Protecting Biological Diversity In Iowa Through Connectivity

SIERRA CLUB
IOWA CHAPTER

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TABLE OF CONTENTS

INTRODUCTION

Iowa is the most biologically altered state in the nation.[1] What was once a vast expanse of prairie, wetlands, rivers and wildlife is now almost nothing except fields of corn and soybeans. The Iowa legislature eloquently described this transition and its implications in the preamble to the Resource Enhancement and Protection Act in 1989, as follows:

> The general assembly finds that:
>
> 1. The citizens of Iowa have built and sustained their society on Iowa's air, soils, waters, and rich diversity of life. The well-being and future of Iowa depend on these natural resources.
> 2. Many human activities have endangered Iowa's natural resources. The state of Iowa has lost ninety-nine and nine-tenths percent of its prairies, ninety-eight percent of its wetlands, eighty percent of its woodlands, fifty percent of its topsoils, and more than one hundred species of wildlife since settlement in the early 1800's. There has been a significant deterioration in the quality of Iowa's surface waters and groundwaters.
> 3. The long-term effects of Iowa's natural resource losses are not completely known or understood, but detrimental effects are already apparent. Prevention of further loss is therefore imperative.
> 4. The air, waters, soils, and biota of Iowa are interdependent and form a complex ecosystem. Iowans have the right to inherit this ecosystem in a sustainable condition, without severe or irreparable damage caused by human activities.[2]

To put a finer point on it, prior to European settlement Iowa had several thousand species of plants and animals.[3] And the prairies that dominated Iowa at that time are one of the most diverse ecosystems of plants anywhere on Earth.[4] And Iowa's list of threatened and endangered species contains 128 endangered plant species, 178 threatened plant species, 94 endangered animal species, and 74 threatened animal species.[5]

One of the main reasons for the loss of species is destruction of natural habitat, resulting in habitat fragmentation. Habitat fragmentation cuts off species from critical movement between areas. Not only can fragmentation prevent species from reaching water, food, and mates, but it also prevents necessary biological processes. Fragmentation can disrupt gene flow within a population or when genetic material moves from one population to another.[6] Reduced or nonexistent gene flow disrupts genetic diversity; that genetic

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[1] https://www.nwtf.org/content-hub/a-tradition-of-acquisition; https://www.iowapublicradio.org/podcast/talk-of-iowa/2023-02-01/scientists-and-farmers-write-about-tending-iowas-altered-landscape

[2] Iowa Code § 455A.15

[3] James Dinsmore, *A Country So Full Of Game,* p. 3

[4] https://www.nps.gov/tapr/learn/nature/a-complex-prairie-ecosystem.htm

[5] 571 Iowa Administrative Code §§ 77.2 and 77.3

[6] *Evolution 101: Mechanism: The Processes of Evolution.* University of California Berkeley, Museum of Paleontology, June 2020

diversity "gives wild populations their best chance at long-term survival."[7] One way to address habitat fragmentation is by creating connectivity corridors, connecting the otherwise isolated habitats.

This report will discuss how Iowa can establish corridors in order to help our plants and animals flourish.

A HISTORY OF HABITAT LOSS IN IOWA

There is no written record of Iowa's natural environment prior to European-Americans arriving. The first Europeans to visit Iowa were Father Jacques Marquette and Louis Joliet in 1673. But they only traveled the Mississippi River and did not venture into Iowa itself.[8] European settlement came to Iowa in about 1833. Those early settlers found Iowa's climate, rainfall, and rich soil perfect for agriculture. And as agriculture became more prevalent, the prairies, wetlands, and woodlands were plowed up, drained, and cut down to make room for growing crops and livestock.

Iowa State University Department of Natural Resource Ecology and Management has vividly described this change in Iowa's landscape:[9]

- "While our current agricultural system achieves record productivity in crops and livestock, it is also associated with serious environmental shortcomings, including declines in water quality and *biodiversity*, increased flooding and greenhouse gas emissions, and even degradation of the foundation of agricultural productivity: the soil."

- "The conversion of land from perennial prairie where once a variety of plant and animal life lived, to row crop agriculture where one or two crops dominate, has greatly reduced the variety of plant life and subsequent habitat for a variety of animal wildlife."

- "The loss of biodiversity and wildlife habitat is concomitant with increased Iowa land area in row crop production. About 85% of Iowa was once covered by prairie. Today, much of the state is in agricultural production; specifically, 74% is in row crops. Such large-scale conversion of perennial prairie to row crop agriculture has greatly reduced the native habitat and biodiversity throughout the state. The loss of native habitat and biodiversity has not only negatively impacted plant diversity but also the diversity of birds and beneficial insects such as pollinators and natural enemies of crop pests."

- "Agriculture is the leading cause of land-use change."

[7] *Preserving Genetic Diversity Gives Wild Populations Their Best Chance at Long-Term Survival.* National Oceanic and Atmospheric Administration, November 2021

[8] James Dinsmore, *A Country So Full Of Game*, p. 5

[9] https://www.nrem.iastate.edu/research/STRIPS/challenge-3-poor-biodiversity-and-wildlife-habitat

- "Currently, Midwest farmers typically practice a corn-soybean rotation, which replaced more complex, diverse crop rotations practiced prior to World War II that included perennial plants in hay fields and pastures."
- "In Iowa, 74% of the total land area has been converted to cropland, and 86% of the cropland is planted in corn or soybeans."

The only parts of Iowa that could now be considered even close to being natural areas are state parks, forests, and preserves; a few preserved prairies; county parks; and forested areas along rivers and streams. There are also a few privately owned areas of woodlands, prairies and wetlands, but there is no definite list of those areas.

There are 66 state parks scattered around Iowa.[10] There are four state forests: Loess Hills State Forest in western Iowa, Stephens State Forest in southern Iowa, Shimek in southeast Iowa, and Yellow River State Forest in northeast Iowa. All of the parks and forests are fairly small (or very small) in size and many miles apart from each other, creating a patchwork of isolated areas that do not provide connectivity for plants and animals.

EFFORTS TO PROVIDE HABITAT IN IOWA

REAP

In 1989 the Iowa legislature passed the Resource Enhancement and Protection (REAP) Act.[11] 28% of the money allocated to REAP is to be used for the acquisition of open spaces, i.e, natural areas that would support wildlife.[12] 20 % of the funds are to be allocated to county conservation boards.[13] A portion of the funds allocated to a county could be used for acquiring natural areas. Another area that could be used for wildlife enhancement is the 3% of the REAP allocation that goes to the living roadway account.[14] These funds could be used to create wildlife corridors so animals can cross roadways.

When the REAP law was originally passed the appropriation to the REAP fund was set at $30 million, but that was reduced to $20 million.[15] But the Iowa legislature has not even appropriated the full $20 million.

3/8 cent sales tax

Iowa voters also approved an amendment to the Iowa Constitution to establish a natural resources and outdoor recreation trust fund, to be funded by a three-eighth cent increase in the sales tax.[16] To carry out that constitutional provision the Iowa Legislature

[10]https://www.iowadnr.gov/places-to-go/state-parks/iowa-state-parks
[11]Iowa Code §§ 455A.15-.20
[12]Iowa Code § 455A.19(1)(a)
[13]Iowa Code § 455A.19(1)(b)
[14]Iowa Code § 455A.19(1)(g)
[15]Iowa Code § 455A.18(3)(a)
[16]Iowa Constitution, Article VII, Sec. 10

established allocations from the trust fund account.[17] 23% of the money in the trust fund must go to a natural resources account, which is to be used for the following purposes that will enhance habitat for wildlife:

> a. The establishment, restoration, or enhancement of state parks, state preserves, state forests, wildlife areas, wildlife habitats, native prairies, and wetlands.
> b. Wildlife diversity.
> c. Recreational purposes.
> d. Technical assistance and financial incentives to private landowners to promote the management of forests, fisheries, wetlands, and wildlife.
> e. The improvement of water trails, rivers, and streams.
> f. Education and outreach that provide instruction regarding natural history and the outdoors. The subjects of such instruction may relate to opportunities involving recreational purposes, outdoor safety, and ethics.

But unfortunately, the legislature has not raised the sales tax in order to fund the account. In the past, legislators have also tried to change the funding allocations in ways that would destroy the efforts in existing law to enhance wildlife.

Wildlife Action Plan

Iowa also has a Wildlife Action Plan. This plan is required of any state that receives wildlife grants from the federal government. According to the Iowa DNR website's description of the plan:[18]

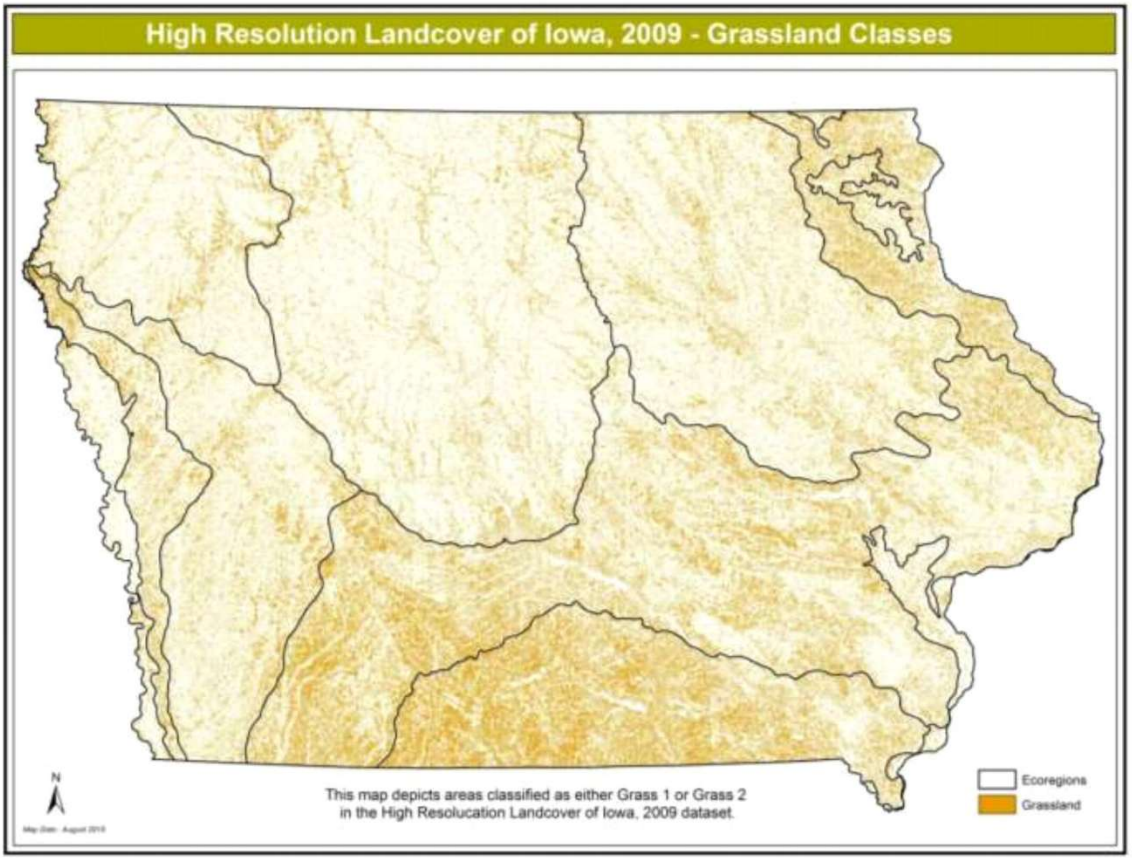
> First approved in 2006, the Iowa Wildlife Action Plan (IWAP) is a 25-year strategy for conservation of all wildlife in Iowa. The IWAP is a proactive plan designed to conserve all wildlife in Iowa before they become rare and more costly to protect.
>
> Developed by a coalition of scientists, sportsmen and women, conservationists, and members of the public, this plan can help us protect wildlife and the places they live for future generations. If the steps in the action plan are successfully carried out, Iowa will have cleaner water and air - a healthy environment for people and wildlife.

The most recent plan was developed in 2015 and is expected to be updated in 2025. It can be the blueprint for all efforts to protect and enhance wildlife in Iowa. The plan notes that because Iowa has a lack of natural areas remaining, general strategies in the plan for prioritizing of habitat protection tend to focus on enlarging the size of habitat complexes, reducing fragmentation, and increasing connectivity between larger areas of habitat. But there are many species that have very specific habitat requirements, and some of those

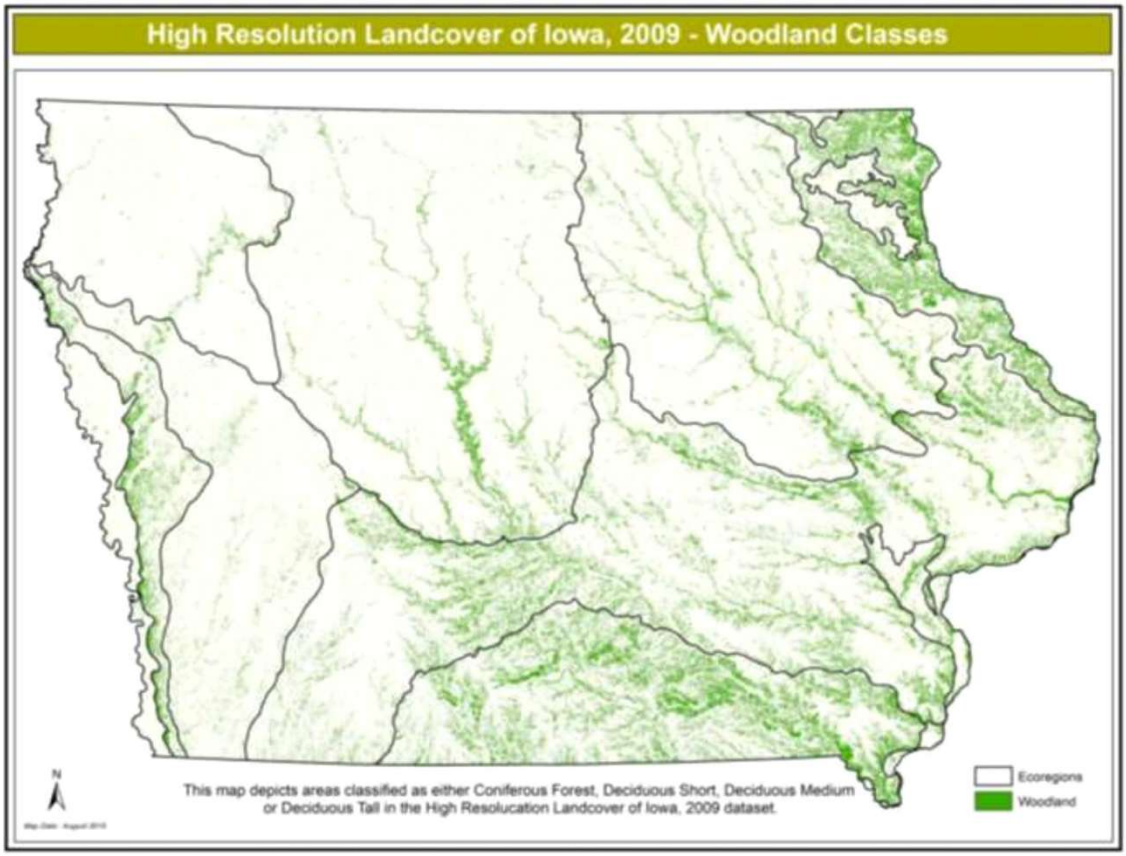
[17] Iowa Code § 461.32
[18] https://www.iowadnr.gov/conservation/iowas-wildlife/iowa-wildlife-action-plan

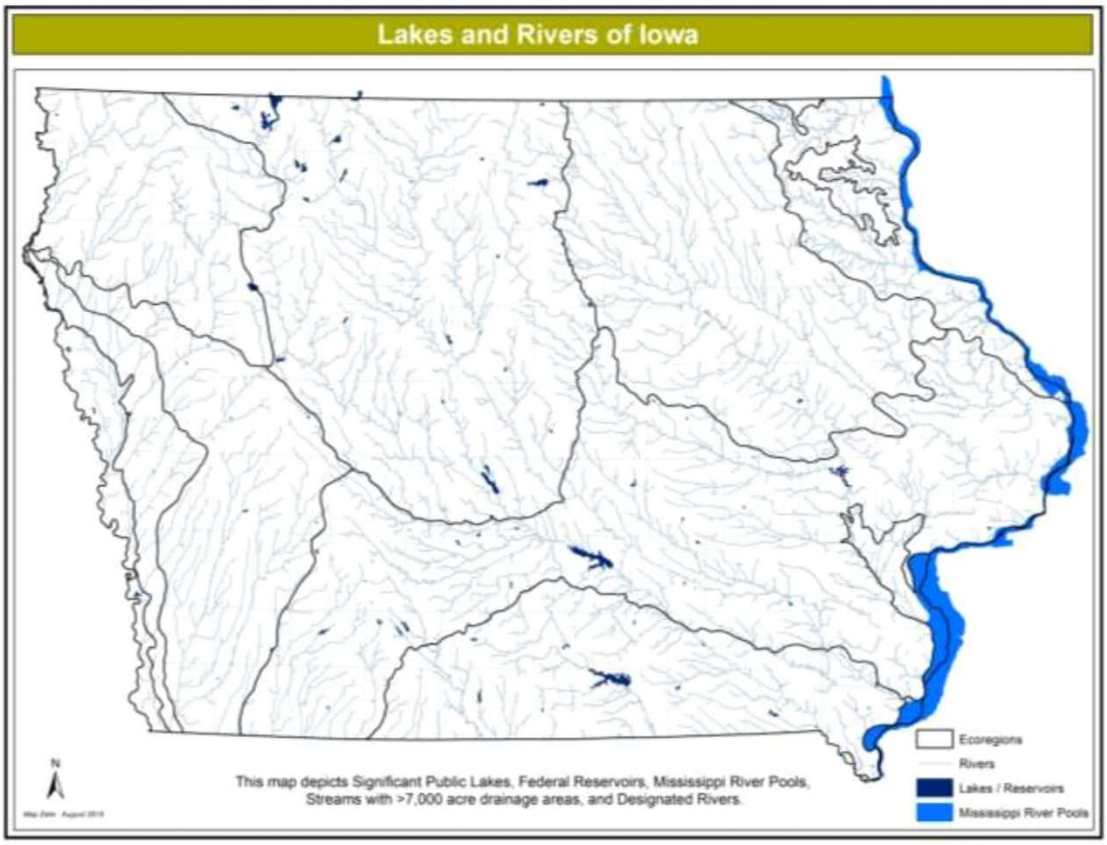
species require habitats that are rare in Iowa or are particularly sensitive to human disturbance. So conservation of wildlife will require an approach that addresses both general as well as specific habitat needs.

The plan identifies several ecosystems in Iowa: woodlands, grasslands, wetlands, and lakes and rivers. These are shown in the maps below.[19] The maps illustrate how fragmented Iowa's ecosystems are.



[19] https://www.iowadnr.gov/conservation/iowas-wildlife/iowa-wildlife-action-plan


High Resolution Landcover of Iowa, 2009 - Woodland Classes
N
This map depicts areas classified as either Coniferous Forest, Deciduous Short, Deciduous Medium or Deciduous Tall in the High Resolucation Landcover of Iowa, 2009 dataset.
Ecoregions
Woodland


Lakes and Rivers of Iowa
This map depicts Significant Public Lakes, Federal Reservoirs, Mississippi River Pools, Streams with >7,000 acre drainage areas, and Designated Rivers.
N
Ecoregions
Rivers
Lakes / Reservoirs
Mississippi River Pools

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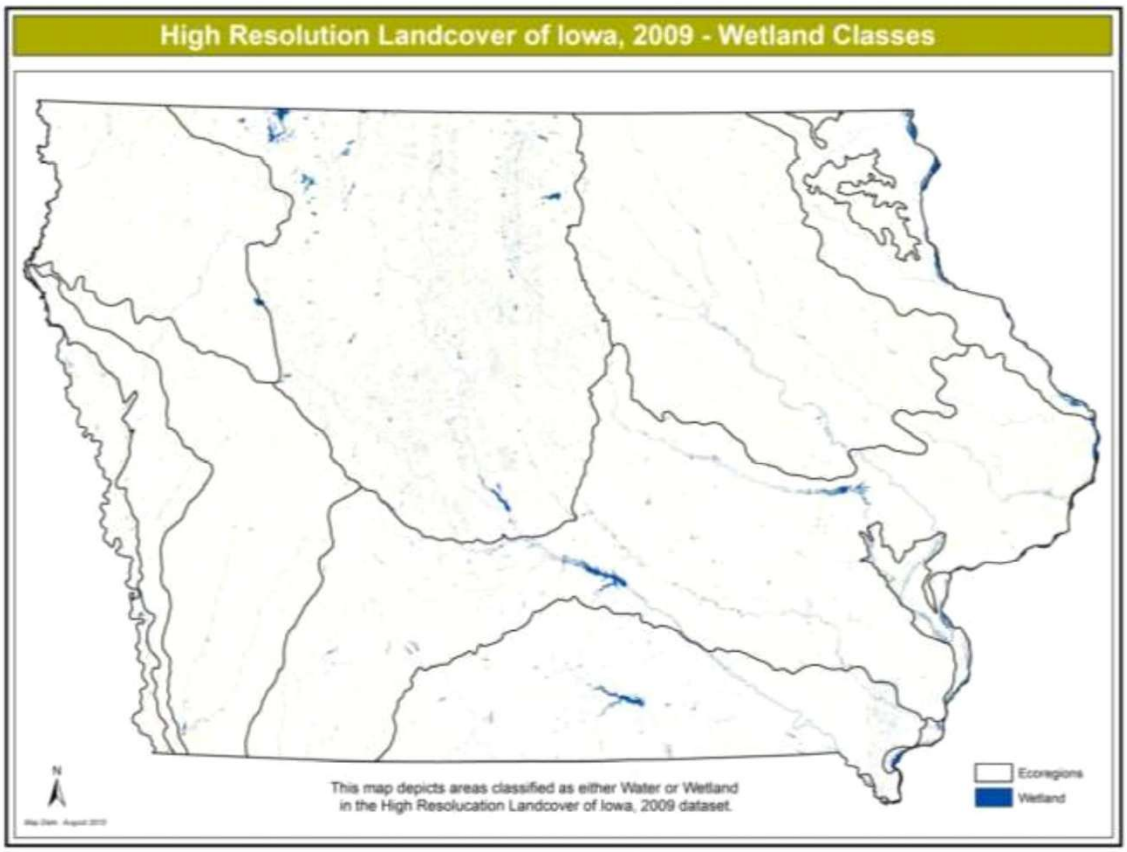
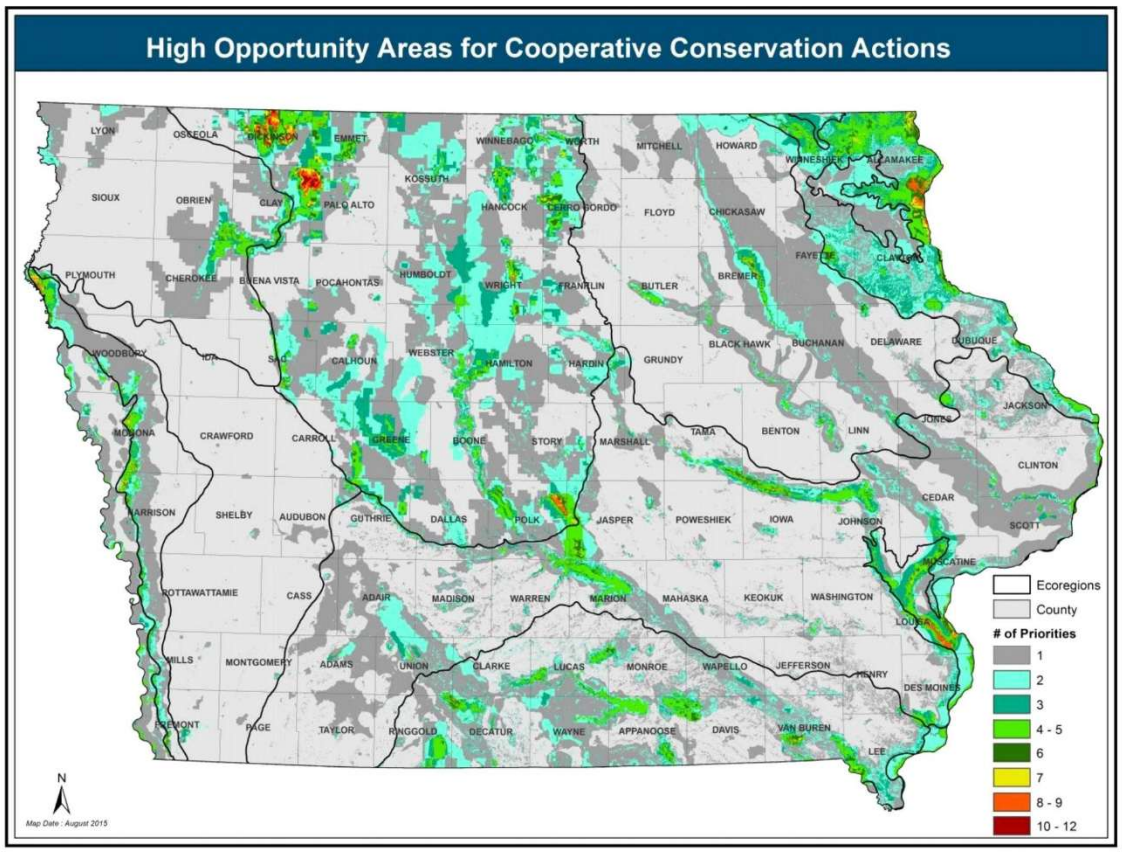

High Resolution Landcover of Iowa, 2009 - Wetland Classes
N
This map depicts areas classified as either Water or Wetland
in the High Resolucation Landcover of Iowa, 2009 dataset.
Ecoregions
Wetland

The plan then identifies several areas of the state that are priority areas for the protection of wildlife and habitat. These areas are shown on the map below.



With the REAP law, the natural resources and outdoor recreation trust fund, and the Iowa Wildlife Action Plan, Iowa has a strong base from which to build a vibrant conservation connectivity strategy.

CONNECTIVITY STRATEGIES IN OTHER STATES

Other states have taken steps to promote connectivity. A review of those state actions will be helpful in designing a connectivity strategy for Iowa.

Florida

Florida has undertaken the most robust effort to establish connectivity corridors. The Florida legislature passed the Florida Forever Act in 1999, which created a program that has collected ecological data to create mapping tools that have helped establish conservation priorities.

The Florida legislature followed up in 2021 with the Florida Wildlife Corridor Act. The act designated the Florida Wildlife Corridor as an existing physical, geographically defined area comprising over 18 million acres, of which almost 10 million acres are conservation lands. The goal is to "maintain[] wildlife access to the habitats needed to allow for migration of and genetic exchange amongst regional wildlife populations," as well as "preventing fragmentation of wildlife habitats," and "providing for wildlife crossings for the protection and safety of wildlife."[20]

The Florida Wildlife Corridor Act was the result of a collaboration by conservationists, scientists, landowners, ranchers, and politicians pushing for the legislation. Since the Act was passed in 2021, the state legislature has appropriated $850 million for protecting land within the designated corridor. In addition, 160,000 acres on 49 properties within and around the corridor have already been approved for conservation transactions. Additional annual funding will be used to acquire even more land. Some 40,000 acres have also been conserved by local land trusts and the federal government within the corridor.

California

California passed the most habitat-related legislation of any state – at least 22 bills passed between 2008 and 2023. The first bill required state agencies to investigate, study and identify essential wildlife corridors and habitat linkages. Another bill, passed in 2015, encouraged voluntary steps to protect functioning wildlife corridors. And in 2022 the stated adopted a bill to promote wildlife crossings across roads and highways.

New Mexico, Oregon, and Virginia

New Mexico, Oregon, and Virginia have adopted legislation directing transportation and wildlife agencies to identify, prioritize and create a wildlife corridor action plan. To varying degrees, these states have required action to create the corridors after the wildlife action plan is completed.

WHAT WE CAN DO IN IOWA

Legislation

REAP will expire in 2026, unless renewed by the Iowa legislature. So Iowans need to demand that the legislature renew and fully fund REAP. There has also been some discussion in the legislature about changing the funding formula to reduce the allocation of the REAP fund to open spaces. We need to ensure that the open spaces account receives at least the 23 % that has been in the law since the beginning.

The natural resources and outdoor recreation trust fund should be funded with the increase in the sales tax that Iowans voted for. And just as with REAP, the existing funding formula must be maintained in order to provide significant resources to acquire and protect natural areas. In recent years the Iowa legislature has attempted to change

[20]Fl. Dept. Of Env. Protection, Florida Forever, https://floridadep.gov/floridaforever

how the trust fund is funded and to change the funding formula. We must insist that the legislature use the trust fund at it was intended to be used.

Additional legislation would include a directive to state and local conservation agencies to collect ecological data to identify essential wildlife corridors and habitat linkages. Subsequent legislation, based on that data, should then follow the Florida model and designate wildlife corridors. This legislation might look something like the proposed language in Appendix A.

More generally, the legislature could vote to place on the election ballot an amendment to the Iowa Constitution guaranteeing the rights of nature. The amendment would read as follows:

ARTICLE I, BILL OF RIGHTS

> **Protection of the Environment.** Sec. 25. The people have a right to clean air, pure water, and to the preservation and restoration of the natural, scenic, historic and aesthetic values of the environment. Iowa's natural resources are the common property of all the people, including generations yet to come. As trustees of these resources, the State of Iowa, and its political subdivisions, shall conserve, maintain, and restore them for the benefit of all the people. All laws and ordinances adopted by the State of Iowa and its political subdivisions, and the enforcement and execution thereof, shall be consistent with this Section.

If the proposed amendment is passed by two consecutive legislatures, it goes to the people to be voted on in the following general election.

Educating the Public

It has been generations since Iowans have been able to experience our state and its wildlife in a natural setting. Because of that, Iowans perhaps don't feel a significant connection to the natural world, or at least, have no strong vision for restoring Iowa's natural heritage. Moreover, with Iowa's original flora and fauna gone from the landscape, Iowans may not see a way to bring it back or even preserve what we have. So public education is the first task in protecting and restoring Iowa's wildlife.

Sierra Club anticipates arranging meetings around the state to invite farmers, other rural landowners, and all Iowans for presentations on why protecting and restoring Iowa's natural heritage is important and how they can contribute to that effort. Suggestions to landowners could be for conservation easements, participating in conservation programs through the U.S. Department of Agriculture, the State's forest reserve program, and other similar possibilities.

With the assistance of biologists and other experts we can identify areas of the state where natural features can be preserved and where natural areas can be recreated. Right now we can identify wooded areas along rivers and streams, and prairie remnants that can be

expanded if adjoining land is obtained to allow the existing prairie to expand. Some of these efforts can be accomplished fairly quickly. Other aspects of the plan will take many years. But it can be done.

Economic Challenges

Although the path to protecting and restoring Iowa's natural environment is scientifically clear, our current economic system presents challenges to that effort. Of course, the primary economic challenge comes from our current system of industrial agriculture. Over 85% of Iowa's total area is used for agriculture.[21] Providing habitat for wildlife would require a substantial reduction in agriculture's footprint. A discussion of specific strategies to accomplish that is beyond the scope of this report. Changing a system on which much of Iowa depends will involve cooperation and input from many stakeholders. But it can be done. There are currently many ideas about how to change agriculture to ensure that farmers are supported in engaging in more sustainable farming practices.

Urban sprawl also impacts wildlife habitat. Although most of Iowa is rural, the urban areas of Iowa are growing, both in population and area. Those urban areas decrease the availability of wildlife habitat. Revitalizing rural communities would reduce urban sprawl and would not significantly limit the effort to protect and restore natural areas.

We must also consider the impact of highways, of which Iowa has many. Highways create fragmentation of wildlife habitat. That problem can be addressed by constructing wildlife crossings to allow animals to travel across highways along a corridor of natural area, either through overpasses or underpasses.

The Center for Transportation Research and Education at Iowa State University is currently conducting an assessment of wildlife-road conflicts.[22] The goal of this project is to make recommendations for road mitigations at 10 sites identified as hotspots for species of greatest conservation need; create geospatial data layers of current and future predicted species occurrence and road risk to prioritize future sites for mitigation; and create a proposed monitoring plan for evaluating mitigation measures post-implementation. The findings for this assessment should help determine where and how to construct wildlife crossings to best advantage.

Protecting Iowa's Streams, Rivers, and Lakes

Protection of wildlife includes protecting streams, rivers, and lakes. Measures include placing vegetated buffers along streams, revegetating exposed and eroded stream banks, restoring stream channels and oxbows, and reducing soil erosion entering waterbodies. Improving water quality can have a significant impact on the plants and animals living in and along a stream, river, or lake.

[21] https://www.nature.org/en-us/about-us/where-we-work/united-states/iowa/stories-in-iowa/conservation-agriculture0

[22] https://ctre.iastate.edu/research/in-progress/assessment-of-wildlife-road-conflicts-for-protected-species/

First, vegetative buffers provide corridors for terrestrial species. Second, water quality is important for fish and other aquatic species, as well as the macroinvertebrates that provide food for the fish and aquatic species.

Adding black bear and cougar to the furbearer list

Several large mammal species are attempting to repopulate Iowa – the black bear, the cougar, and wolves.

Black bear and cougar currently have no protection from hunting. Once they enter the state, hunters target them. By putting the black bear and cougar on the furbearer list with a closed season, they can be afforded protection so they can expand their populations in the state.

Wolves are already protected from hunting, since they currently are on the furbearer list and have a closed season.

Switching to non-lead fishing tackle and ammunition

One of the most toxic substances to wildlife is from bullets and fishing tackle that are made of lead. Animals that consume small amounts of lead can be fatally poisoned. Eagles pick up pieces of lead in animal carcasses and gut piles that are left on the field. Ducks, geese, swans, and other birds can pick up small pieces of lead from the bottoms of lakes, wetlands, or ponds.

CONCLUSION

Iowa does not have oceans and mountains, but Iowa does have prairies, woods, lakes, and streams. Iowa's natural areas:

- Offer habitat for wild plants and animals
- Afford recreation opportunities for hiking, camping, canoeing, viewing wildlife
- Cleanse the air, retain and absorb water, sequester carbon
- Offer relaxation, stress relief and spiritual needs satisfaction
- Deliver beautiful scenery
- Provide economic benefits to the neighboring communities when visitors spend money for things such as hotels, gas, restaurants
- Present jobs and careers to people who work in parks and recreation, both in the public and private sectors
- Preserve places where children can learn about nature, can play safely and can enjoy being outdoors

Although Iowa has lost significant wild lands, wild rivers and streams, and wildlife, some of the natural lands have been saved in parks and preserves. Creating corridors so wildlife and native habitat can move and expand their territories will ensure their survival.

The benefits of wildlife corridors extend beyond wildlife protection and habitat preservation. People can benefit by having access to green space, by enjoying the beauty found outdoors, and by observing wildlife. Expanding wildlife habitat benefits us all.

Appendix A: Legislation designating wildlife corridors in Iowa

Section 1 – Legislative Findings

The General Assembly finds that:

1. The State of Iowa is home to a rich array of wildlife and landscapes.
2. Biodiversity and habitat connectivity play a vital role in Iowa's economy and in ensuring a sustainable future for current and future generations of Iowans.
3. Habitat loss and fragmentation are major contributors to declines in populations of native fish, marine life, and terrestrial wildlife.
4. Wildlife corridors serve to connect wildlife habitat areas and allow for the movement, migration and dispersal of fish, wildlife and plant species.
5. In addition to other benefits, wildlife corridors provide ecosystem services such as pollination, air and water purification, carbon sequestration and disturbance prevention.
6. Wildlife corridors increase public safety and are highly effective in reducing vehicle/wildlife collisions and the costs associated with those collisions.
7. Formally designating and protecting wildlife corridors is a crucial strategy for bolstering Iowa's ecosystem resiliency and for ensuring the long-term viability of wildlife populations and communities.

Section 2 – Legislative Purpose

The purpose of this act is to create incentives for conservation and sustainable development while sustaining and conserving the green infrastructure that is the foundation of this state's economy and quality of life by doing all of the following:

(a) Maintaining wildlife access to the habitats needed to allow for migration of and genetic exchange amongst regional wildlife populations.
(b) Preventing fragmentation of wildlife habitats.
(c) Protecting the headwaters of major watersheds.
(d) Providing ecological connectivity of the lands needed for flood resiliency and large-scale ecosystem functions, such as water management and prescribed burns essential for land management and restoration.
(e) Preserving and protecting land and waters that are not only vital to wildlife but are critical to this state's groundwater recharge and that serve as watersheds that provide drinking water to most Iowans.
(f) Providing for wildlife crossings for the protection and safety of wildlife and the traveling public.
(g) Helping to sustain this state's working farms, and forests that provide compatible wildlife habitats while sustaining rural prosperity and agricultural production.

Section 3 – Definitions

As used in this section:

(a) "Department" means the Department of Natural Resources.
(b) "Species of concern" means wildlife species identified as being adversely affected by habitat fragmentation.
(c) "Wildlife" means any member of the animal kingdom, including without limitation any mammal, fish, bird (including any migratory, nonmigratory, or endangered bird for which protection is also afforded by treaty or other international agreement), amphibian, reptile, mollusk, crustacean, arthropod or other invertebrate.
(d) "Wildlife corridor" means a network of connected wildlife habitats required for the long-term survival of and genetic exchange amongst regional wildlife populations which serves to prevent fragmentation by providing ecological connectivity of the lands needed to furnish adequate habitats and allow safe movement and dispersal.

Section 4 – Wildlife Corridor Action Plan

1. The Department shall collect, analyze and develop the best available science and data regarding the connectivity of wildlife habitat areas. The Department, in cooperation with the Department of Transportation, shall use the data to develop a plan, to be known as the Wildlife Corridor Action Plan, to preserve long-term habitat connectivity for wildlife. The plan shall provide guidance for all state agencies to develop benchmarks for the designation and protection of wildlife corridors in Iowa.

2. The Wildlife Corridor Action Plan shall contain:

a. Identification of species of concern that are at risk from habitat fragmentation or barriers to species movement.
b. Identify existing crossings on highways that pose a high risk to wildlife migration or to the traveling public.
c. Identify other barriers to wildlife habitat and movement.
d. Identify information about habitat and movement needs of species of concern with attention to large mammals or other species that pose a risk to the traveling public.
e. Identify and gather information of anticipated effects of climate and other stressors on wildlife that will affect movement.
f. Gather information on current habitat quality needed to support wildlife populations.
g. Gather information about increased movement of species that could benefit highly impacted habitat.
h. Create maps that identify location of:

i. Existing populations of great concern
ii. Existing wildlife crossings and movement destination
iii. Areas requiring more monitoring or research

i. Identify economic benefits from preserving wildlife movement patterns, especially reduction of vehicle collisions.

3. The Department shall review and update the Wildlife Corridor Action Plan every five years. Prior to final adoption of the plan or of a plan update, the Department shall:

a. Post the plan or update on the Department website and provide an opportunity for public comment.
b. Deliver a copy of the plan or update to Senate and House committees relating to natural resources.
c. Prior to adoption of a proposed plan update, the Department shall prepare a report on implementation of the update, including but not limited to information concerning changes in the number of high priority wildlife corridors established or planned. The Department shall post the report on the Department website and deliver the report to Senate and House committees relating to natural resources.

Section 5 – Prioritized Wildlife Corridors Projects List

The Department shall prepare a list of wildlife corridor projects assessing the following:

a. Potential reduction of wildlife/vehicle collisions and increased safety to the traveling public.
b. The current population sizes of wildlife species of concern or the value of proposed infrastructure that will improve wildlife corridors.
c. The feasibility and constructability of wildlife corridor infrastructure.
d. Potential costs and benefits of wildlife corridors, including benefits or other effects on local communities.
e. Local community support of the wildlife corridor infrastructure.
f. The value of the project to native local animal species.
g. Surrounding land use and ownership and an evaluation of the need for conservation easements or other real estate instrument necessary to maintain the viability of a proposed wildlife corridor.