds and mammals in open fields.	Edge habitats between woodlands and open land are preferred. Kestrels are cavity nesters relying on other birds to excavate a cavity.	Leave dead or dying trees containing cavities. Artificial nest boxes placed 10–35 feet above ground and overlooking open fields are frequently used by kestrels. Roadsides are usually excellent locations for erecting kestrel nest boxes. Restrict insecticide use.
Bobwhite Quail 	Young quail feed primarily on insects such as caterpillars and grasshoppers. Adults feed on seeds, green plant materials, and insects depending on the season and food availability.	The best quail habitat includes a collection of grassland, cropland, brushy cover, brush piles, and woodlands.	Clumped tree and shrub plantings are favorite haunts for a covey of quail. "Messy" woodland edges offer good cover, as well. Native grass plantings of big bluestem, Indiangrass, and side- oats grama provide excellent nesting, brood-rearing and roosting cover.
Fox Squirrel 	Diet includes a variety of grains, seeds, mushrooms, and nuts, depending on season and availability. Mast (nuts and seeds) is high in energy and protein and is particularly important in winter months.	Trees provide food, shelter, escape routes, and nesting cavities. Fox squirrels prefer open stands of trees with very little understory and lots of edge.	Trees over 16 inches in diameter are most valuable. Leave old trees and snags standing (2–5 per acre). At least five food-producing trees per acre should be maintained.
Eastern Bluebird 	Feeds mostly on insects such as grasshoppers and caterpillars. Fleshy fruits like dogwood and red cedar fruits are also eaten.	Like kestrels, bluebirds are cavity nesters, relying on other birds to excavate a cavity. They need open areas with plenty of hunting perches (e.g., snags and utility lines) nearby.	Bluebirds will use artificial nest boxes placed near perches, 4–6 feet above ground, and overlooking an open grassy field. To minimize competition (for cavities) with wrens and sparrows, nest boxes should be placed away from buildings and brushy areas.
Bats 	Iowa bats are nocturnal and feed exclusively on night-flying insects. A single bat may eat hundreds of insects in one night. Young bats are nursed by their mothers until mid-to-late July when they are able to fly and hunt for themselves.	When not feeding, bats rest or roost in a variety of crannies and crevices or any other protected place. Some species migrate during the winter while others hibernate.	Provide shelter for bats by placing a bat house 10–15 feet or more above ground, facing east or southeast. The entrance should be easy to access from the bottom. If mounted on a tree, the entrance should be free of obstructions, such as branches or vines, below it.
Snakes 	Snakes are incredible predators, eating a variety of foods including earthworms, frogs, toads, mice, insects, small birds, and young rats. Iowa snakes are almost all non-poisonous and helpful.	Snakes live in a variety of habitats. They hibernate in "colonies" during the winter months. Snakes prefer areas offering plenty of hiding places like dense shrubs, tall grass, and rock and brush piles.	Build an underground rock pile as a hibernaculum to attract rodent-eating snakes. Plant shrubs nearby and water structures to provide cover and supply tadpoles and frogs for snakes to eat. Restrict use of pesticides. Brush piles also provide good summering areas and a variety of food for snakes.

Sources for additional information and technical support

Iowa Department of Natural Resources, Wallace Building, Des Moines, IA 50319
515/281-5145

County Conservation Boards – Listed under the "Government-County" section of your local phone book

Natural Resource Conservation Service—County offices listed under "Government—Federal, USDA" section of your local phone book.

Soil Conservation District—Listed under the "Government-County" section of your local phone book.

Iowa State University Extension Service—County offices listed under the "Government-County" section of your local phone book.

Other Iowa State University Extension publications useful in restoring odd areas

IAN-201	Iowa's Biological Communities
IAN-307	Iowa's Shrubs and Vines
IAN-401	Iowa Wildlife Management
IAN-408	Adapting to Iowa
IAN-501	Changing Land Use and Values
Pm-1302f	Managing Iowa Wildlife: Wild Turkeys
Pm-1302g	Managing Iowa Wildlife: White-tailed Deer
Pm-1351b	Managing Iowa Habitats: Wildlife Needs That Dead Tree
Pm-1351d	Managing Iowa Habitats: Attracting Birds to Your Yard
NCR-338	Shelves, Houses, and Feeders for Birds and Mammals

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