



IOWA

Introduction and General Description

Iowa has a rich tradition of farming. The State consistently ranks at or near the top in the nation's production of many commodity crops and livestock. The aggressive approach to developing land for agriculture resulted in a change to much of Iowa's landscape. By the late 20th century, 98 percent of the State's wetlands had been drained or altered and an astounding 99.8 percent of Iowa's tallgrass prairie had been subject to the plow.

Over the past two decades, Iowans from all walks of life have *actively* pursued a more balanced approach to land use and natural resources. Issues involving water and air quality, natural areas protection and sustainable land use have brought rural and urban citizens to the same table to develop and implement new approaches to stewardship and environmental protection. Since more than 90 percent of Iowa is privately owned, reaching our goals of sustainable land use and air, water and wildlife quality and diversity will largely depend on activities involving private lands and landowners. Perhaps more in Iowa than any State, opportunities for conservation on private lands is critical to the survival of wildlife resources.

Since 1987, the Partners for Fish and Wildlife Program has worked in cooperation with landowners to

restore habitat for fish and wildlife on private lands in Iowa. More than 1000 wetlands have been restored and nearly 300 landowners have received assistance from the Partners Program to restore native prairies on their farms.

Habitats of Special Concern

Most of the landforms in Iowa has been created by glaciation. These geologic events have given Iowa some unique natural communities. However, many of the native plant and animal communities that existed before European settlement have been drastically altered by agriculture and development.

Wetland/Prairie Complexes

Thirty-five counties in north-central Iowa are part of a larger northern Midwest geographic region known as the prairie pothole region. The last Ice Age left a mosaic of shallow wetland basins surrounded by undulating hills



Restored prairie pothole, surrounded by tallgrass prairie.



Prairie restoration in Winnebago County, Iowa

Photo: USFWS

covered by tallgrass prairies. These "prairie potholes" supported vast populations of waterfowl and other wildlife such as hawks and owls, greater prairie-chickens, shorebirds, migratory songbirds (e.g., bobolink, dickcissel, Henslow's sparrow), bison, elk and many other birds, reptiles, amphibians and mammals.

Pothole wetlands are generally small depressions, containing thick deposits of black, rich soils. When drained, potholes become exceptionally valuable farmlands.

Over 98 percent of the pothole wetlands in this region of Iowa have been drained for agriculture. Restoring these important wetlands and their associated prairie uplands remains one of the highest priorities for the Partners Program in Iowa.

Iowa Loess Hills

The Loess Hills were formed during glacial events from windblown silt deposited in ridges along what is now the Missouri River floodplain in western Iowa.

These hills are Iowa's most unique and significant landform, because the depths of the loess deposits are unmatched in the world.

The Loess Hills are steep, rugged and dry. These conditions result in plant and animal communities that are more associated with the dry climate of the short grass prairies in western States.

A large percent of Iowa's remaining unplowed prairie is found in the Loess Hills. The integrity and biodiversity of the natural communities are threatened by urban sprawl, soil removal to be used as fill material at other development sites and most notably, the lack of fire management to control invasive woody species, particularly non-native eastern red cedar.

Fens

Fens are wetlands with peat soils formed from partially decomposed plant remains. They are fed by groundwater, so are saturated and boggy, but have little standing water. Fens are usually found on the side of a hill where the groundwater seeps out.

Fens are the rarest of Iowa's wetland communities. They are home for over 200 species of plants, most found *only* in fens including 20 State endangered and threatened plants.

Approximately 200 fens remain in Iowa and 25 are considered to be high quality. The others have been lost or degraded by draining, mining for peat and/or converting to water sources for livestock.

Most of the remaining fens in Iowa are on private land. Their uniqueness, rare plant communities and complexity of peat soils and calcareous (alkaline) groundwater seepage make protection of the remaining fens a high priority.

Threats

In some sense, the "Habitats of Special Concern" listed above are the result of the long term and immediate threats to those habitats. Farm economics, urban development, land use policies and lack of immediate resources to stop or slow the spread of invasive species are shaping the Iowa landscape of the future.

Wetland/Prairie Conversion

Iowa's wetland and prairie resources have been altered so greatly over the past 100 years that conversion or loss of the few remaining "natural" prairies and wetland could be considered a threat to these natural resources in general. Our remaining tallgrass prairie remnants have become the source of genetic seed material needed to restore Iowa prairies. Similarly, the 25 or so remaining high quality fens are the only sources of seed for 20 rare Iowa wetland plants.



Farmed prairie pothole.



Eastern prairie fringed orchid – a rare wetland plant.

Invasive Species

Several plants, exotic to Iowa, have been accidentally or intentionally introduced and are threatening the natural communities in the State. The eastern red cedar has spread throughout the Loess Hills altering much of the area's prairie character.

Reed canarygrass, introduced to stop soil erosion along grassed waterways and field terraces, is now the dominant species in many wetlands.

Some non-native varieties of a "native" species have been introduced in the State that are detrimental to the local native plant communities. For example, varieties of switchgrass native to Kansas and Nebraska, were planted in Iowa for conservation purposes. Unlike the Iowa "native," these varieties of switchgrass can have extremely aggressive growth characteristics that completely crowd out other native prairie species. Entire fields

have become a monoculture of switchgrass, resulting in limited wildlife habitat benefits.

Conservation Strategies

The Partners Program addresses wildlife habitat issues in Iowa through partnerships with other Federal and State agencies, private conservation organizations and private landowners with similar concerns and objectives. The synergy resulting from the cooperative partnership approach is demonstrated in the impressive accomplishments. In some cases we have provided leadership and direction to a project. More often, the Partners Program staff serve as team members, bringing specialized skills, knowledge and resources for wildlife habitat restoration and protection to landscape level resource issues. For example, the Partners Program provides important resources and technical skills to the prairie pothole wetland/prairie complex restoration effort. The USDA Conservation Reserve Program and Wetlands Reserve Program are providing additional incentives to landowners, Iowa Department of Natural Resources is protecting and managing wetland and prairie complexes and the Partners for Fish and Wildlife Program has restored over 800 pothole wetlands in the area. Not only do the wetlands provide wildlife habitat, they also reduce nitrogen and phosphorus in drinking water.

Wetlands

Prairie pothole wetlands are restored by reestablishing the water regime to the former wetland. Drainage tiles are located, removed or rerouted. Surface drainage ditches are plugged to eliminate or slow water leaving the site. The wetlands are usually revegetated naturally by seeds that remain in the soil or from adjacent wetlands.

Prairie pothole restoration is one of the least expensive and most successful habitats to restore. Restoration costs range from \$100 to \$500 per acre, depending upon the complexity and extent of subsurface drainage.



Unplowed prairie remnant near Neal Smith National Wildlife Refuge one year after prescribed burn.

Prairies

Restoring tallgrass prairies involves (a) preparing the site by providing a firm, weed-free seed bed, (b) planting the site by drilling or broadcasting seed, and (c) mowing and/or burning the site periodically to establish and maintain desired prairie species.

The costs for prairie restoration vary greatly depending upon the species composition to be planted, the pre-planting site condition and preparation needs, and the maintenance requirements to successfully establish the planting. Grass seed prices vary from \$3 to \$20 per pound and forbs cost up to \$700 per pound. A typical mix of 3 to 5 grasses and 20 forbs costs about \$250 per acre for seed alone. The Partners Program harvests prairie seed from established sites and Pheasants Forever matches funds, reducing seed costs to private landowners to \$50 per acre.

In another effort the Partners Program is cooperating with Iowa DNR and Pheasants Forever to increase the availability and diversity of local ecotype prairie seed. Since 1998, the groups have cooperatively harvested 30-40,000 pounds of prairie seed each year for public

and private land restoration projects. Each year, Pheasants Forever acquires over \$1 million of prairie seed from Iowa seed growers to “match” the harvested seed and make it available to private landowners. In addition the Partners Program and Iowa DNR staffs are collecting and growing uncommon and rare prairie species in production areas to increase the local seed diversity. Sixteen prairie forbs species not collected through harvesting are now added to the prairie seed mixes for planting on private land.

Partners

Partnerships are first and foremost with respect to the success of the Partners for Fish and Wildlife Program in Iowa. Our most important partners are the thousands of private landowners who choose to restore and protect habitat for wildlife on their farms. As discussed above, the Partners Program is *always* implemented in cooperative projects with private landowners and other agencies and/or organizations. Many projects and initiatives involve some or most of the organizations listed below. Many of the projects we participate in are initiated by one or more of the groups below. Our participation contributes to their success as well as ours.

U.S. Department of Agriculture
 Natural Resources Conservation Service
 Farm Service Agency
National Park Service
Federal Emergency Management Agency
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency
Iowa Department of Natural Resources
 Wildlife Bureau
 Fisheries Bureau
 Forests and Prairies Division
Iowa Parks and Preserves Division
 Water Quality Bureau
Iowa Department of Agriculture
Iowa State University
Iowa Department of Transportation
County Conservation Boards

Soil and Water Conservation Districts
School Districts
Cities and Towns
Pheasants Forever
National Fish and Wildlife Foundation
Soil and Water Conservation Society
Iowa Great Lakes Clean Water Alliance
Iowa Natural Heritage Foundation
Iowa Farm Bureau
Ducks Unlimited
The Nature Conservancy
Hawkeye Fly Fishing Association
Izaak Walton League

Accomplishments

Wetlands - The Partners Program has participated in the restoration of over 8,000 acres of wetlands (approximately 1,000 sites) in Iowa. Most of the projects focused on the prairie pothole watersheds of north-central Iowa.

Prairies - Through our partnership with Iowa DNR and Pheasants Forever, we have restored prairie at 300 locations in Iowa. We have established prairie seed production areas to increase our diversity of local ecotype prairie species. In 2001, we will have seed for 30 additional prairie species used in our private and public lands prairie seed mixes.

Invasive Species Management - A partnership with The Nature Conservancy, Iowa DNR Forests and Prairies and seven county conservation boards was established to assist landowners to manage grasslands in the Loess Hills. The Partners Program provided equipment, personal fire gear and training to assist landowners in the use of prescribed fire. In its first year, more than 1,000 acres were treated. Several thousand acres will be treated over the next several years.

Future Needs

Wetlands - Over 2 million acres of prairie pothole wetlands originally existed in Iowa. Approximately 100,000 acres remain or have been restored (about 5 percent). Many of the marginal agricultural lands could be restored through voluntary agreements.

Prairies - Over 70 percent of the original Iowa landscape was tallgrass prairie -- 25 million acres. Today less than 10,000 acres remain. By expanding our native seed harvest, encouraging partnership matches from private seed growers, insuring local ecotype seed is available and increasing diversity of seed, we can assist many private landowner who wish to restore native grasslands.

Fire Management - As we increase the grassland acreage in Iowa, prescribed fire management is needed. Additional training, equipment and assistance for private landowners will be needed.

Invasive species - Non-native woody encroachment in prairies and reed canarygrass expansion in wetlands continue to be serious issues in Iowa. Nearly all of Iowa's 100,000 acres of wetlands are infested with reed canarygrass. Additional research tools and resources are needed to maintain our landscape resources.



Prairie flowers bloom in a restored tallgrass prairie.



This prairie grass combine harvests the seeds while leaving the grass stems standing for winter cover and spring nesting habitat.

CONTACT



Jim Munson
Partners for Fish and Wildlife Program
Neal Smith National Wildlife Refuge
P. O. Box 399
Prairie City, IA 50228
515 994-3400 (Fax) 515 994-3459

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