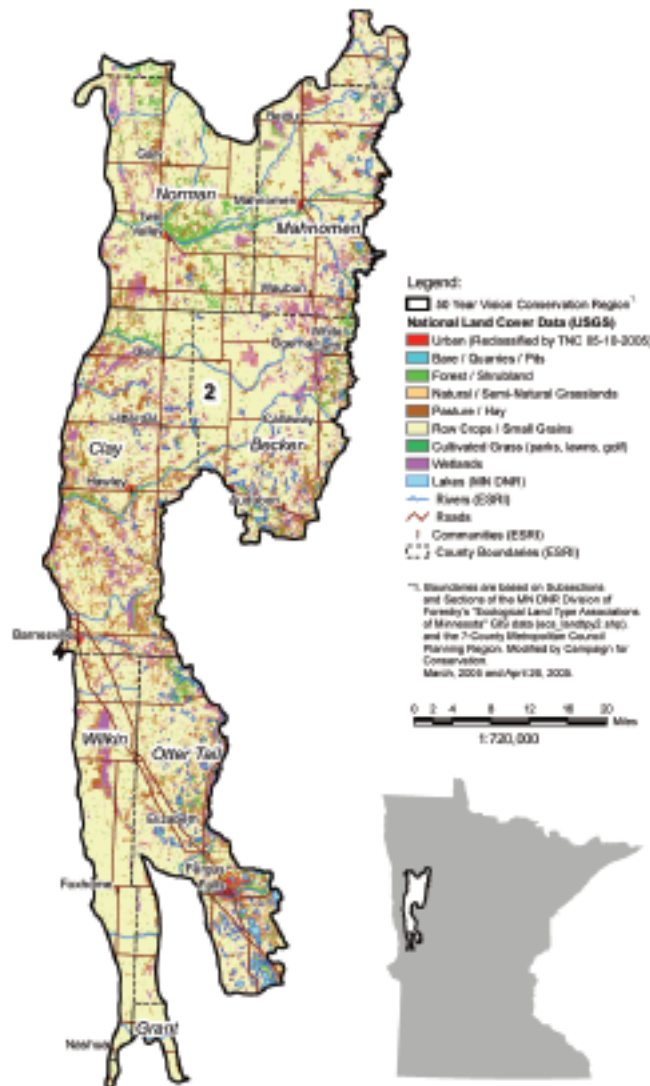


AGASSIZ BEACH RIDGES CONSERVATION REGION

50 Year Vision



“Only upon a prairie country, such as this was when its shore-lines were first traced, can the grandeur of the proofs of existence of glacial lakes, held by the obstruction of the departing ice, be taken in by an unimpeded vision of the smooth lake bottom on one side stretching out to a distance of 10 or 20 miles within sight, of the bordering beach, running as one unbroken ridge of gravel and sand in a nearly direct course discernible for several miles, and of the broad, slightly higher expanse of more undulating and knolly glacial drift outside the lake area.

— WARREN UPHAM, UNIVERSITY OF CHICAGO, 1894

The wide open spaces beneath the big sky of western Minnesota create a beautiful and compelling landscape. Fall brings clouds of migrating waterfowl and every pothole wetland becomes alive with birds. The sparse human population means that many miles often separate neighbors, but they are linked by a strong sense of community and familial ties that reach back several generations. Recreational opportunities abound for hunters, anglers and nature enthusiasts amid large blocks of wild lands.

This diverse and expansive landscape calls to mind a time that is lost for much of Minnesota but is still preserved in the Agassiz Beach Ridges region. One observer remarked of this region, “Wind, sunsets, natural, wild, free.” For many, the region’s access to nature and relative proximity to Fargo/Moorhead, St. Cloud and the Twin Cities make it an ideal location.

50 Year Conservation Vision

Nearly all the prairie in Minnesota that could have been converted to cropland has been. Some of the best remaining prairie in the state survives in this region because of the drought-prone sand and gravel soils that are remnants of the eastern shoreline of Glacial Lake Agassiz. Future conservation efforts will focus on protecting large tracts of habitat building upon existing prairie along the Beach Ridges. Twenty percent of this region will be protected in conservation status – which closely approximates the current land cover. While the overall acres in conservation may not change drastically, an effort to create expansive prairie habitats will have significant benefits to a large number of wildlife species.

The Setting

Eight to ten thousand years ago, glacial Lake Agassiz covered over 200,000 square miles, including 17,000 square miles in Minnesota. The rise and fall of this ancient lake formed the dominant landscape features within the region. When the waters of glacial Lake Agassiz receded, waves of grassland as far as the eye could see replaced them. This living sea of summer flowers and green grass became home to nomadic hunters and herds of bison. It also left behind a fertile, level “lake bottom” landscape to the west that is now the Red River Valley and to the east, a series of prominent gravel ridges or beach lines that rise sharply from the prehistoric lake bottom. These lines form the Agassiz Beach Ridges of today.

Agassiz Beach Ridges has one of the lower population densities in the state and a very small industrial base. The largest towns in the region are Mahanomen and Fertile; the much larger Fergus Falls lies just outside the region. The region is also within 60 miles of the growing Moorhead area in Clay County and the Detroit Lakes area in Becker County. Clay and Becker counties are projected to grow by 5 percent and 20 percent, respectively, by 2030. This growth may put added pressure on the area, but high rates of development are not projected. The White Earth Reservation is located on the eastern edge of this region. An increasing number of residents commute to jobs in Fargo/Moorhead. This has led to an increase in land prices, especially in areas near lakes and natural areas.

Wildlife Habitat

The Agassiz Beach Ridges region includes a significant portion of the state’s remaining prairie acres, half of which are protected in preserves. The tallgrass prairie that at one time covered the entire Red River valley extended into these glacial ridges, marking the easternmost range of the prairie. While much of the prairie that dominated the Red River region prior to European settlement was eventually cleared for farming, some native prairie was preserved on the beach ridges because the soil was sandy and not as rich as heavy soils on the plain of the glacial lake. A highly diverse and complex mix of plants including bluestems, Indian grass, and several other grasses dominated the tallgrass prairie that characterized the beach ridges.



Typically an upland grass, little bluestem is characteristic of Minnesota’s once enormous prairie and is today an emblematic plant for the Agassiz Beach Ridges. Little bluestem is readily grazed by livestock, deer, and elk. It is also suitable for hay. Because of its growth habit and adaptability to a wide range of soil conditions, little bluestem is useful as a component of revegetation mixes. It is especially well-suited for use on thin upland range sites. Little bluestem seed is eaten by songbirds and upland game birds. The plant provides cover for ground birds and small mammals.

— *Natural Resources Conservation Service*

The remnant prairies of this region are its most precious natural asset. Prairies once covered more than 80 percent of the landscape. Prairies now comprise less than one percent of the area and only massive restoration efforts can hope to recapture a portion of what has been lost.

The reaches of the Red River tributaries (Wild Rice, Sand Hill, Otter Tail, and Buffalo) that flow through this ecoregion provide critical spawning and rearing habitats for many fish species (e.g., walleye, channel catfish, smallmouth bass). These habitats are critical to the function of the Red River system.

Scattered remnant tracts of native prairie and riparian woodlands in the Agassiz Beach Ridges are home to a surprising variety of wildlife. Some of the most pristine and extensive prairie tracts remaining in the state are found here. The region has important habitat for greater prairie chickens and marbled godwits, the region also contains critical habitat for loggerhead shrikes, northern pocket gophers and northern grasshopper mice. Areas important for SGCN include Agassiz Dunes, Felton Prairie, Buffalo River State Park, Bluestem Prairie Scientific and Natural Area, and many state Wildlife Management Areas and federal Waterfowl Production Areas.

The Minnesota County Biological Survey has completed its survey of this region and has identified 76,055 acres with biodiversity significance. Additionally, the Audubon Society identified, 41,928 acres as Important Bird Areas (IBAs) and The Nature Conservancy included 28,718 acres within terrestrial portfolio sites of the Northern Tallgrass Prairie Ecoregion. However, not all land within IBAs or portfolio sites are considered significant.

The 11 Scientific Natural Areas (SNAs) in the Agassiz Beach Ridges Region cover 6,308 acres. Some of the most important include Agassiz Dunes, Frenchman's Bluff, Twin Valley, Western Prairie, and parts of Felton and Bluestem Prairie SNAs. Further protection is afforded via 58 Reinvest in Minnesota (RIM) easements covering 3,140 acres. Five Prairie Bank easements preserve 535 acres of remnant prairie. Rare calcareous fens occur along the western downside slopes of beach ridges and some of the moraines toward the east. Many are degraded as a result of altered water regimes. Other important natural areas include the Glacial Ridge and Hamden Slough National Wildlife Refuges.

The National Wetland Inventory has identified approximately 123,000 acres of wetlands in the region. There are numerous critical areas for wetland and grassland conservation in this region. But, agricultural activity in the area over the past 100 years has affected many of the region's wetlands and shallow lakes. The 679 miles of ditches represent fully 28 percent of all the waterways in the region.

Three biomes (major ecological communities) come together in this region, creating an abundance of wildlife. The region teems with birds and is especially impressive during the waterfowl migration periods. Birds include uncommon species like Le Conte's sparrow, common moorhen, American avocet, marsh wren, sedge wren, sandhill crane and the red-necked grebe. Predators such as hawks, bald eagles, kestrels, merlins and harriers are common. Identified Species of Greatest Conservation Need are the Forster's tern, brown thrasher, greater yellowlegs, buff-breasted sandpiper and the greater prairie chicken.

“Twin Valley Prairie is a butterfly-watcher’s dream. Twenty-seven species of butterflies flutter among the preserve’s diverse wildflower population, including the state-threatened Dakota skipper. The preserve’s 170 species of plants attract a diversity of life, making Twin Valley an ecological treasure. . . In all, this land is home to 39 bird species, six mammal species and four amphibian species. . . This high-quality prairie is part of a larger complex of private and state-owned land that forms a major hotspot for biodiversity within the Agassiz Beach Ridges landscape. Located in the center of the landscape, Twin Valley Prairie SNA serves as an important staging area for sand hill cranes.”

— THE NATURE CONSERVANCY

There are 83 Species in Greatest Conservation Need (SGCN) known or predicted within the Red River Prairie Subsection. A majority of these have critical habitats within the Agassiz Beach Ridges Conservation Region. These SGCN include 36 species that are federal or state endangered, threatened, or of special concern. For example, nine mammal SGCNs are known or predicted to occur in the region, approximately 41 percent of all mammal SGCNs in the state. Areas important for SGCN include Agassiz Dunes, Felton Prairie, Buffalo River State Park, Bluestem Prairie Scientific and Natural Area, and many state Wildlife Management Areas and federal Waterfowl Production Areas.

Once home to bison, the region now harbors populations of whitetail deer, badger, moose and gray wolf. Rivers are home to strong fisheries including trout and a small number of sturgeon. Lakes are abundant with bass, walleye, pike and panfish.

Access in the area to hunting and fishing continues to be a concern as the price of land escalates, potentially limiting hunting opportunities to the wealthy. The 73 Wildlife Management Areas (WMAs) in the region total approximately 31,000 acres. The state WMA plan calls for acquiring an additional 30,134 acres, including 14,134 acres of inholdings. The U.S. Fish and Wildlife Service currently manages 31,379 acres as Waterfowl Production Areas or National Wildlife Refuges.

The region comprises a large component of both the State Duck Plan and the Ducks Unlimited's Living Lakes Initiative. The Duck Plan looks to restore and protect approximately 148,000 acres of habitat while the Living Lakes Initiative looks for about 197,000 acres to be restored and managed for waterfowl. Since the programs have similar goals, there is overlap in the acreage. The Agassiz Beach Ridges has approximately 20 miles of designated trout streams. Lawndale Creek is one of the state's most successful riparian restoration projects.

Species of Greatest Conservation Need will have healthy and sustainable population levels.

Strategies:

Habitat protection and restoration work should focus on key habitats of prairie, wetlands and lowland forests. Some of the region's distinctive species that will benefit include:

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| <i>Greater prairie-chicken</i> | <i>Assinboia skipper</i> |
| <i>Upland sandpiper</i> | <i>Blazing star stem-borer</i> |
| <i>Henslow's sparrow</i> | <i>Dickcissel</i> |
| <i>Red-tailed prairie leafhopper</i> | <i>Virginia rail</i> |
| <i>Northern grasshopper mouse</i> | <i>Sprague's pipit</i> |
| <i>Northern pocket gopher</i> | <i>Smooth green snake</i> |

Coordinate the habitat plans listed below to ensure maximum gains for habitat that benefits Species of Greatest Conservation Need.

As the prairie chicken goes, so does the prairie! The prairie chicken can be used as an 'indicator species' to tell us the quality of prairie habitats. A population of prairie chickens requires large tracts of suitable grassland habitat. As long as there are prairie chickens there will be prairie. And our surviving prairies will be stimulating, beautiful places for people and prairie life!"



148,000 acres of wetland and nesting habitat will be protected or restored as targeted in the Duck Plan.

Strategies

Prevent future draining or filling of the region's wetlands and any loss of springs and fens and limit patterned tiling to less than five percent of each watershed.

Restore fifty percent of all drained wetlands by 2057.

An additional 30,134 acres of Wildlife Management Area (WMA) lands will be acquired, focusing on habitats that benefit waterfowl and prairie chicken as called for in the WMA plan.

Remaining high priority natural areas including prairies and fens will be protected.

Strategies:

Identify and target critical areas that need to be protected and/or restored. Note: the County Biological Survey is 100 percent completed in this region.

Focus priorities on already inventoried sites such as:

- *76,055 acres identified by the County Biological Survey;*
- *28,718 acres by the Nature Conservancy within terrestrial portfolio sites;*
- *41,928 acres of Important Bird Areas identified by the Audubon Society.*

Target large expanses of grassland habitat for all wildlife, water quality and carbon sequestration.

Install and expand native buffers along all public waterways.

Create large blocks of grassland habitat.

Maintain a viable agricultural industry while leveraging federal farm bill opportunities for habitat conservation and wildlife-friendly farm practices.

Strategies:

Conservation tillage and permanent cover should be routine.

The prairie chicken population will be sustained and a viable hunting season will continue.

Strategies will be developed for implementation of a moose hunting season within next fifty years.

Lakes and Rivers

Prairie pothole wetlands, shallow lakes, and tributaries of the Red River are the substantial water resources in this region.

There are thirty lakes larger than 150 acres in the region. The Sand Hill River, Buffalo River, Otter Tail River, Pelican River, and Wild Rice Rivers are among the more notable rivers in the region. Although many water bodies remain to be assessed, the Minnesota Pollution Control Agency lists only four lakes and three streams in the region as impaired for failing to meet water quality standards.

Lakeshore development – especially on shallow lakes – is causing an increased level of impairments and degrading habitat for fish and aquatic life. Low dissolved oxygen is a problem as is a host of invasive species such as the spiny water flea, spotted knapweed, leafy spurge, purple loosestrife, and zebra mussels. Rivers and streams suffer channelization, dams and lack of natural connectivity.

The rise in demand for corn from fuel ethanol production has put pressure on Conservation Reserve Program (CRP) lands. Within the Beach Ridges, approximately five percent of cropland acres (44,000) are currently in CRP. The majority of these acres protect important wetland or riparian habitat and are due for renewal from 2007 – 2010. A conversion of the CRP lands to row crop production would once again expose these erodible soils protected by the CRP and impair water resources and upland habitats of the Beach Ridges.

As pressures increase to make the land more productive, there will be a subsequent pressure to drain wetlands on marginal farmland. This poses a threat not only to the wetlands, but also to streams receiving the drain waters that will experience increased erosion and flash flooding. Increased drainage also diminishes the ability to recharge groundwater sources that are vital sources of drinking water for the region. Pattern tiling is also becoming more common in this region.

All lakes and rivers will be tested for unhealthy levels of pollutants on a ten-year cycle, beginning with the estimated 85 percent that have yet to be tested.

Cleanup plans will be prepared for the region's lakes and rivers that fail to meet water quality standards (eight river segments and four lakes to date), including:

Hollow Reservoir
Marsh Creek
Otter Tail River
Pomme de Terre River
Rabbit River
Sandhill River
White Earth River
Wild Rice River (south branch)

Cleanup plans will be implemented to restore all impaired lakes and rivers to healthy water quality.

There are currently no approved cleanup plans for this region. Upon approval of future cleanup plans, they should be funded and implemented as soon as possible.

33.5 miles of critical, undeveloped lake and river shoreline will be acquired and protected for access and preservation as called for in the Aquatic Management Area Plan.

A self-sustaining sturgeon fishery will be established in the region's large rivers.

Dams and other impairments to natural stream flow will be reduced while preventing further wetland loss.

Strategy:

Remove all unnecessary dams in the Beach Ridges region.

Restore channelized streams where possible.

Develop incentives and regulations for enhanced protection of shoreline and stream restoration.

Aquatic Species of Greatest Conservation Need will have healthy and sustainable population levels.

Strategies

Aquatic habitat protection and restoration work should focus on key habitats of headwaters to large rivers. Some of the region's distinctive species that will benefit include:

Black sandshell

Common mudpuppy

Creek heelsplitter

Fluted shell

Parks and Trails

The one state park in the region, Buffalo River, contains approximately 1,300 acres with 55 acres of private inholdings. There are only eight miles of developed state trails in the area, but an additional 25 miles authorized by the legislature have yet to be developed. State Highway 32 along the Beach Ridges is a scenic drive and a popular destination for many travelers.

Birding has become an increasingly popular pastime in the area with nearby Detroit Lakes Festival of Birds being held annually for over ten years.. The Pine to Prairie Birding Trail traverses the region, highlighting areas such as Buffalo River State Park and the many Wildlife Management Areas (WMAs) and Waterfowl Production Areas (WPAs) as potential birding sites.

Complete the 25 miles of authorized but not yet developed state trails in the region.

Establish additional city, county, and regional parks and increase hiking, biking and canoeing opportunities.