CHAPTER EIGHT

PRIORITIES FOR CONSERVATION ACTIONS

General Discussion

Choosing site-specific locations and setting definitive priorities for implementing the conservation actions identified in Chapter 6 are beyond the scope of this *strategic* p*lan*. Few of the wildlife, habitat, and management conservation actions will be implemented, however, without a substantial increase in conservation funding in Iowa. Planning for gathering the information needed to implement the recreation and education actions should be started immediately. Education programs must be developed to inform the public about the economic, social and recreation benefits of implementing the Plan so that the political support needed to acquire the needed funding can be generated.

During the development of the Plan it became obvious that there are important gaps in our knowledge about the distribution and abundance of Iowa's SGCN and their habitats (Chapter 7: *Research, Survey, Inventory and Monitoring Needs).* More information is needed before a comprehensive *implementation plan* can be written.

Establishing priorities for the Wildlife, Habitat, and Management visions is a complex task. The IWAP establishes habitat protection, restoration and enhancement as the foundation for improving the status of SGCN. At least three different approaches need to be taken:

1) Protect and enhance existing habitats that benefit SGCN. This approach gives priority to areas of the state with existing habitat for SGCN or that can be suitable with habitat enhancements. Areas with the greatest existing species diversity should be targeted, land acquired or permanent conservation easements developed, and the appropriate management plans implemented. This approach is the most cost-effective way to benefit the most species in the short term. But SGCN are declining with the amount of existing habitat available today. Enhancing these habitats may slow the decline in local populations, but in the Steering Committee's view will not by itself reverse statewide or regional declines.

The greatest potential to apply this approach is for SGCN that inhabit wooded habitats and some grasslands. These existing habitats are most abundant in the Paleozoic Plateau, the southern and easternmost portions of the Southern Iowa Drift Plan, the Loess Hills, and along the interior river systems

(Map 2-2). The Southern Iowa Drift Plain has extensive acreages of mostly cool season grasslands enrolled in the short term Conservation Reserve Program that could be permanently protected and enhanced to improve habitat for SGCN. Few if any wetlands or wetland-grassland complexes exist in private ownership.

2) Develop new habitats for SGCN in areas where these habitats do not exist. This approach would provide new habitat for SGCN but at a higher cost. Establishing new habitats and restoring populations will extend the range of these species, provide the potential for greater genetic diversity and interaction between populations, and reduce the chances of local population extinctions if travel corridors are also provided. It will also be necessary to meet the recreation goals (50% increase in wildlife-associated recreation in areas near home).

Partnerships between IDNR, USFWS, Iowa County Conservation Boards and private conservation organizations have had many successes restoring wildlife habitats on agricultural land. Agricultural lands too steep or too wet for economical farming have been targeted for acquisition or protection, then wetlands and grasslands have been restored or grazed pastures allowed to revert to forest. Research sponsored by IDNR has shown that birds, including several SGCN, re-colonize these areas quickly. Much is yet to be learned about the ability of less-mobile species to locate these habitats and establish new populations.

Opportunities to restore habitats for SGCN exist statewide. The Des Moines Lobe currently has the greatest acreage of restored wetland-grassland complexes in the state and nearly unlimited opportunities for further conservation activities. Similar opportunities exist on a more restricted basis in the NW Iowa Plain and the Iowan Surface. Riparian wetlands can be restored along most of the interior river systems.

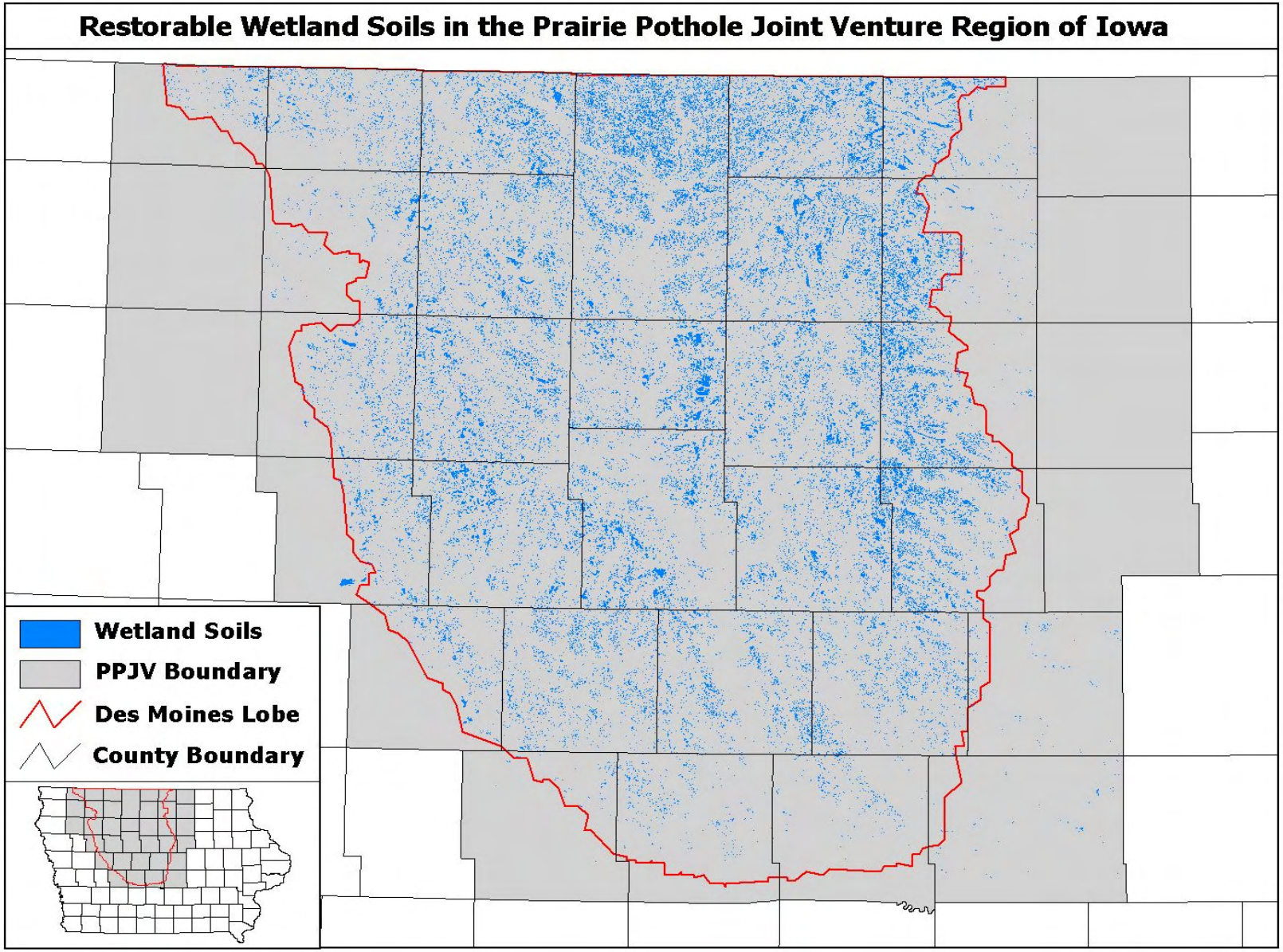
3) Improving the status of aquatic SGCN will require a more broadly-applied conservation effort. Habitat in rivers, streams, lakes, impoundments and wetlands can be improved only if soil erosion, siltation and all the associated problems are reduced (Chapter 5). Targeting areas to protect and restore habitats for terrestrial SGCN will help with this process but will not protect enough land by itself to help all aquatic systems. Vegetative cover must be returned to more of the landscape to hold soil in place. Existing soil-retention programs like terracing, buffer strips and no-till agriculture need to be expanded and new approaches explored to make soil conservation more widely acceptable and financially attractive to the farming community.

Targeting individual watersheds with a comprehensive conservation effort to improve the status of all SGCN and to serve as demonstration areas is the best initial approach to build support for more-widespread efforts. IDNR in cooperation with Iowa's CCBs, USDA's NRCS and FSA, Iowa Soil & Water Conservation Districts, U.S. EPA and local government entities has had success

in restoring selected watershed to provide a variety of wildlife, recreational, social and economic benefits to local communities. The most successful efforts have been in the Southern Iowa Drift Plain, but this approach can be applied selectively in most landforms.

The Steering Committee believes a blend of all three approaches will be necessary to accomplish all the goals of the IWAP. The plight of all SGCN in Iowa is caused by the loss of native vegetation from the landscape that provided wildlife habitat and kept soil and associated products out of the waters. Protecting existing habitats is a good strategy to prevent further losses, but it alone will not return SGCN to their former range or raise populations to a viable level. Habitats for SGCN need to be restored in socially-acceptable places. Widespread conservation practices will be needed to address water quality issues and are best approached on a watershed basis.

Map 8 - 1. Restorable Wetland Soils in the Prairie Pothole Region of Iowa



PRIORITIES FOR VISION ELEMENTS

Wildlife Vision: Iowa will have viable wildlife populations that are compatible with modern landscapes and human social tolerance.

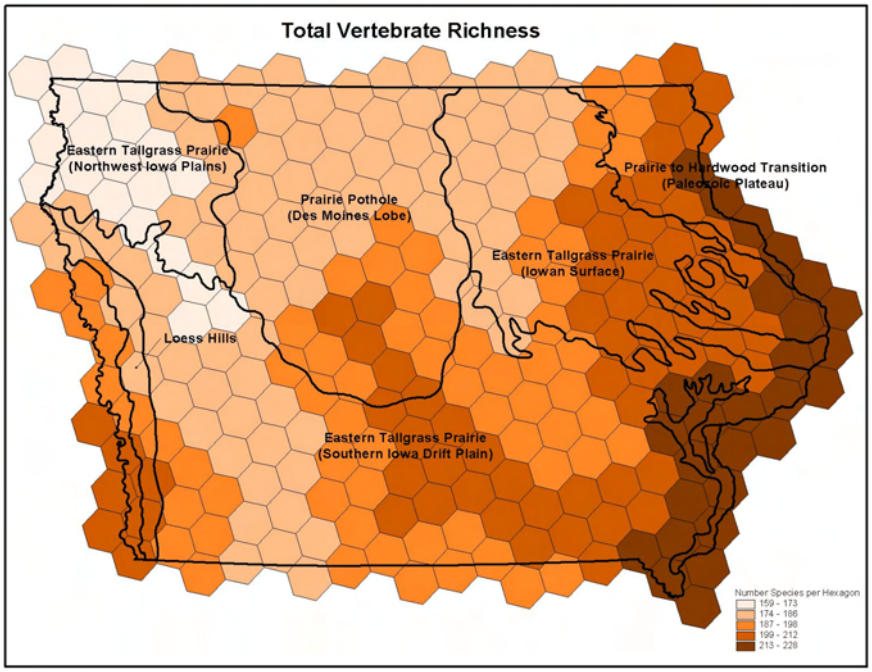
Goal: Common species will remain common.

Conservation activities to address the first goal should be directed to regions of the state having the greatest wildlife species diversity. Iowa GAP has produced maps that delineate regions of the state with the greatest potential *terrestrial vertebrate wildlife diversity* based on habitat distributions (Map 8-2). Hexagons shown on the species richness maps cover 635 square kilometers. Iowa has a total of 265 hexagon units either wholly or partially within the boundaries of the state.

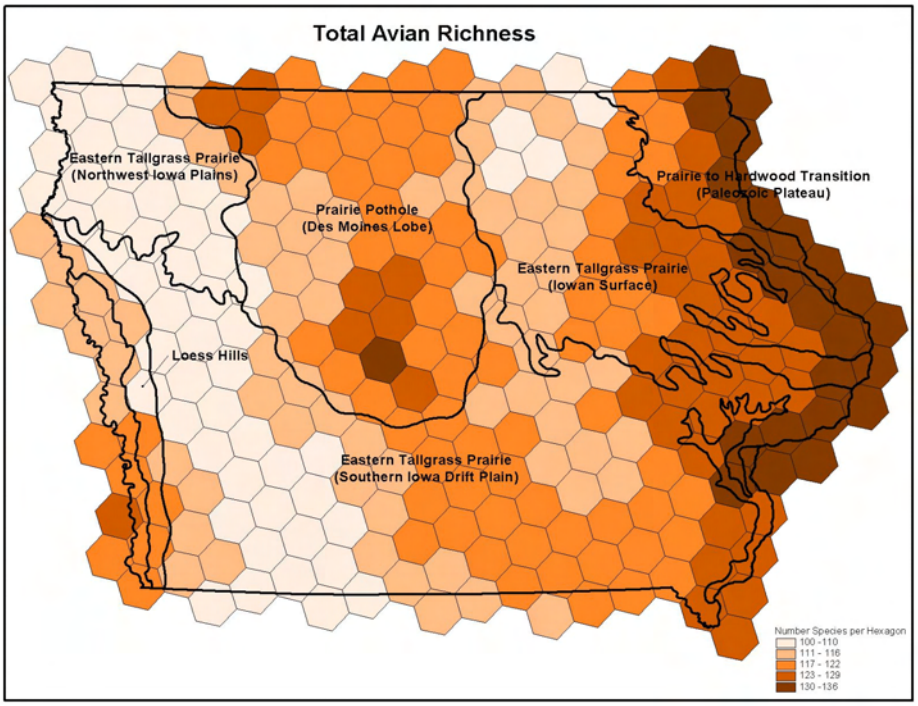
The statewide wildlife diversity map was based on individual habitat models for 288 species that were also included in this Plan. Individual species richness maps are provided for birds (170 modeled species), mammals (53 species), reptiles (44 species) and amphibians (21 species) (Map 8-3 through 8-6). Although these maps do not show distribution predictions for all Iowa terrestrial vertebrates included in the Plan, they can be used as indicators of regions of species richness for SGCN. Some SGCN may have specific habitat requirements or limited distributions that are not found within *species rich* portions of the state. The special needs of these animals must to be considered when specific management plans are prepared.

The species richness maps reflect the general distribution of existing wildlife habitats. The eastern and southeastern regions of the state and the southern Loess Hills have the greatest total species diversity (Map 8-2) and the greatest diversity of birds (Map 8-3), reptiles (Map 8-5) and amphibians (Map 8-6). This may because wooded habitats in these regions serve as major migration corridors for birds and because they contain a substantial portion of the state's remaining mixed woodland-grassland-riparian habitats. Diversity tends to decline following the interior river valleys northwest into the heavily agricultural regions of the state (formerly prairie or prairie potholes).

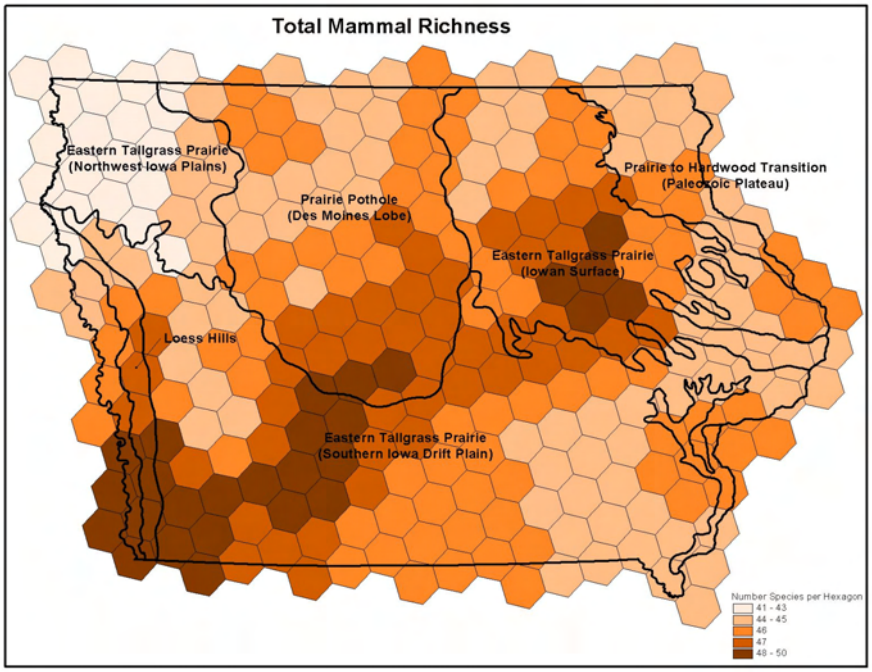
Map 8-2. All Terrestrial Vertebrate Species Richness (from Iowa GAP)



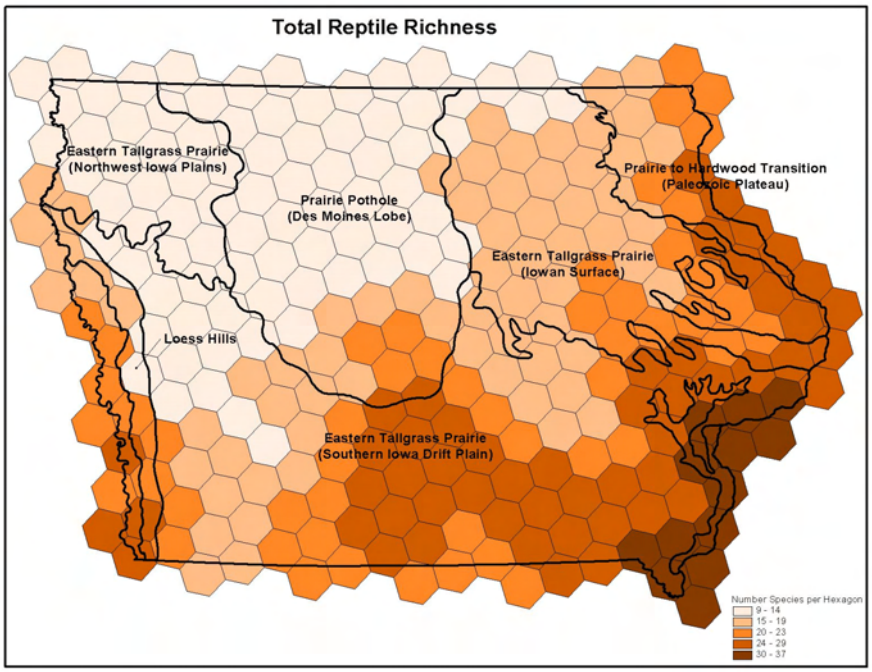
Map 8-3. Bird Species Richness (from Iowa GAP)



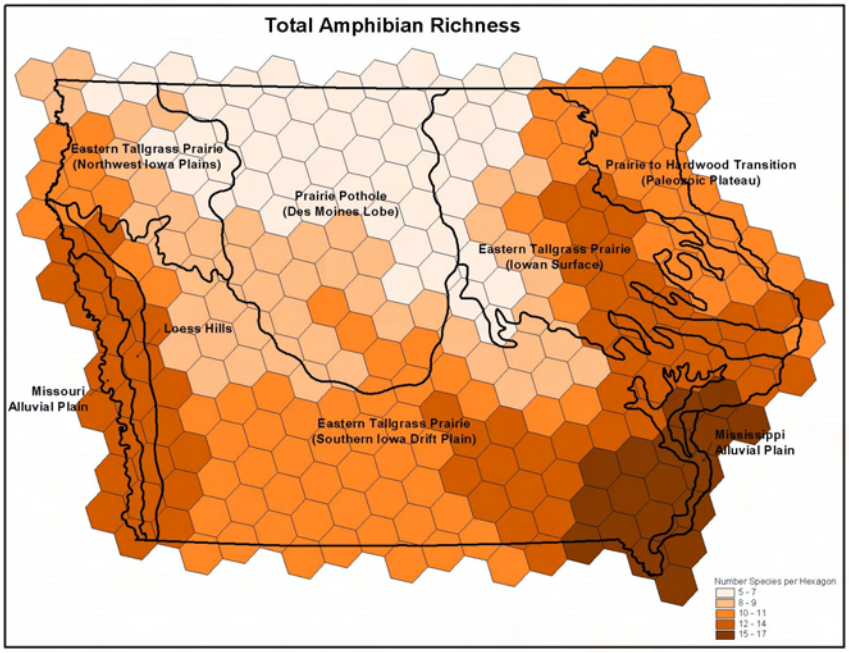
Map 8-4. Mammal Species Richness (from Iowa GAP)



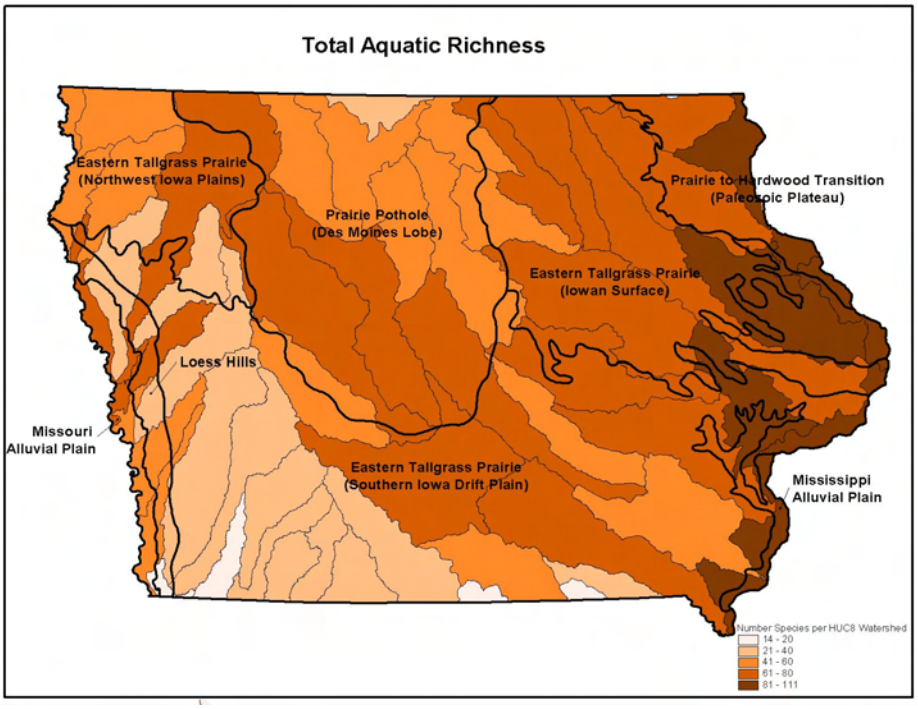
Map 8-5. Reptile Species Richness (from Iowa GAP)



Map 8-6. Amphibian Species Richness (from Iowa GAP)



Map 8-7. Aquatic Species Richness (from Iowa Aquatic GAP)



The exception to this pattern is the species richness of mammals (Map 8-4). Iowa GAP authors speculate that the concentration of mammal diversity in southwestern Iowa may be due to the influence of western species. Before fire suppression became widespread in the late 1800's, the Loess Hills were extensive grasslands (rather than today's forest) and probably represented the eastern extension of the range of several western species.

Iowa Aquatic GAP is being finished as this Plan is completed and can be used in future revisions to plot aquatic vertebrate species diversity. A preliminary map of 157 modeled species of aquatic vertebrates was provided to the Steering Committee for use in this version of the Plan (Map 8-7).

While these maps delineate general areas of species richness, much must be learned about the actual distributions and abundance of SGCN within these regions. Inventory and monitoring actions must take place before the needs of individual SGCN can be addressed (Chapter 7).

Goal: Populations of SGCN will increase to viable levels

To achieve this goal the second approach to habitat protection must be taken - creating new habitats for SGCN through land acquisition and management and by taking specific conservation actions designed to improve the status of SGCN that need more intensive assistance. This will take a combination of habitat protection, habitat management and scientific inventory and monitoring.

The habitat acquisition issues are discussed under the habitat vision goals below. The inventory and monitoring issues are discussed in Chapter 7. Once the distribution and abundance of SGCN are more fully understood, conservation actions can be tailored to their recovery. Specific habitat management prescriptions can be defined to assist key species, populations may need translocation to newly created habitats or to isolated tracts of existing habitat, connections may need to be developed between habitat blocks, etc.

Goal: The abundance and distribution of wildlife will be balanced with its impact on the economic livelihood and social tolerance of Iowans.

Past experience has shown that human social tolerance to wildlife must be cultivated and considered when implementing new conservation actions in a landscape dominated by private land. Expanding populations of white-tailed deer and giant Canada geese have created problems for citizens in some circumstances. Managing water levels on public wetlands during periods of

heavy rainfall have caused temporary but unacceptable flooding on adjacent private lands. Weed encroachment from public grasslands to private croplands also stirs controversy. Real or perceived, these problems need to be considered when implementing the conservation actions outlined in this Plan and steps taken to minimize impacts on neighboring landowners.

Habitat Vision: Iowa will have healthy ecosystems that incorporate diverse, native habitats capable of sustaining viable wildlife populations.

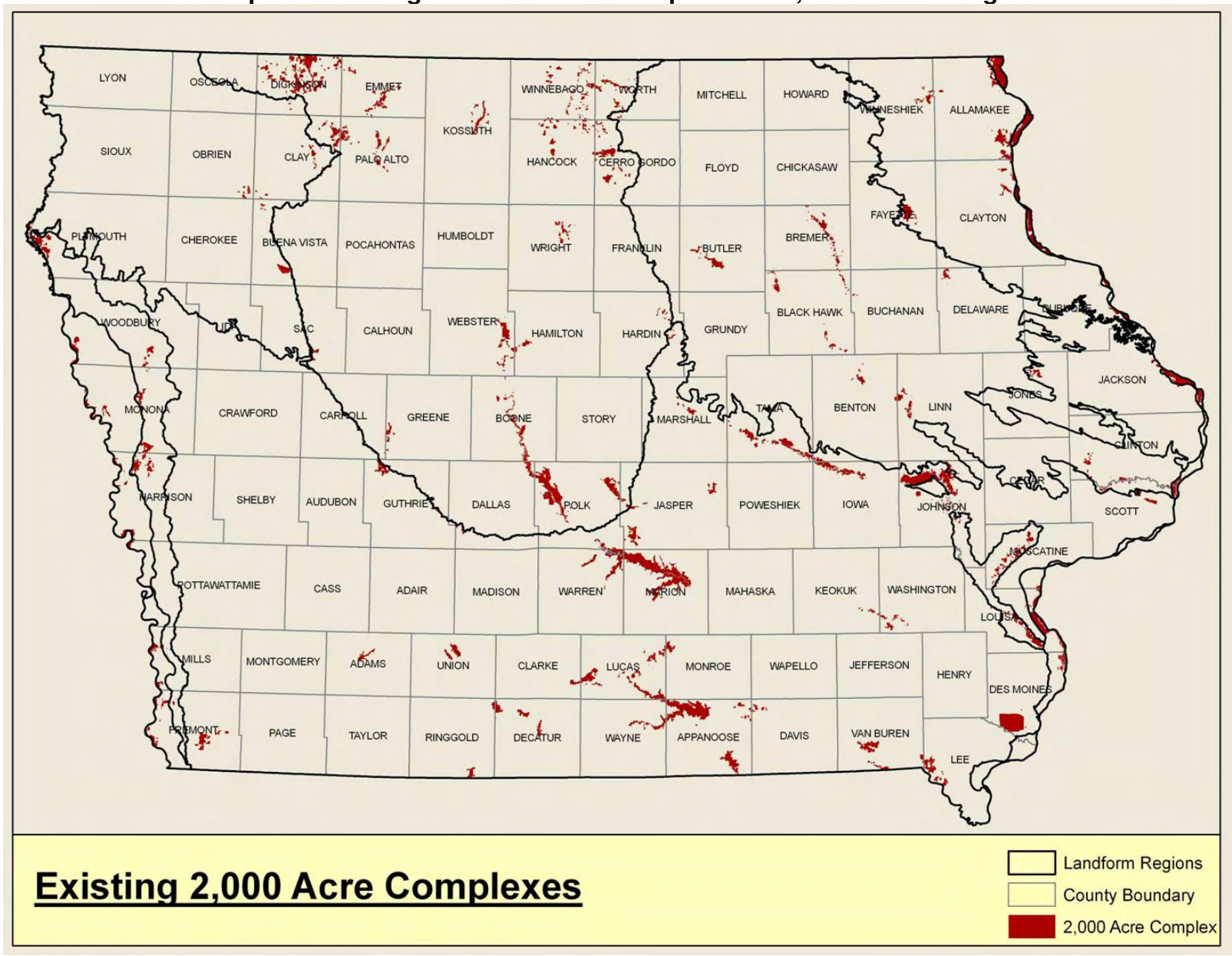
Goal: By 2030, the amount of permanently protected wildlife habitat in Iowa will be doubled.

Until recently land acquisition efforts in Iowa have been directed at purchasing the highest quality habitats available at the time funds were available. Too frequently this resulted in scattered small tracts of land that provided limited opportunity for biodiversity management, had little connectivity, and were difficult to manage logistically. Habitat blocks were too small to manage for more than one habitat class (e.g. grasslands or forest) on the area. If multi-species management was attempted the resulting habitat patches were too small to attract area-sensitive species. The recently developed Neal Smith National Wildlife Refuge is one notable example of a large-scale restoration (by Iowa standards) that is attempting to establish a functional tallgrass prairie ecosystem.

Since the 1980's habitat acquisitions have focused on the eventual development of major conservation areas of 3,000 - 5,000 acres in more or less continuous blocks. Experience has shown that areas of this size allow management for biodiversity between habitat classes and provide the ability to manage for multiple successional stages within one habitat class. This approach benefits multiple SGCN that need different successional stage on the same site or single species whose habitat needs change throughout the year. It also benefits game species that typically are more abundant in early successional stages as well as nongame. Partners-in-Flight has adopted a similar approach in designing Bird Conservation Areas.

Expanding existing large core conservation areas to the desired size should be given priority over work in smaller areas. Map 8-8 shows the location of existing habitat complexes of 2,000 acres or larger that are in public ownership that could reach the 3,000-acre threshold with comparative ease. These are permanently protected conservation lands owned by IDNR, county conservation boards, the federal government (USFWS - NWRs and WPAs, USACOE, NPS), the Nature Conservancy, Iowa Natural Heritage Foundation or protected under long-term federal WRP easements. Smaller scale maps of these public lands in each landform are shown in Appendix 19.

Map 8-8. Existing Protected Land Complexes of 2,000 acres or larger



Land (or funding) is seldom available for acquisition in blocks of this size so initial purchases in a new geographical area should be screened for expansion potential. Conservationists working in target areas to acquire large tracts must exhibit patience. State government in Iowa has traditionally relied on willing sellers to acquire or protect land. Projects of this size can take a decade or longer to complete.

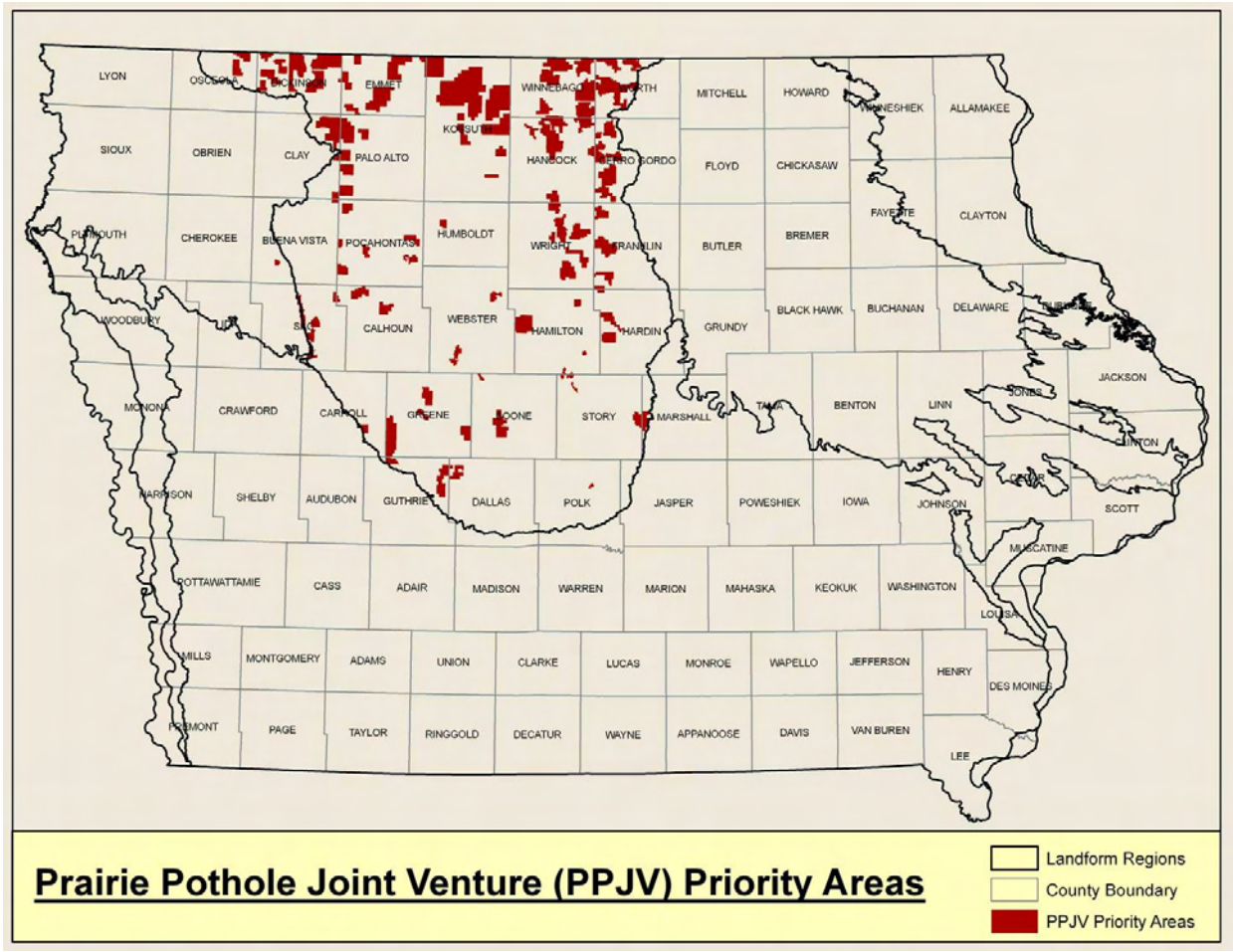
Map 8-8 also shows extensive areas of the state that do not have core habitat blocks to meet the habitat or recreation goals of this Plan. The western third of the Southern Iowa Drift Plain, the southern Loess Hills, the NW Iowa Plain and the southwestern portion of the Des Moines Lobe are notably devoid of these areas. Smaller geographic areas without permanently protected conservation lands can be found in all the other landforms as well.

Not all habitat protection efforts can be vested in acquiring large core blocks of habitat. Once the distribution of more SGCN is better understood, key smaller tracts of habitat may be identified that are required for the protection of exceptionally imperiled SGCN. Connectivity needs to be established between large core areas that are isolated from other tracts. A more dispersed approach may be needed to protect target watersheds and aquatic SGCN than concentrating efforts in one location. These decisions need to be made on a case-by-case basis.

Coordination with other wildlife and biodiversity conservation plans prepared by natural resource agencies and private conservation organizations should be a high priority. Prioritization criteria used by these organizations differ and may include different classes of species or different regional boundaries. Their cumulative site priorities are important in identifying significant locations for future habitat protection actions through partnerships (Maps 8-9 through 8-30).

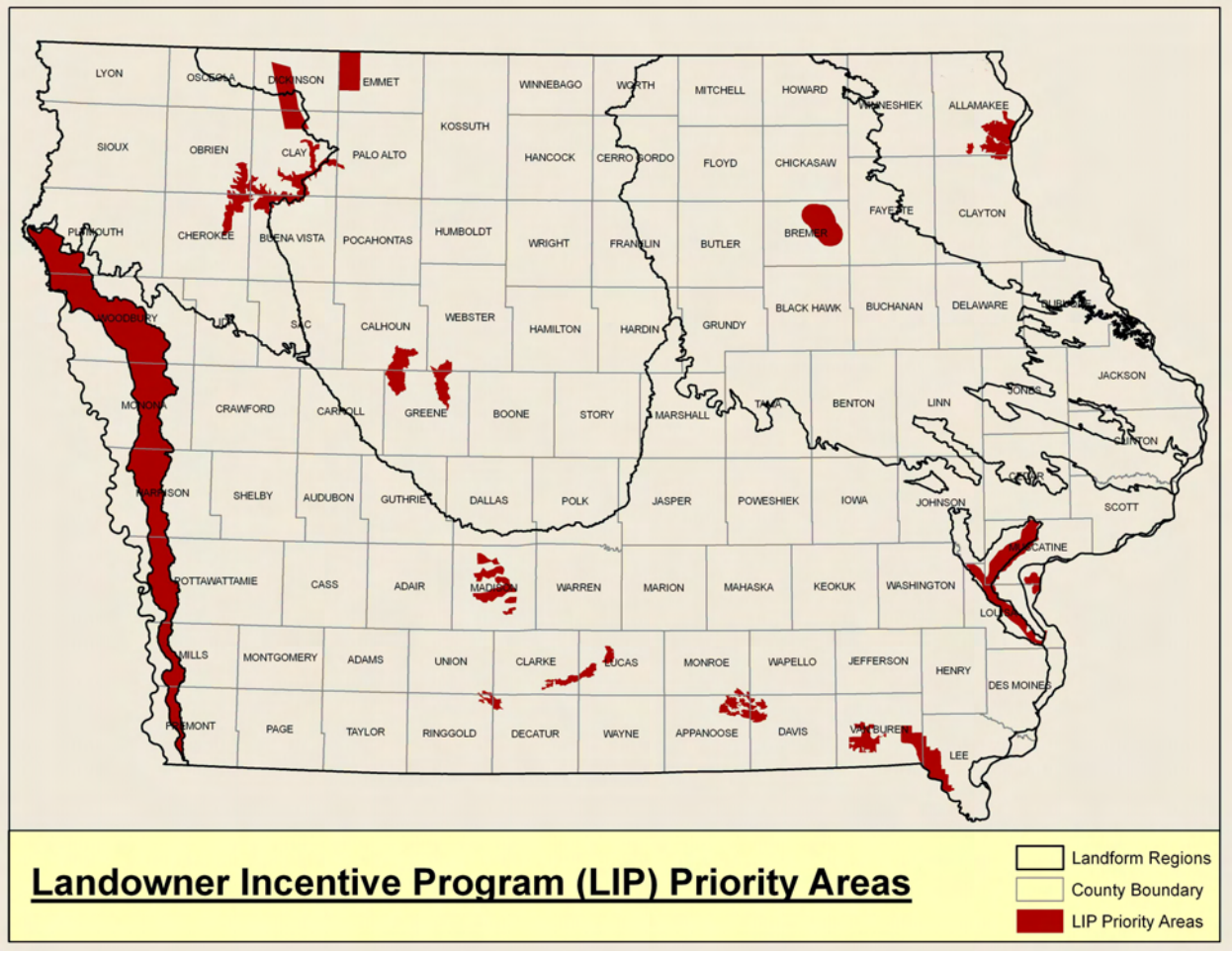
The **Prairie Pothole Joint Venture** of the North American Waterfowl Management Plan is an effort by government agencies and conservation organizations to protect and restore waterfowl habitat within the Prairie Pothole Region of the United States and Canada. Existing and restorable wetland complexes within the Prairie Pothole Region of Iowa have been identified and are shown on Map 8-9. Although initially targeted at waterfowl species, emphasis within the Prairie Pothole joint Venture has been extended to nongame species as well. Research sponsored by IDNR and Iowa State University has demonstrated that a variety of birds and other SGCN have successfully re-colonized these restored habitats.

Map 8-9. Prairie Pothole Joint Venture Priority Wetland Complexes



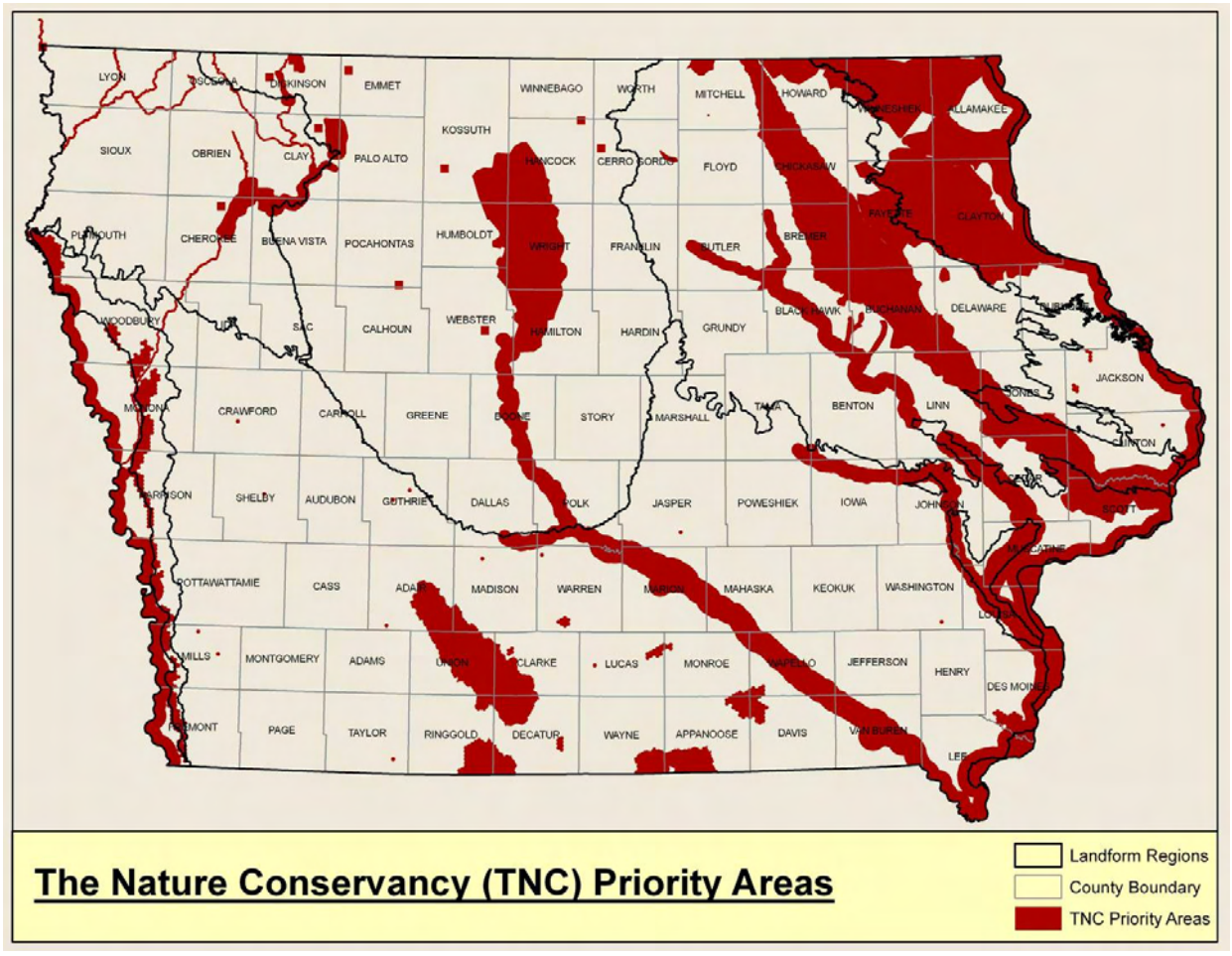
The **Landowner Incentive Program** (LIP) was designed to protect and restore habitat for state and federally listed endangered and threatened plant and animal species on private lands (Map 8-10). The program provided financial incentives and educational materials to private landowners willing to participate in the program. Scientists knowledgeable about Iowa's Threatened and Endangered species established site priorities. The identified sites include known and potential habitats for endangered and threatened species. Although LIP was discontinued and program work was completed in Iowa in 2010, this map layer is considered important in determining current and future Wildlife Action Plan priorities, because habitat work in these areas would benefit listed species and those SGCN that utilize similar habitats.

Map 8-10. Landowner Incentive Program Site Priorities



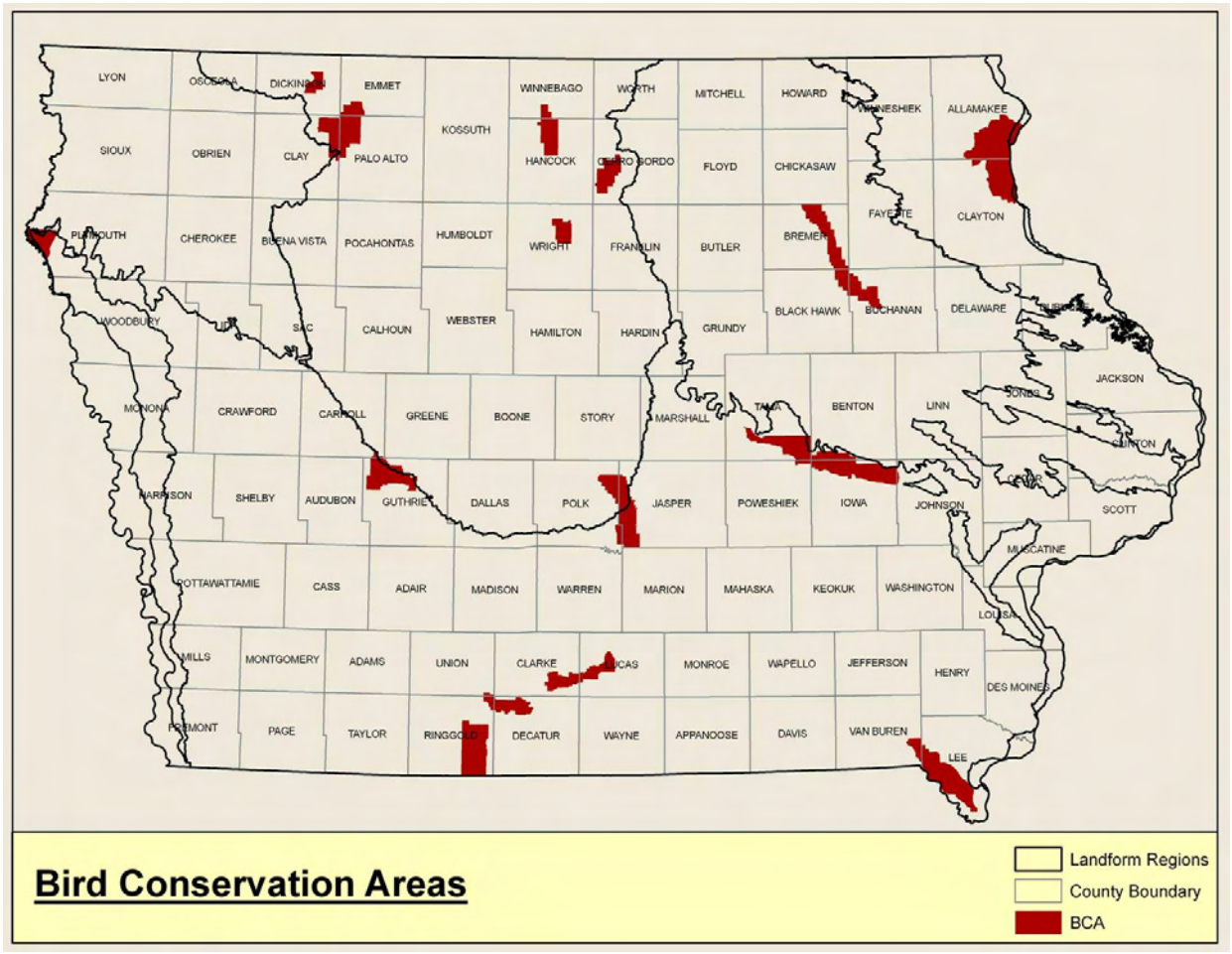
The Nature Conservancy's (TNC) Priority Conservation Areas designate significant natural areas targeted by TNC for conducting biodiversity conservation (Map 8-11). These sites were identified through analyses of plant, animal, and natural community data, along with other information. They also show where this important conservation organization may be willing to partner in conservation actions that may be identified in this Plan. The Nature Conservancy prioritizes where they work based on biodiversity by developing ecoregional plans which cross state boundaries. Iowa is made up of a portion of three ecoregions - the central tallgrass prairie, the praire forest border, and the northern tallgrass prairie. The 6 TNC priority areas are the landscapes that represent the highest amount of biodiversity in Iowa in that particular ecoregion. TNC has also identified portfolio sites that don't necessarily fall within a project area, but that are critical for protection due to their biodiversity.

Map 8-11. The Nature Conservancy's Priority Conservation Areas



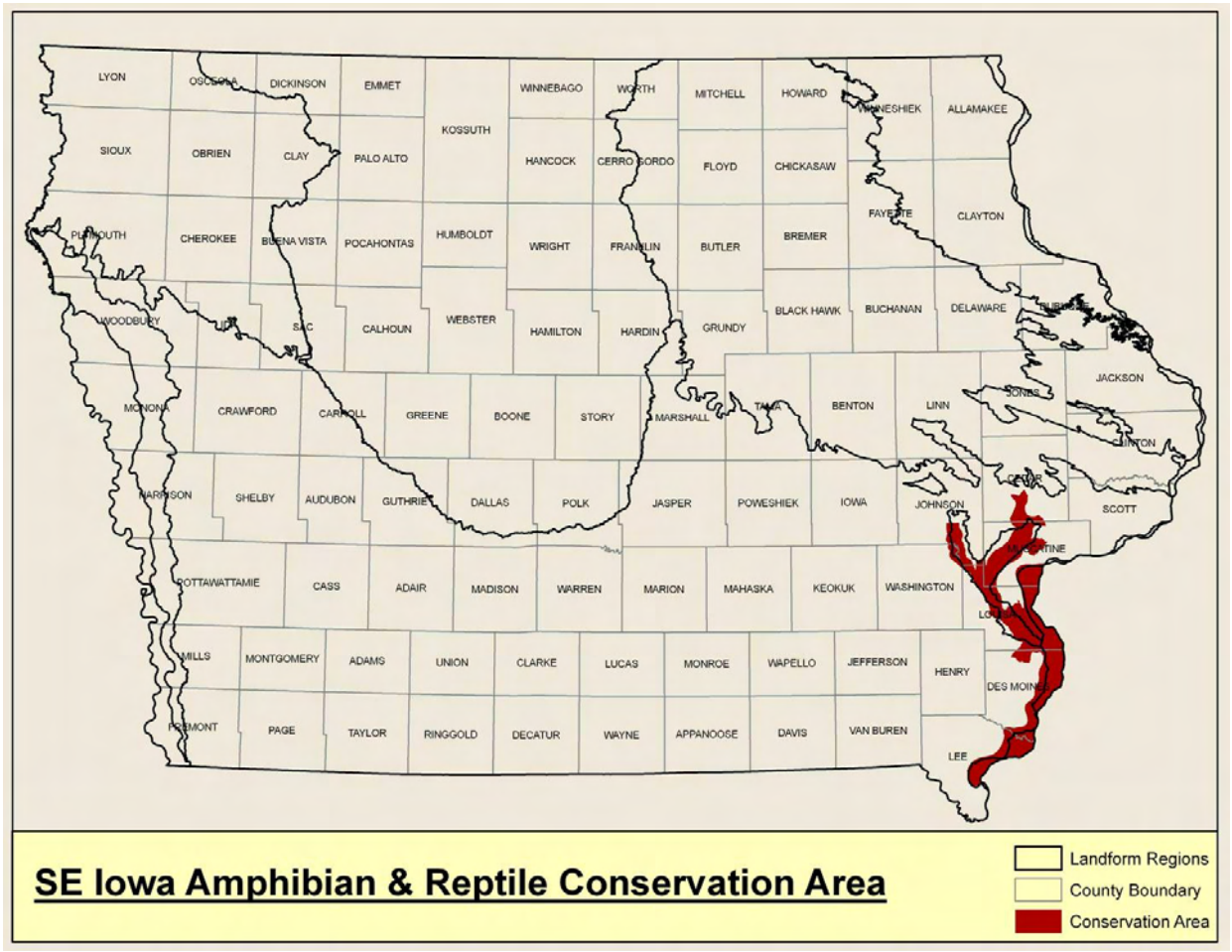
Bird Conservation Areas (Map 8-12) have been designated by IDNR as significant habitat complexes for birds generally following guidelines established by Partners-in-Flight. They are areas of 10,000 acres or more made up of a core area of permanently protected natural habitat surrounded by a matrix of public and private natural lands. This concept is backed by research that suggests viable bird populations require conservation efforts at a landscape-oriented level. While targeted specifically at birds, large tracts of natural habitat such as these have been identified throughout this Plan as providing significant habitat protection and restoration potential for SGCN.

Map 8-12. Existing Bird Conservation Areas



Iowa dedicated the nation's first-ever Amphibian and Reptile Conservation Area in 2007. **The Southeast Iowa Amphibian and Reptile Conservation Area** (ARCA) includes public and private lands in Iowa's Mississippi Alluvial Plain. Modeled on the Bird Conservation Area concept (see Map 8-12), it spans approximately 470,000 acres. The area's diverse features—including riverbeds, grasslands, rock outcrops, streams, ponds and ephemeral wetlands—provide habitat for many species.

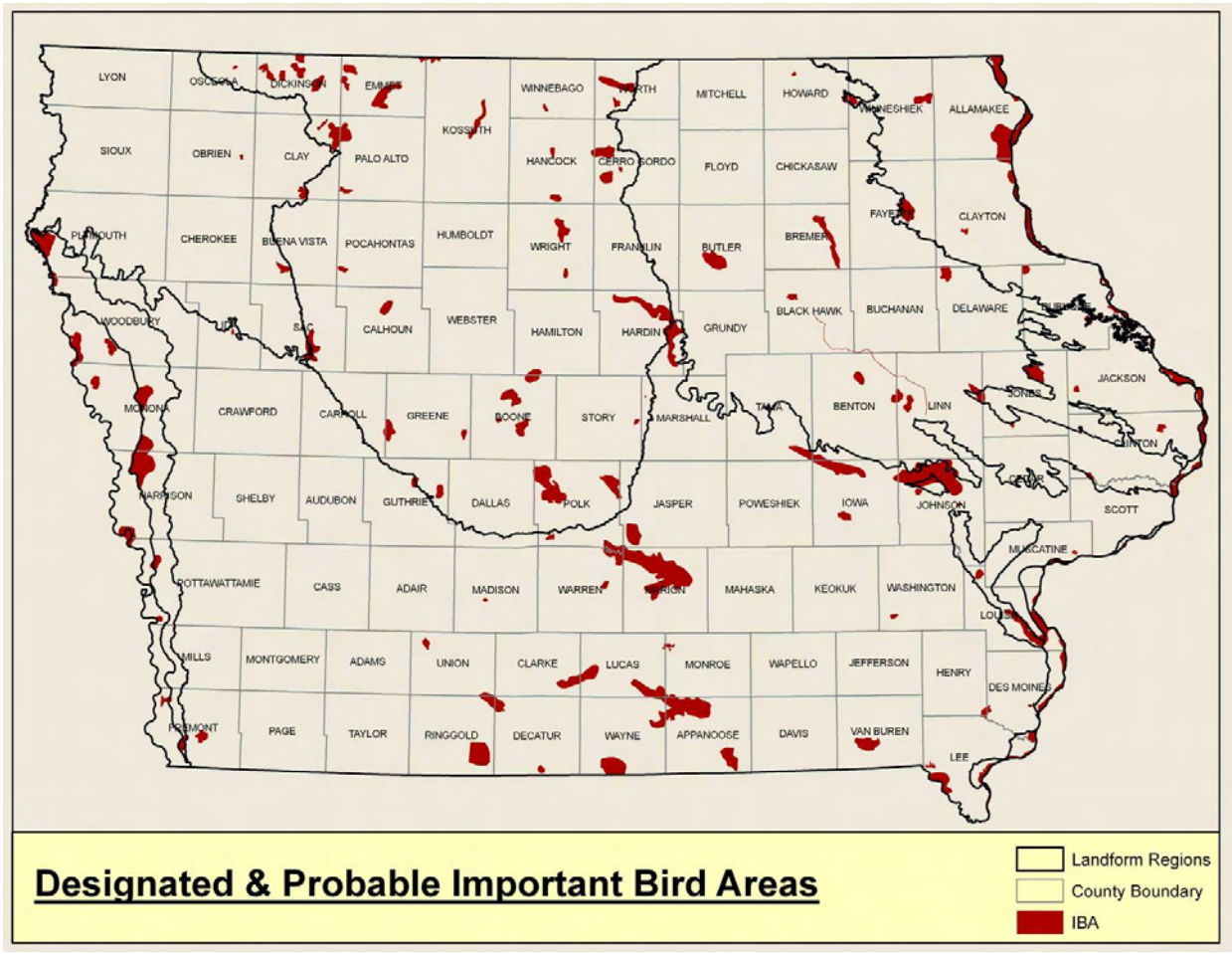
Map 8-13. Amphibian and Reptile Conservation Area



Iowa Audubon's Important Bird Areas (IBA) Program is a citizen-led, science-based and data-driven bird conservation initiative. Phase I of this long-term effort is the identification, recognition and prioritization of habitats that support the most seriously declining species of birds. A State IBA Technical Committee evaluated all data received on a habitat-by-habitat basis, and then voted to confer IBA recognition when criteria were met. Habitats that meet criteria are considered to be the most essential habitats. A total of 70 IBA's in 55 counties have been officially recognized in Iowa (Map 8-14) and 130 additional habitats have been nominated

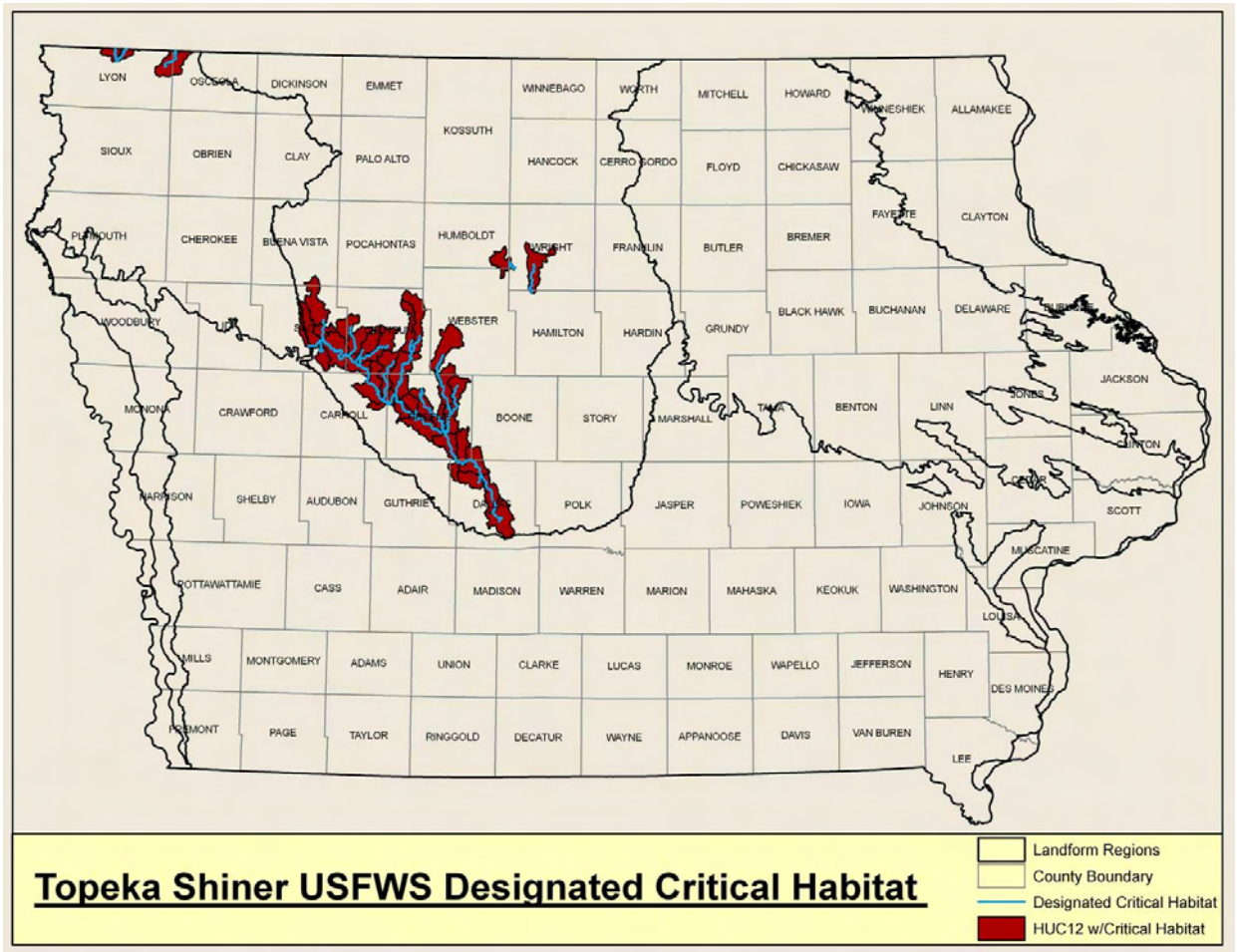
Phase 2 of the IBA Program is long-term monitoring of bird populations and habitat conditions, and organizing education programs at designated IBA sites where appropriate. Phase 3 is working with landowners and land managers to develop and implement long-term conservation plans to protect, restore, enhance and manage IBAs according to their environmental threats and conservation needs.

Map 8-14. Iowa Audubon's Important Bird Areas



The **Topeka Shiner**, *Notropis topeka*, is a federally listed threatened species of minnow. Map 8-15 shows known and potential critical habitat for Topeka Shiners in Iowa. This habitat is essential for the conservation of the Topeka Shiner and may require special management and protection. All indicated areas designated as critical habitat are occupied by the species or are short segments that provide critical links between habitats. An area is designated as critical habitat through the federal regulatory process. The designation does not set up a preserve or refuge and has no specific regulatory impact on landowners' actions on lands that do not involve federal agency funds, authorization, or permits. Although this map designates critical habitat for only a single species, it can be used to help set priorities for conservation actions in this part of the state.

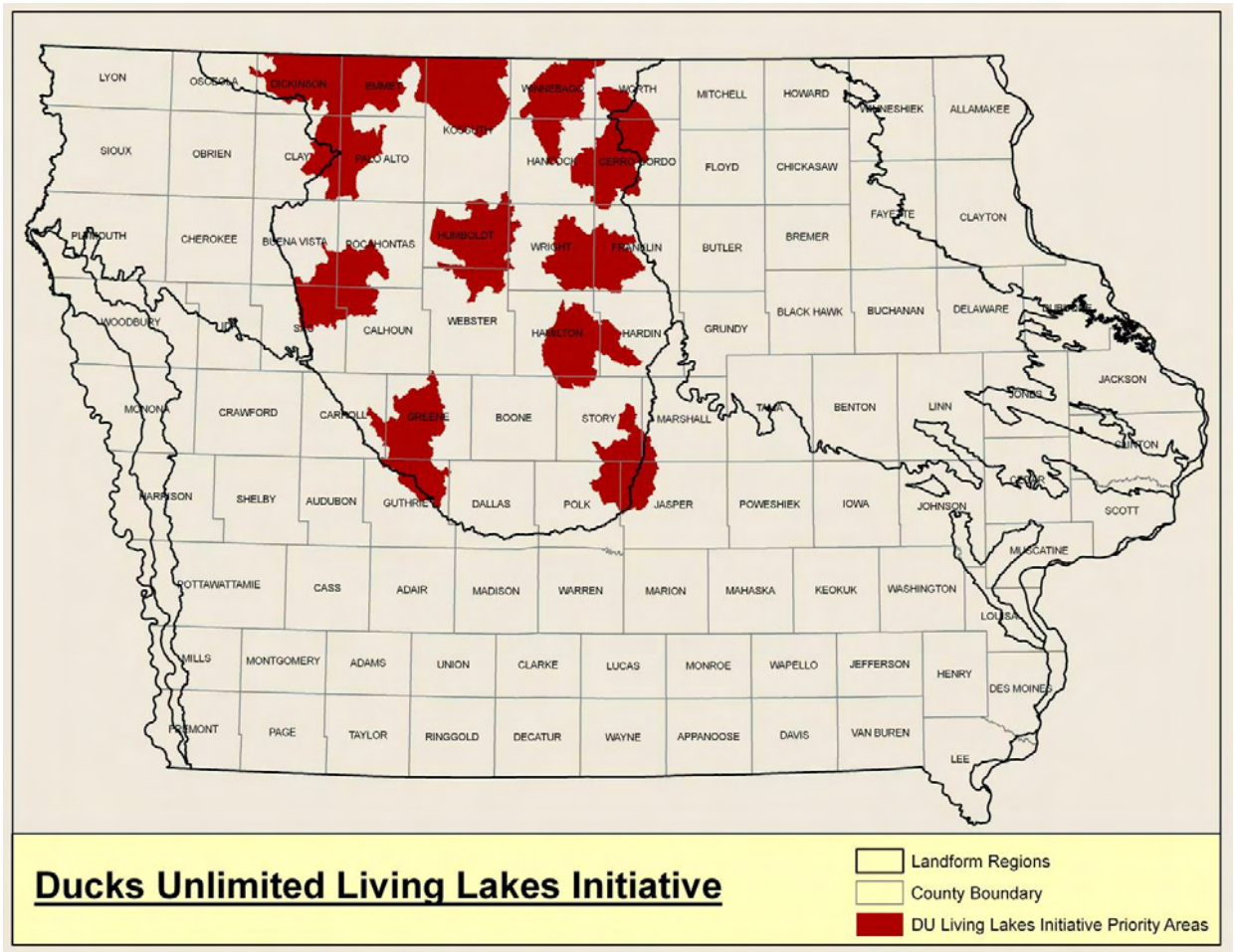
Map 8-15. Topeka Shiner Critical Habitat



Ducks Unlimited Living Lakes Initiative Emphasis Areas is an effort to provide high-quality feeding and resting areas for migratory birds as they cross the intensively farmed Des Moines lobe. Research suggests migrating waterfowl are losing weight as they cross the Upper Midwest because of the lack of adequate food and they arrive on their Canadian breeding grounds in poor condition for nesting. This proposal would provide 3,000 - 5,000 acre wetland complexes at less than 75-mile intervals so that birds can move at a more leisurely pace and maintain their body condition.

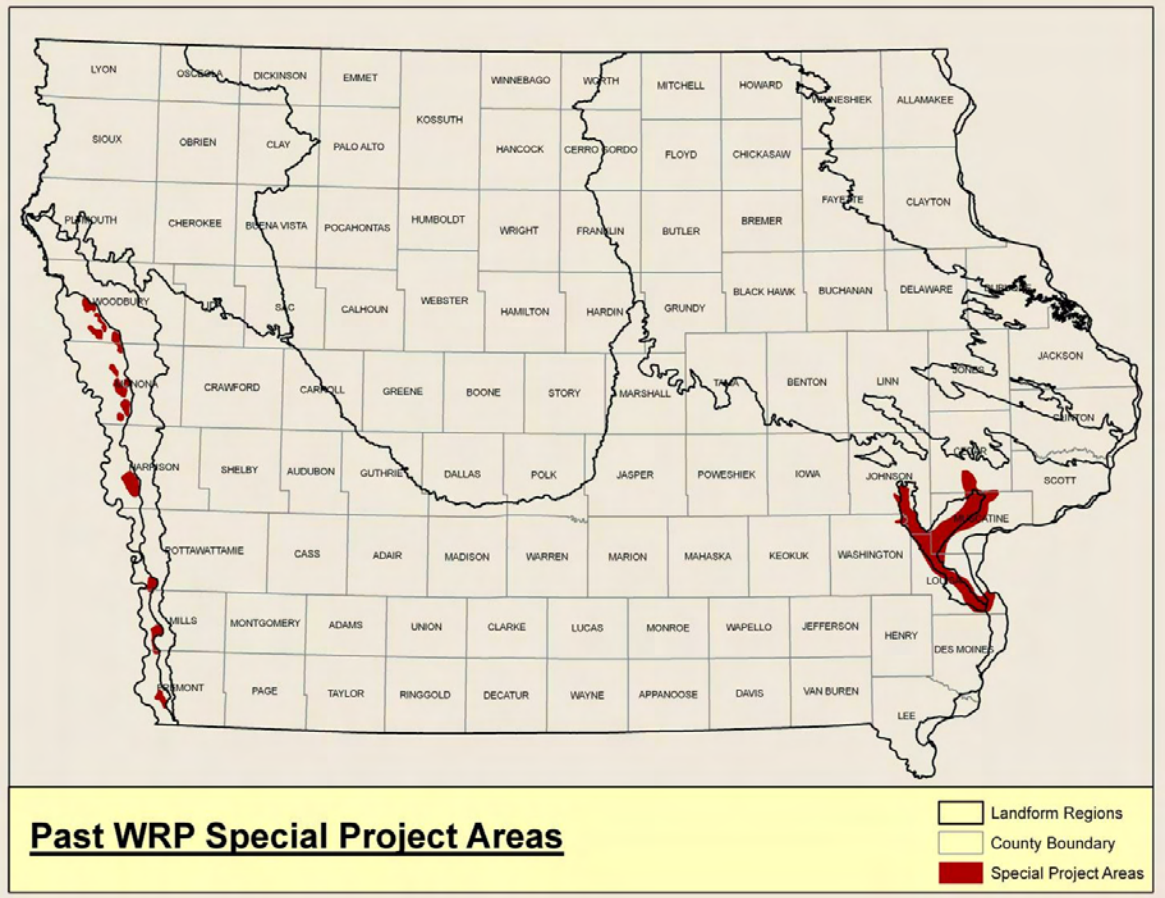
The Emphasis Areas were defined in order to concentrate delivery into smaller geographic scopes and make much wiser conservation investments, rather than a traditional "shotgun approach" to habitat conservation. Iowa's shallow lakes monitoring efforts are a vital component of assessing before & after conditions to illustrate that these degraded systems can be "brought back to life".

Map 8-16. Ducks Unlimited Living Lakes Initiative Emphasis Areas



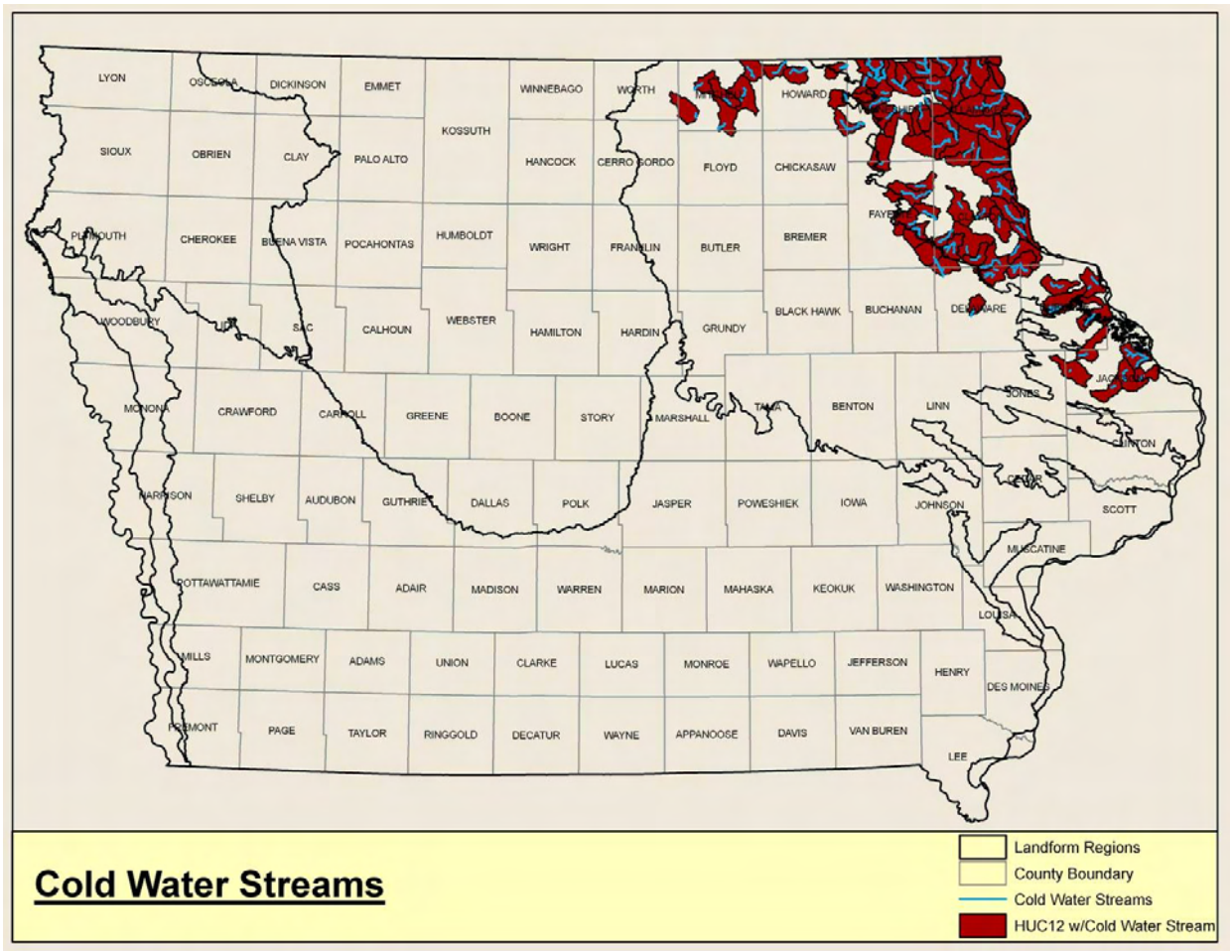
Major flooding that covered Iowa and the Midwest in 1993 led to the passage of the Federal **Wetland Reserve** Act designed to get development and agriculture out of areas prone to flood and return them to their original wetland condition. IDNR, in cooperation with NRCS and NGO partners have been able to acquire permanent easements on 100,000 acres in Iowa. Map 8-17 identifies areas IDNR has worked with landowners to enroll lands in WRP and acquire their residual value so that these lands could be managed for wildlife.

Map 8-17. Past Wetland Reserve Program Special Project Areas



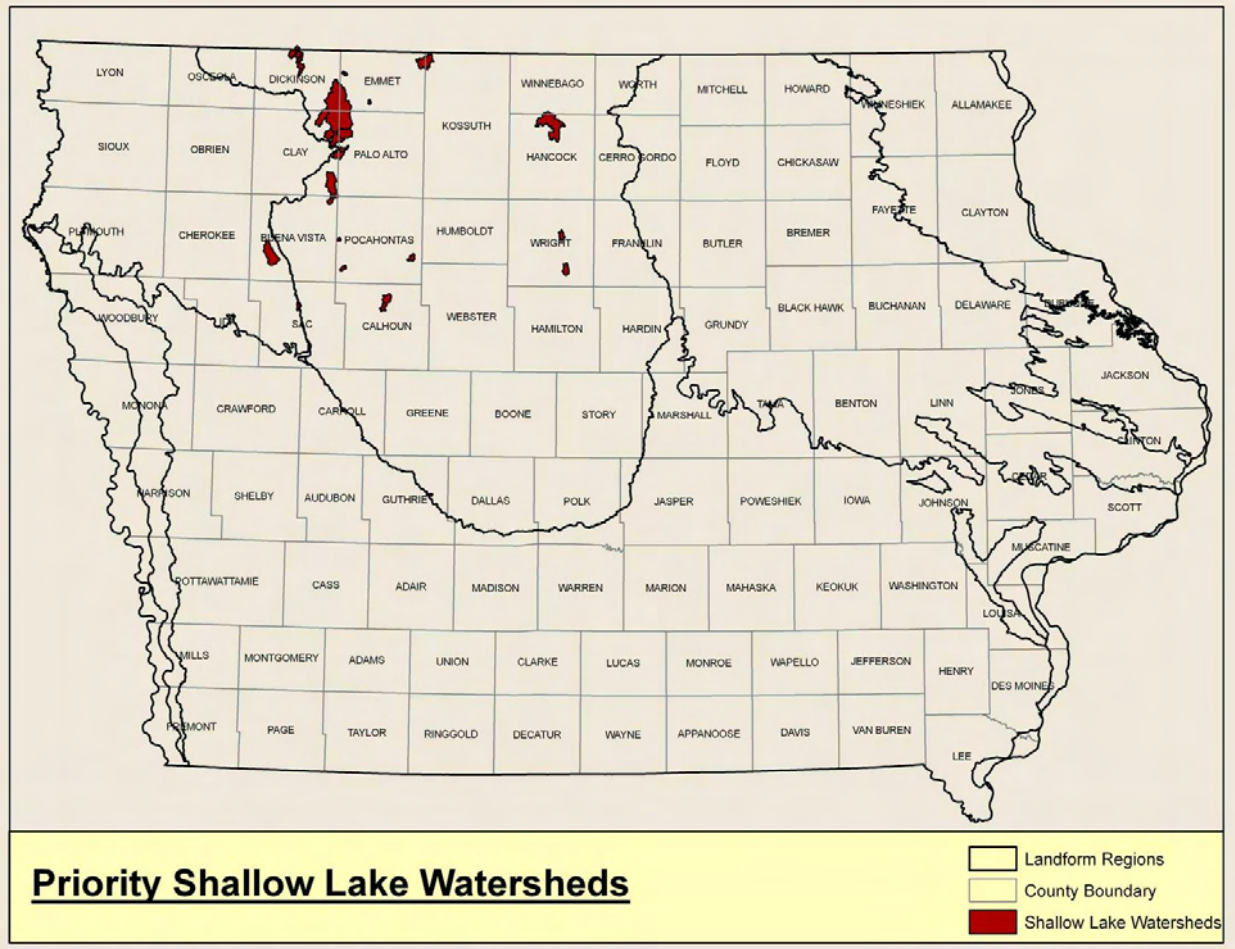
The Drifltess Area covers over 16,000 square miles across Northeast Iowa, Southwest Wisconsin, Southeast Minnesota and Northwest Illinois. The area escaped coverage by glacial drifts which covered much of the upper Midwest during the latter part of the Pleistocene epoch. Due to its unique karst geology characterized by sinkholes, caves and springs, the Driftless Area supports a high concentration of spring-fed, regionally significant **coldwater streams**. Coldwater streams are flowing waters with maximum summer water temperatures that are typically below 22 degrees Celsius.

Map 8-18. Watersheds with Coldwater Streams



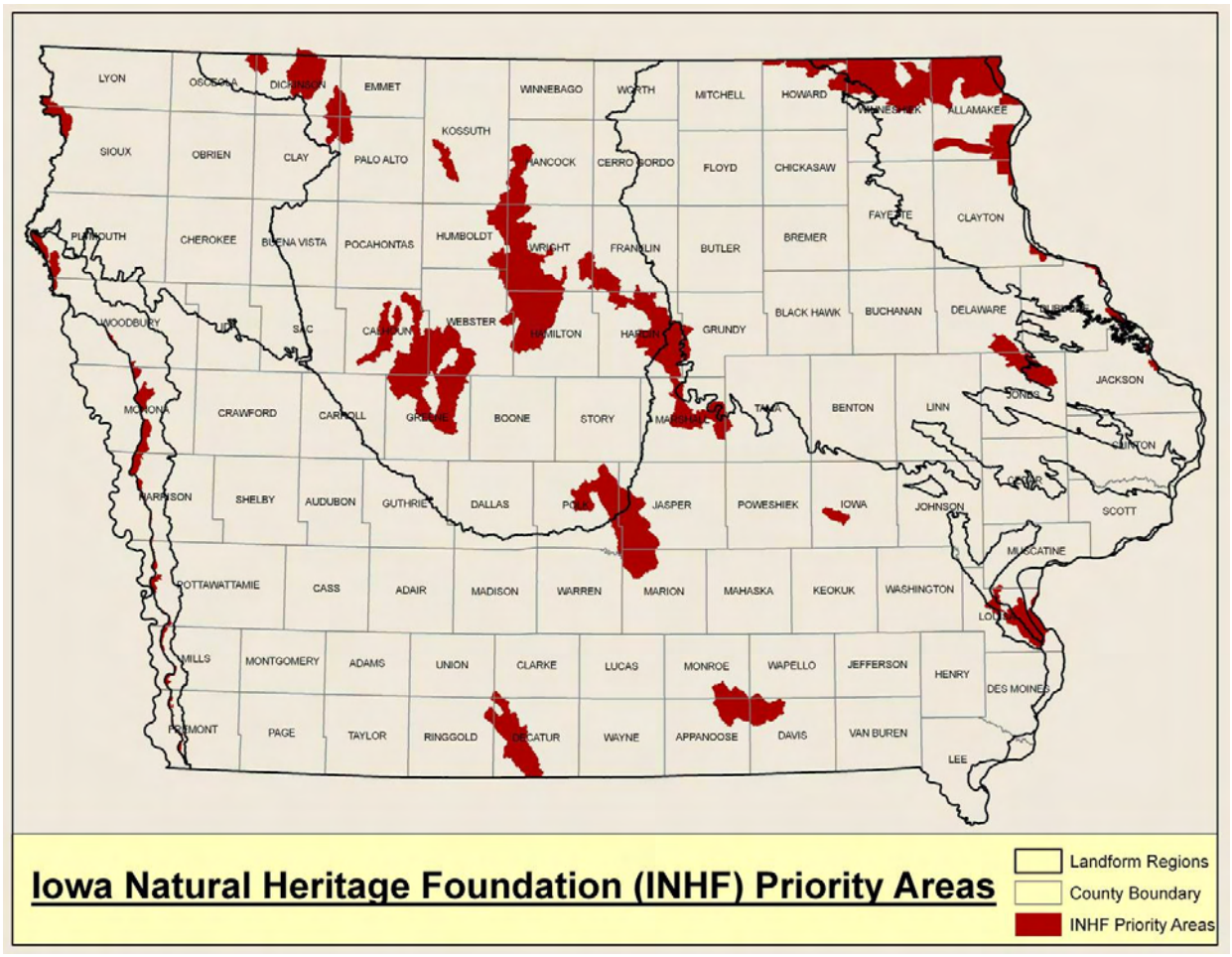
Ducks Unlimited and the Iowa DNR's Wildlife and Fisheries Bureaus established a prioritized list of **shallow lakes** to be renovated over the next ten years. Natural Lakes in Northwest Iowa are mainly characterized as shallow, windswept systems that exhibit poor water quality. Significant watershed changes and the introduction of common carp in the late 1800's have forever made management of these water bodies a challenge. The current focus of the Lake Restoration Program is on shallow lakes that support both fishing and wildlife benefits. In addition, there is an emphasis on shallow systems above important natural lakes.

Map 8-19. Priority Shallow Lake Watersheds



The **Iowa Natural Heritage Foundation** (INHF) is an accredited land trust. INHF is a member-supported organization and its priorities include protecting priority lands, connecting natural landscapes and natural corridors, restoring natural areas, and engaging Iowans with Iowa's natural heritage.

Map 8-20. Iowa Natural Heritage Foundation Priorities

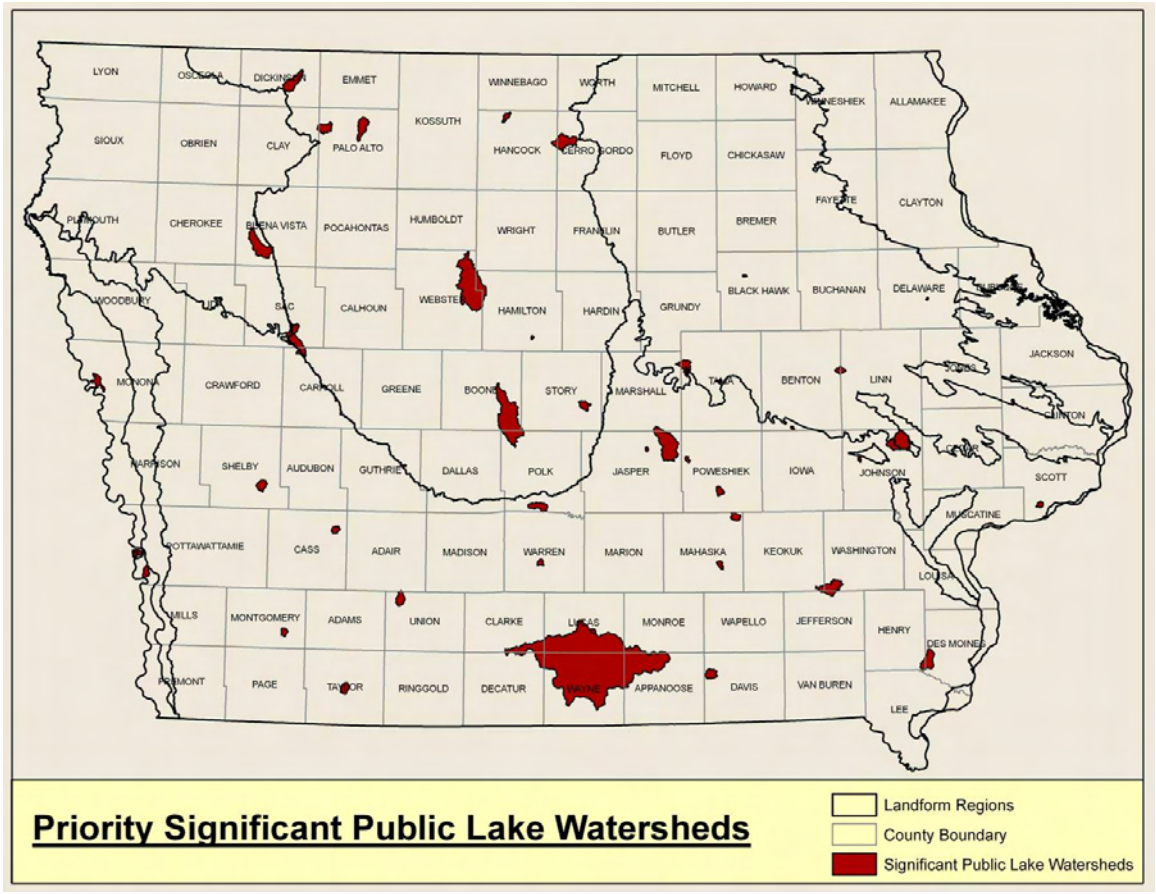


Section 314 (a) (2) of the federal Clean Water Act of 1987 requires each state to include in its biennial Section 305 (b) report specific information on the water quality conditions and trends of the state's "**significant, publicly-owned lakes**," as well as a description of the state's lake protection and restoration programs. In Iowa, "significant, publicly-owned lakes" are defined as those publicly-owned lakes that meet all of the following criteria:

• are maintained principally for public use;
• are capable of supporting fish stocks of at least 200 pounds per acre;
• have a surface water area of at least 10 acres;
• have a watershed to lake surface area ratio of less than 200:1;
• are not shallow marsh-like lakes, federal flood control impoundments, or used solely as water supply reservoirs.

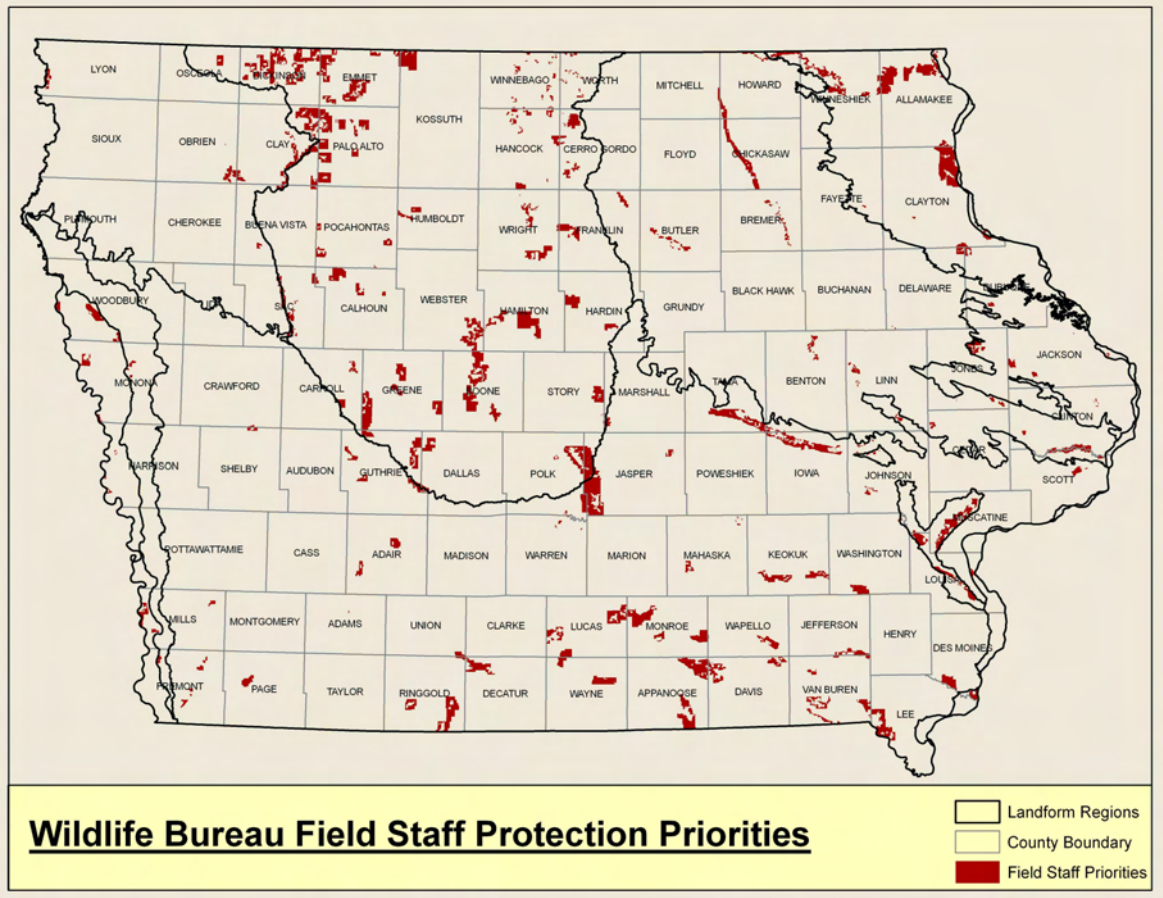
As such, the significant, publicly-owned lakes (SPOLs) represent a subset of the Iowa's approximately 5,400 lakes, ponds, and reservoirs.

Map 8-21. Watersheds which Contain Significant Publicly Owned Lakes



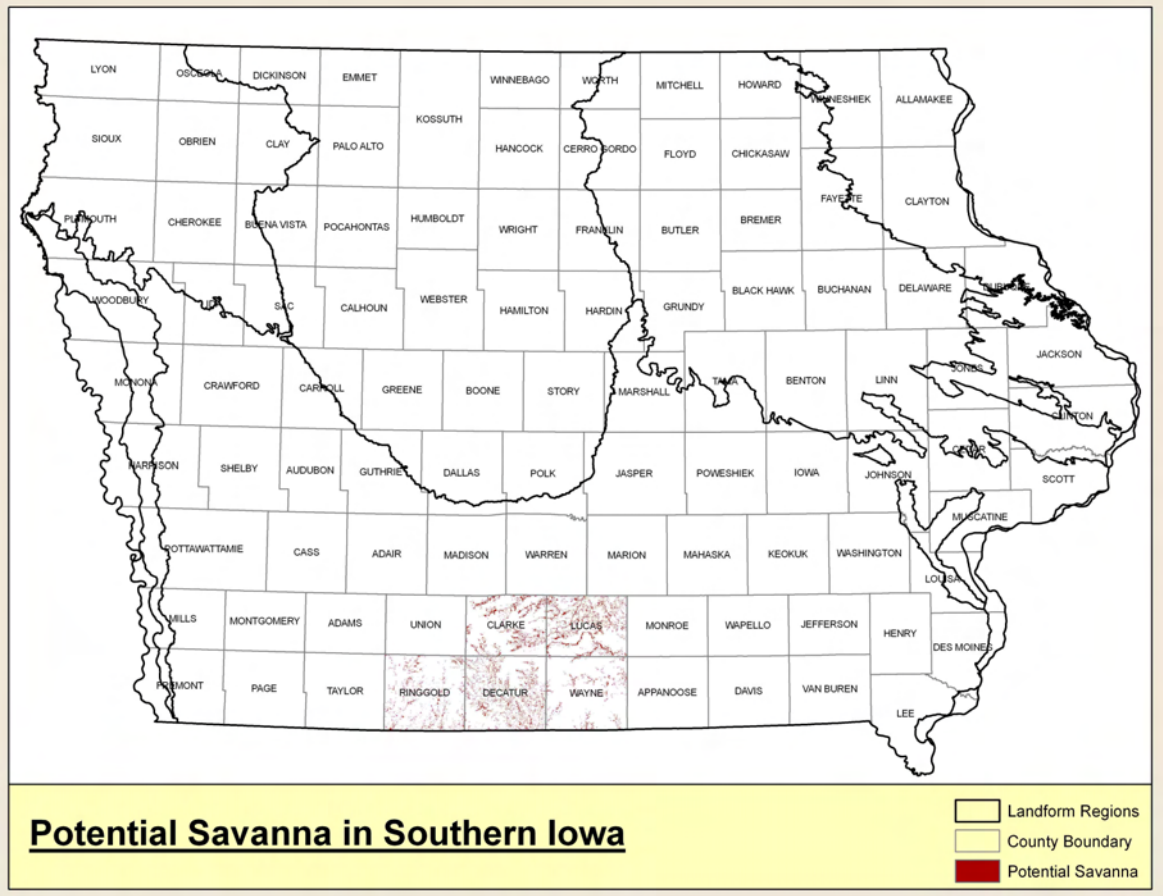
As the importance of habitat conservation on a landscape scale has become increasingly apparent, the IDNR's Wildlife Bureau has placed an emphasis on the creation and maintenance of habitat complexes. This serves to provide core areas for wildlife to reproduce and maintain their populations and decreases the threats caused to populations by habitat fragmentation. With this in mind, in the mid-1990s the wildlife bureau field staff identified areas which serve as important habitat and are important to maintain as habitat, and also areas which would be most beneficial to wildlife populations if they could be restored to habitat through voluntary habitat improvement programs (such as Farm Bill conservation programs) or through easements, or acquisition from willing sellers. This is valuable information as it represents the habitat value assigned to individual areas by those who are intimately familiar with their local landscape.

Map 8-22. Priorities for habitat conservation identified by Wildlife Bureau field staff



Savannah restoration potential was assessed within a 5-county area in southern Iowa by the US Fish and Wildlife Service's Partners for Fish and Wildlife Program. The assessment was based upon soil type and current land cover type. This map is used by conservation partners in southern Iowa to prioritize savanna restoration work.

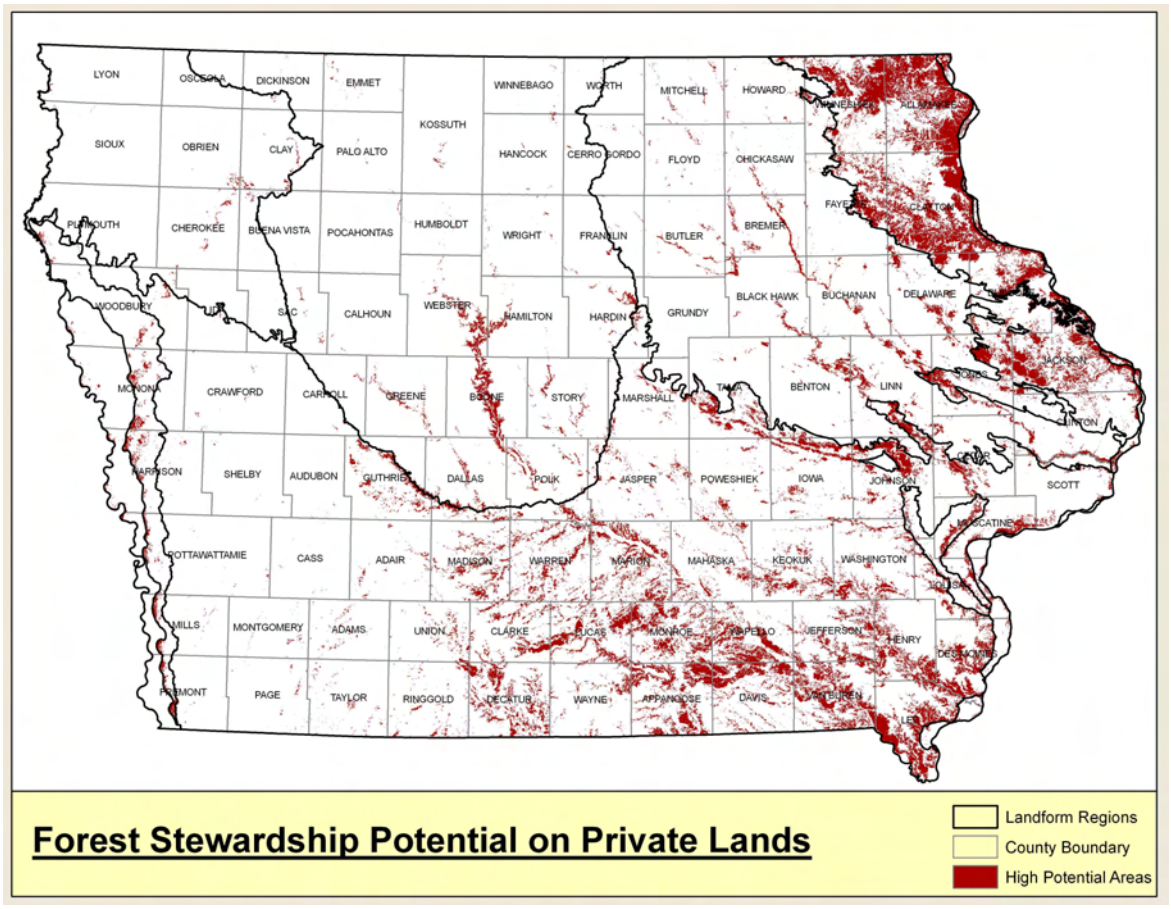
Map 8-23. Savanna restoration potential



The **Forest Stewardship** Spatial Analysis Project (a partnership between the U.S. Forest Service and the states) identified 12 factors which help identify the "Stewardship potential" of a given piece of land. The factors were differentiated into two groups: resource potential and resource threats.

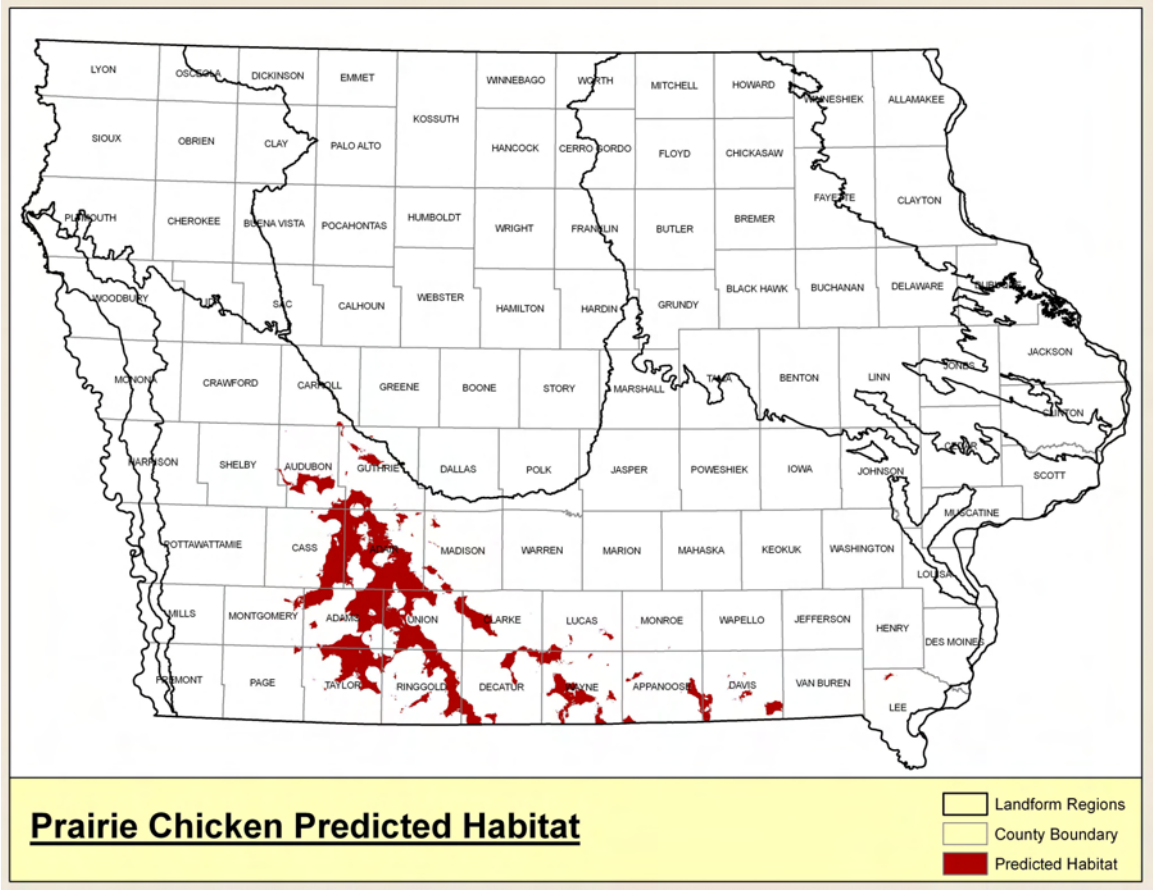
Resource Potential Factors	**Resource Threat Factors**
Riparian Zones	Forest Health (Pest/Disease Risk)
Priority Watersheds	Development Level
Forest Patch Size	Wildfire Assessment
Natural Heritage Data (Forest Wildlife)	
Public Drinking Water Supply Sources (Priority Watersheds)	**Iowa identified 3 additional resource potential factors:**
Private Forest Lands	Forest Soils
Proximity to Public Lands	Forested Landscapes
Wetlands	Historic Forest
Topographic Slope	

Map 8-24. Forest stewardship potential on private lands



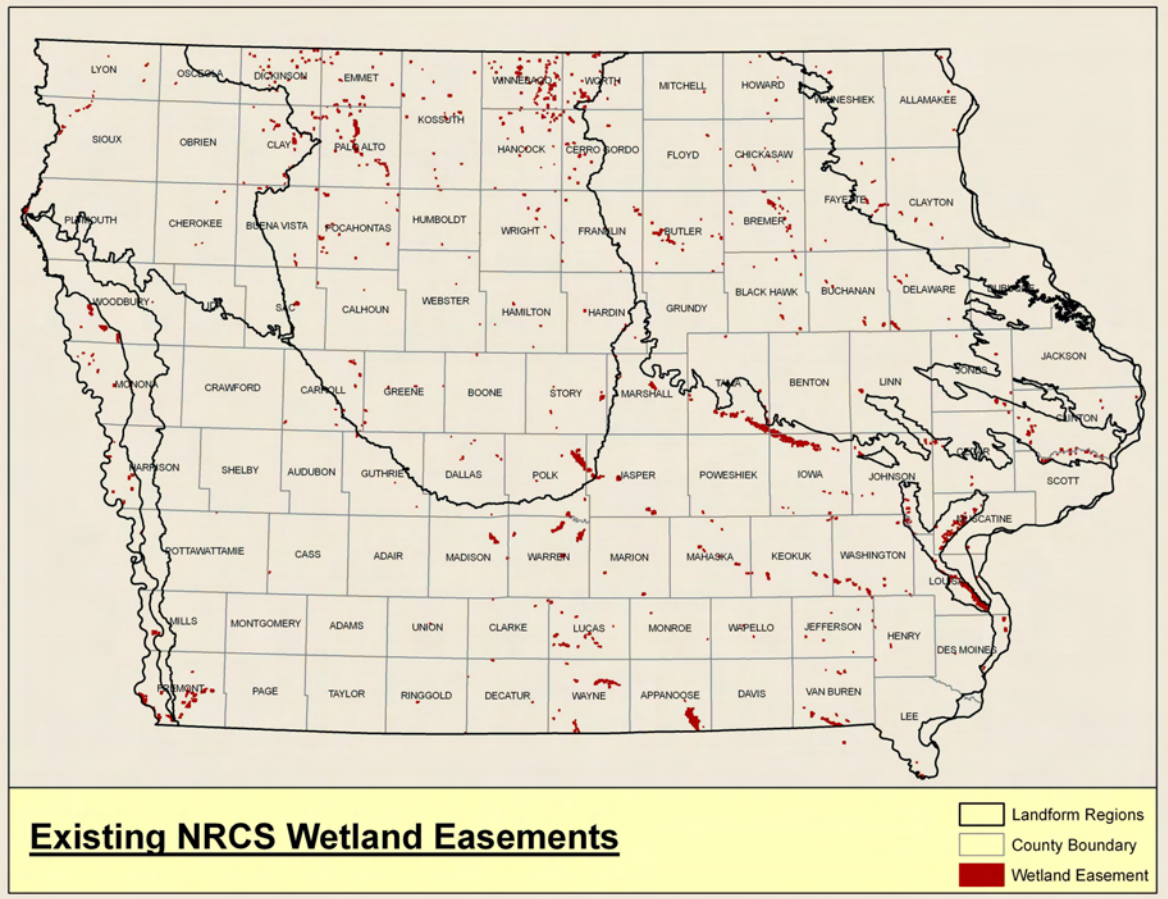
The U.S. Fish and Wildlife Service developed a model for predicting suitable **habitat for the Greater Prairie-Chicken**. Landscape suitability was mapped by applying a model developed for Northwest Minnesota to the 2001 National Land Cover Data for Iowa. Logistic regression was used to compare landscape characteristics between booming grounds and random sites. Map 8-25 depicts only the highest level of suitability modeled. The model is based on the assumption that areas classified as hayland are equivalent to grassland habitat. In addition to providing information about the Greater Prairie-Chicken, this map is included as a representation of the location of mid-grass habitat in amounts signifigant enough to support grassland species more generally.

Map 8-25. Prairie chicken predicted habitat



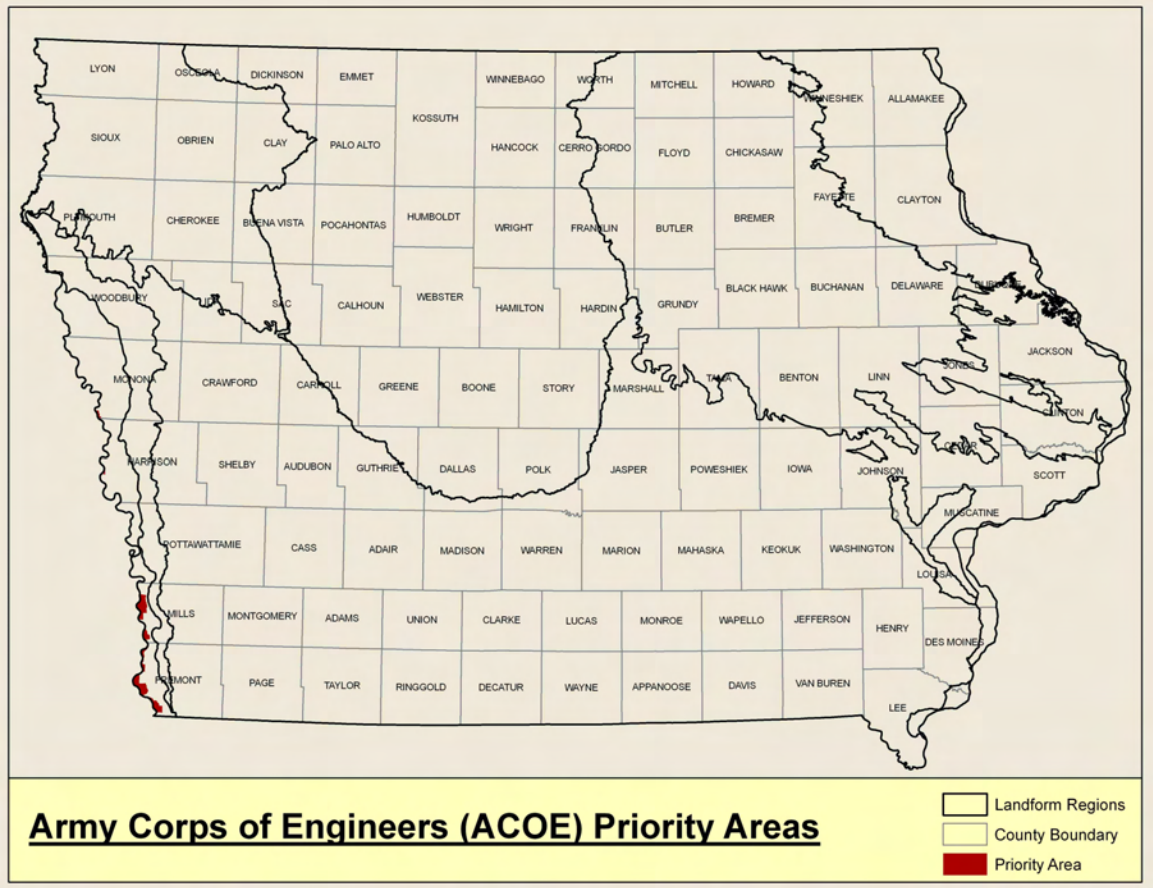
The USDA Wetlands Reserve Program (WRP), Emergency Wetlands Reserve Program and a few other wetlands restoration programs have helped slow the loss of wetlands in Iowa. Wetlands restoration is focused in the 35 county area in north central Iowa called the Prairie Pothole area, and along river and stream corridors throughout the state. Map 8-26 depicts wetland conservation easements.

Map 8-26. Natural Resources Conservation Service wetland easements



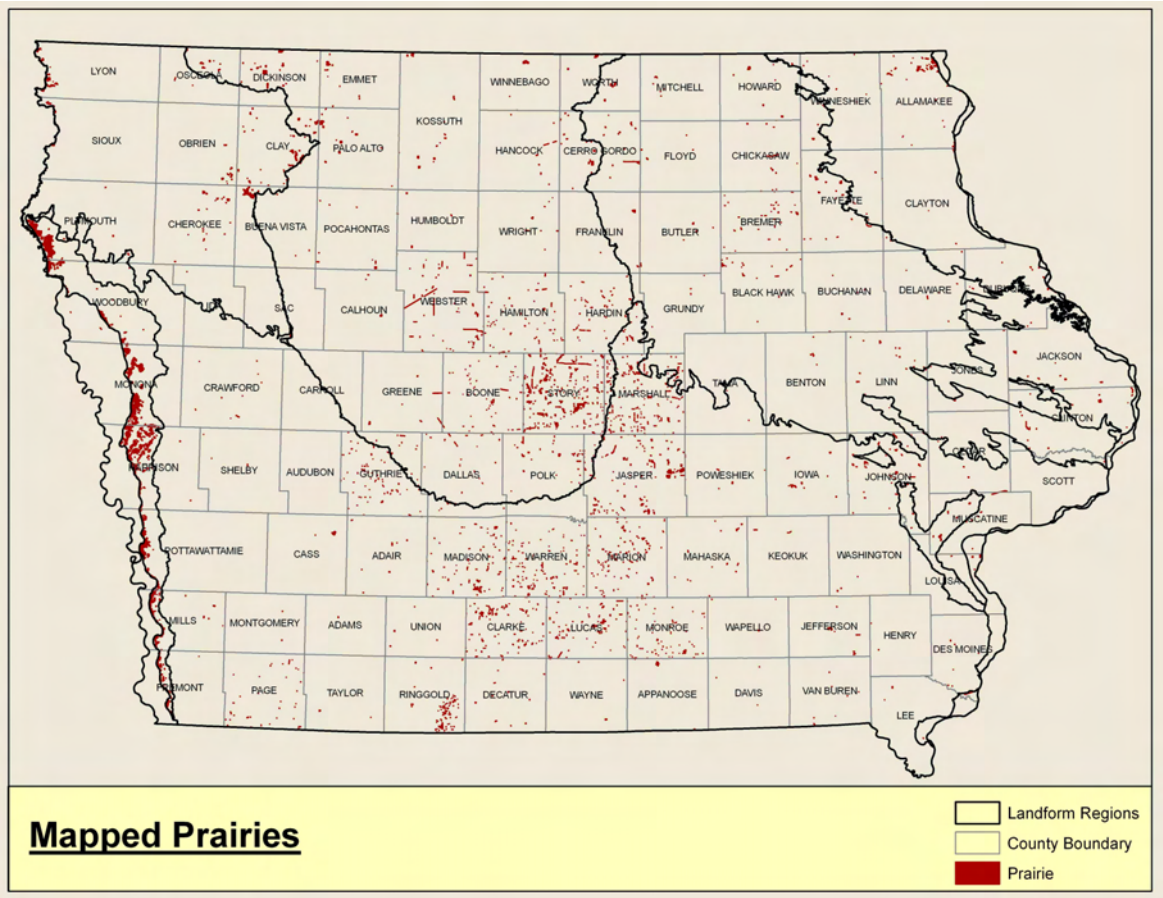
On the Iowa portion of the Missouri River, there is an authorization to restore 20% of the habitat lost as a result of the **U.S. Army Corps of Engineers** (USACE) Bank Stabilization and Navigation Project that occurred on the river. These mitigation areas are managed by the IDNR as part of a formal agreement with the USACE due to impacts on Missouri River floodplain wetlands from USACE activities.

Map 8-27. U.S. Army Corps of Engineers mitigation areas



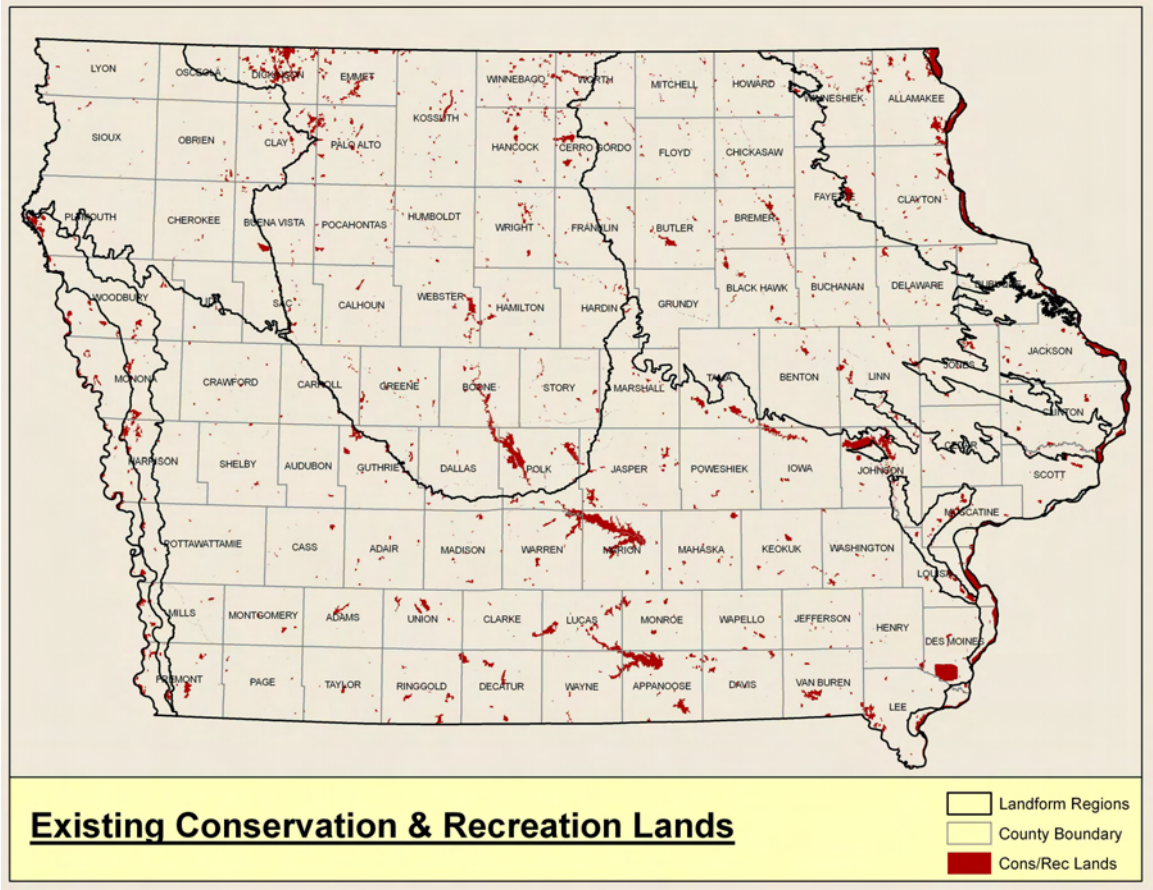
The DNR maintains a map of **Prairie** that includes both remnant and restored prairies of varying quality. NOTE: the size of each prairie mapped is smaller than it appears on the map; these areas are depicted in a larger format to make it possible to view them at the scale of a statewide map.

Map 8-28. Mapped Prairies



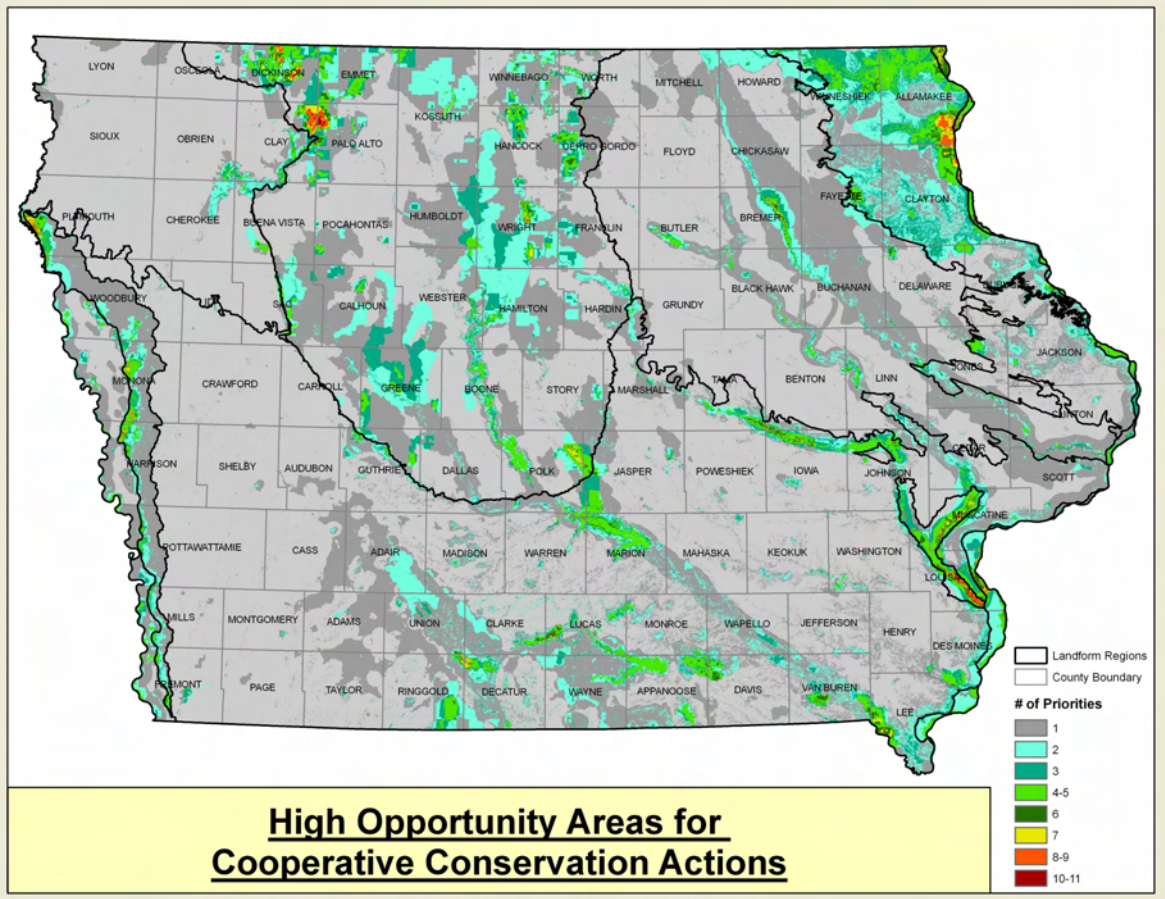
Map 8-29 shows the extent of publicly-owned lands that are protected for **conservation and recreation purposes**. These lands are owned by a variety of entities including Federal agencies, Iowa DNR, and County Conservation Boards.

Map 8-29. Existing conservation and recreation lands



Maps 8-8 through 8-29 were combined to identify **priority areas for conservation actions** (Map 8-30). The shaded areas on the map indicate areas identified as a priority for action by one or more of the plans referenced above. Darker shading indicates areas where progressively more of the plans have overlapping priorities and indicate where partnering to maximize the effect of resources should be possible.

Map 8-30. High Opportunity Areas for Cooperative Conservation Actions



Goal: Protected habitats will be diverse, representative, native plant communities in large and small blocks on public and privately-owned land and water.

While most terrestrial and aquatic habitat classes occur in every region of the state, certain habitat classes were historically more prevalent in specific landforms. Habitat-oriented conservation actions aimed at SGCN should primarily protect, restore, and enhance native habitats and native SGCN. Priority habitat classes by region are shown in Table 8-1.

Table 8-1. Priority Habitat Classes by Landform.

PRIORITY HABITAT CLASS		
LANDFORM	**TERRESTRIAL**	**AQUATIC**
Northwest Iowa Plains	Herbaceous Warm Season Herbaceous Wetlands	Streams
Des Moines Lobe - Uplands	Herbaceous Warm Season - Herbaceous Wetlands	Natural lakes - Herbaceous Wetlands
Des Moines Lobe - Riparian River Corridors	Deciduous Forest (Uplands) Wet Forest (Floodplains)	Rivers, oxbows
Iowan Surface - Uplands	Herbaceous Warm Season Herbaceous Wetlands	Rivers & Streams
Iowan Surface - Riparian	Wet Forest	Rivers & Streams
Paleozoic Plateau - Slopes	Deciduous Forest Warm Season Herbaceous (Goat prairies)	Cold water streams
Paleozoic Plateau - Riparian	Wet Forest	Oxbows Backwaters
Missouri Alluvial Plain	Wet Forest	Missouri River Channel Oxbows
Loess Hills	Herbaceous Warm Season (northern one-third) Forest (southern two-thirds)	Streams
Southern Iowa Drift Plain	Savanna Warm Season Herbaceous Shrublands	Rivers- streams threatened by straightening & erosion, Ponds, Man-made lakes
Mississippi Alluvial Plain	Wet Forest	Large rivers, Backwaters

Habitat protection and management decision-makers, however, must be realistic in assessing changes that have occurred since pre-settlement times. Many native habitats have been displaced from their original sites. The Loess Hills is a primary example where forests have supplanted the native prairies that were originally maintained by fire. Forest-dwelling wildlife communities have replaced the original prairie species over most of the southern two-thirds of the Hills. Some of these forest birds are also on the list of SGCN. The human

population of western Iowa has embraced the hills in their current condition and many of the forested acres are held privately as wooded home sites. Any attempt to revert the entire Loess Hills back to prairie would likely meet with intense opposition. Concentrating large-scale prairie restoration and management in the northern Loess Hills seems the best approach. Small-scale prairies can be maintained in the southern Hills to provide biodiversity to otherwise primarily wooded habitats.

Management Vision: **Diverse wildlife communities will be developed on public and private lands and waters through the use of adaptive ecological management principles.**

Goal: Wildlife management will be based on science.

Strategies within this vision stress educated partners working together. Conservation actions adopted as part of the IWAP should be based on the best available science. The lack of specific knowledge about the abundance and distribution of SGCN has been mentioned several times (see Chapter 7). Too frequently land management actions are implemented without intent or regard for the possibility of evaluation. Better communication must be developed between wildlife scientists, the staffs of government land management agencies at all levels, public land managers, and private landowners to assure that an adaptive approach is built into land management decisions.

Recreation Vision: **More Iowans will participate in wildlife-associated recreation, and all Iowans will have access to publicly owned recreation areas to enjoy wildlife in its many forms.**

Goal: The number off Iowans participating in wildlife-associated recreation (wildlife viewing, hunting, fishing, photography, hiking, outdoor classrooms, etc.) will increase 50 percent by 2030.

The 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation in Iowa estimates that in 2001 there were 690,000 resident anglers, 236,000 resident hunters, and 1,129,000 resident wildlife watchers six years of age and older in Iowa. Residents who view and utilize the wildlife resource will be more open to protecting that resource. A broad and expanded base of support is needed to help insure that wildlife and habitat management and protection efforts receive adequate funding.

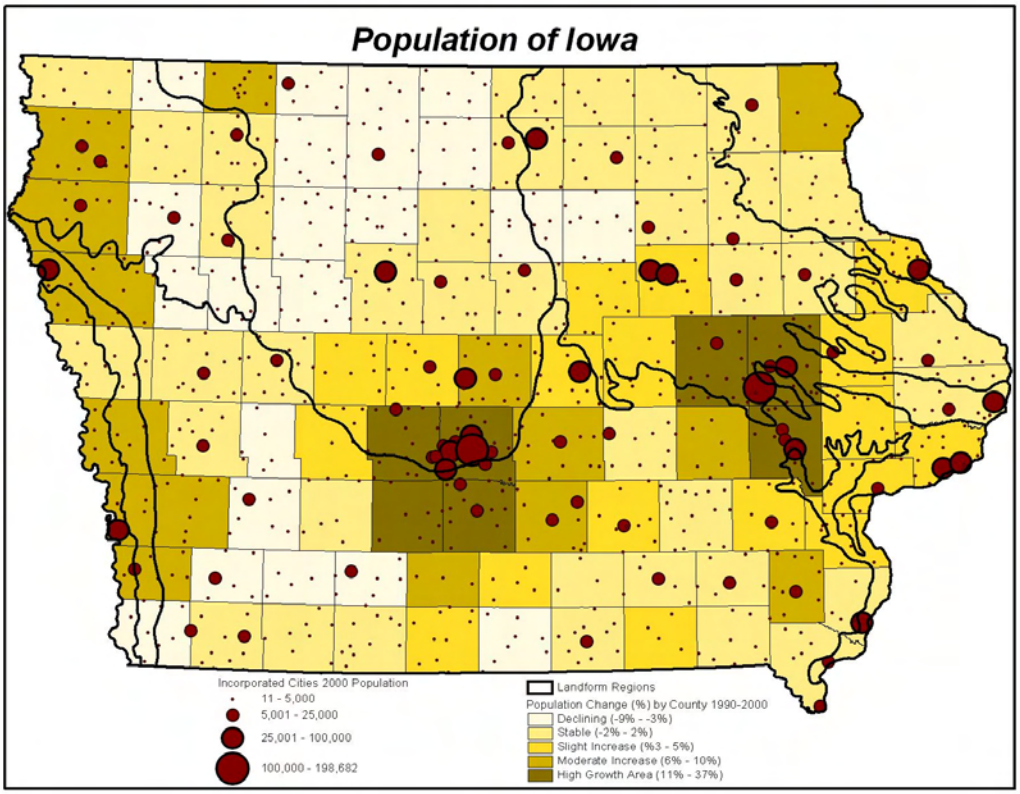
Goal: Wildlife-associated recreation will be available to all Iowans on public lands near their home.

In a culture where time for leisure activities is limited, new participants in wildlife -associated recreation will need to find public lands on which to recreate close to home. While all Iowans deserve access to quality natural areas, the first priority should be given to acquiring and protecting public natural areas close to larger population centers. This will create an appreciation for wildlife-associated recreation among the greatest number of citizens in the early stages of the 25-year effort and generate the support needed completing the Plan. Major population centers in Iowa are shown in Map 8-31. The distribution of existing public lands is shown in Map 8-32.

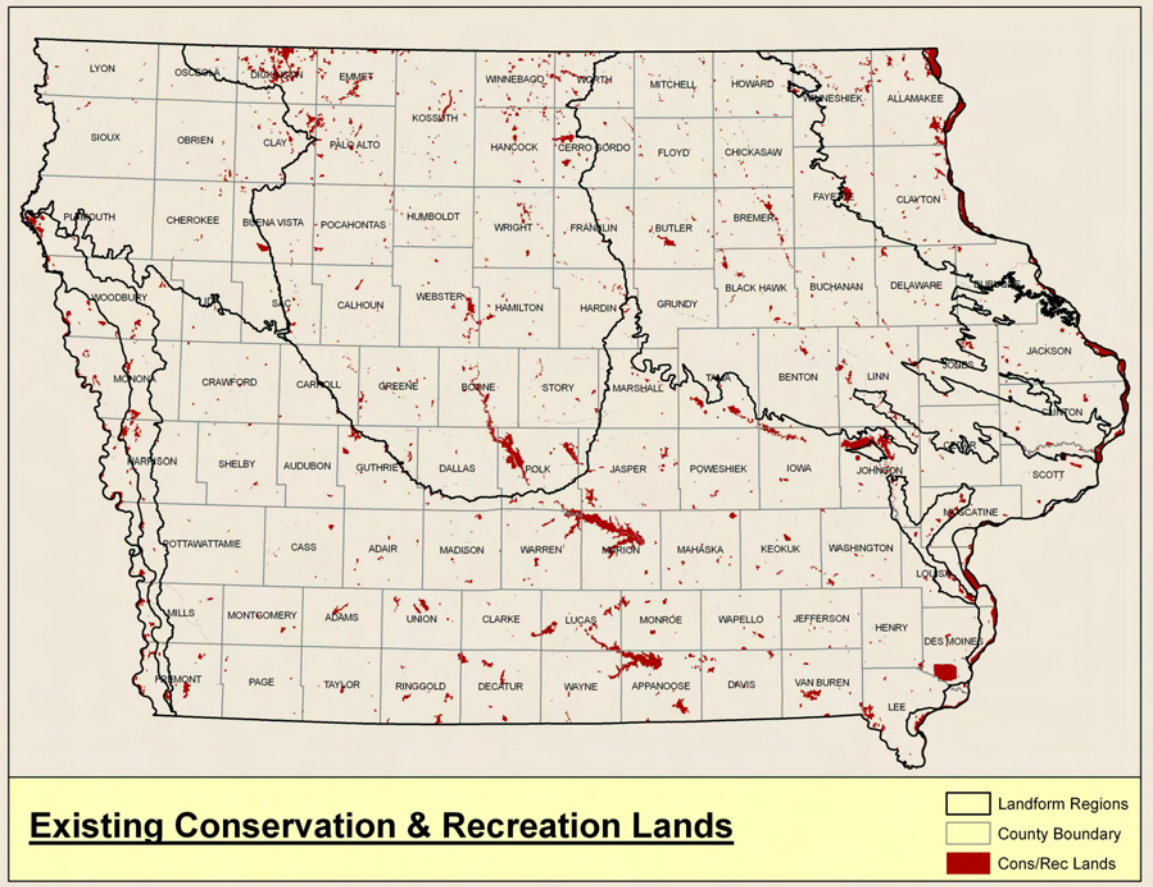
Goal: Increasing wildlife-associated recreation will improve public health.

Priority should be given to promoting the health benefits to young and old of wildlife-associated recreation.

Map 8-31. Distribution of Iowa's Human Population



Map 8-32. Distribution of Existing Public Lands



Education Vision: Iowans will respect wildlife for its many values and they will advocate effectively for conservation of wildlife and wildlife habitats.

Goal: Iowans will understand the relationships between land use, wildlife diversity and abundance, the quality of life for all citizens, and the positive effects wildlife has on Iowa's economy.

The conservation actions proposed to implement this vision incorporate national standards proposed by the International Association of Fish and Wildlife Agencies. Priority should be given to educational programs that effectively reach the most people at the least expense. Electronic communication such as the use of the Internet and television can be used to reach every corner of the state, and include urban and rural residents alike.

Focused messages must be developed to encourage participation in wildlife-associated recreation and to develop support for expanded funding. Targeting first time participants with outdoor skills information will be important.

Funding Vision: **Stable, permanent funding will be dedicated to the management of wildlife at a level adequate to achieve the visions of this plan.**

Goal: Government (Federal, state, and county) and private conservation spending will be increased so that the goals of this Plan are reached by 2030. Funding will be dependable, secure, and appreciated as a powerful economic and social investment.

Of the six vision statements, reaching the Funding Vision goal is the highest priority. None of the other visions can be implemented in anything near the 25-year time frame without increased funding. An estimate of the costs for implementing the IWAP is included in Chapter 10.

No single conservation organization or stakeholder group has the power to attain the necessary funding on their own. An effort comparable to the coalition that has lobbied for Teaming With Wildlife and the Conservation and Reinvestment Act but vastly broadened to include all potential stakeholders will be necessary. A grass roots coalition of wildlife enthusiasts of all types - birdwatchers, bird feeders, hikers, back packers, hunters, anglers, photographers, etc. - is a start, but it should also include local government leaders whose communities stand to benefit from increased recreation revenues and improved quality of life. Only a broad-based coalition will have the strength necessary to obtain funding.

Lobbying must be done at the Federal level to convince Congress to supply basic funding to the states equivalent to the $350 million targeted in the Conservation and Reinvestment Act. Lobbying at the state level will be essential to obtain whatever level of non-Federal matching funds will be mandated by Congress.

CHAPTER EIGHT

PRIORITIES FOR CONSERVATION ACTIONS

General Discussion

Choosing site-specific locations and setting definitive priorities for implementing the conservation actions identified in Chapter 6 are beyond the scope of this *strategic* p*lan*. Few of the wildlife, habitat, and management conservation actions will be implemented, however, without a substantial increase in conservation funding in Iowa. Planning for gathering the information needed to implement the recreation and education actions should be started immediately. Education programs must be developed to inform the public about the economic, social and recreation benefits of implementing the Plan so that the political support needed to acquire the needed funding can be generated.

During the development of the Plan it became obvious that there are important gaps in our knowledge about the distribution and abundance of Iowa's SGCN and their habitats (Chapter 7: *Research, Survey, Inventory and Monitoring Needs).* More information is needed before a comprehensive *implementation plan* can be written.

Establishing priorities for the Wildlife, Habitat, and Management visions is a complex task. The IWAP establishes habitat protection, restoration and enhancement as the foundation for improving the status of SGCN. At least three different approaches need to be taken:

1) Protect and enhance existing habitats that benefit SGCN. This approach gives priority to areas of the state with existing habitat for SGCN or that can be suitable with habitat enhancements. Areas with the greatest existing species diversity should be targeted, land acquired or permanent conservation easements developed, and the appropriate management plans implemented. This approach is the most cost-effective way to benefit the most species in the short term. But SGCN are declining with the amount of existing habitat available today. Enhancing these habitats may slow the decline in local populations, but in the Steering Committee's view will not by itself reverse statewide or regional declines.

The greatest potential to apply this approach is for SGCN that inhabit wooded habitats and some grasslands. These existing habitats are most abundant in the Paleozoic Plateau, the southern and easternmost portions of the Southern Iowa Drift Plan, the Loess Hills, and along the interior river systems

(Map 2-2). The Southern Iowa Drift Plain has extensive acreages of mostly cool season grasslands enrolled in the short term Conservation Reserve Program that could be permanently protected and enhanced to improve habitat for SGCN. Few if any wetlands or wetland-grassland complexes exist in private ownership.

2) Develop new habitats for SGCN in areas where these habitats do not exist. This approach would provide new habitat for SGCN but at a higher cost. Establishing new habitats and restoring populations will extend the range of these species, provide the potential for greater genetic diversity and interaction between populations, and reduce the chances of local population extinctions if travel corridors are also provided. It will also be necessary to meet the recreation goals (50% increase in wildlife-associated recreation in areas near home).

Partnerships between IDNR, USFWS, Iowa County Conservation Boards and private conservation organizations have had many successes restoring wildlife habitats on agricultural land. Agricultural lands too steep or too wet for economical farming have been targeted for acquisition or protection, then wetlands and grasslands have been restored or grazed pastures allowed to revert to forest. Research sponsored by IDNR has shown that birds, including several SGCN, re-colonize these areas quickly. Much is yet to be learned about the ability of less-mobile species to locate these habitats and establish new populations.

Opportunities to restore habitats for SGCN exist statewide. The Des Moines Lobe currently has the greatest acreage of restored wetland-grassland complexes in the state and nearly unlimited opportunities for further conservation activities. Similar opportunities exist on a more restricted basis in the NW Iowa Plain and the Iowan Surface. Riparian wetlands can be restored along most of the interior river systems.

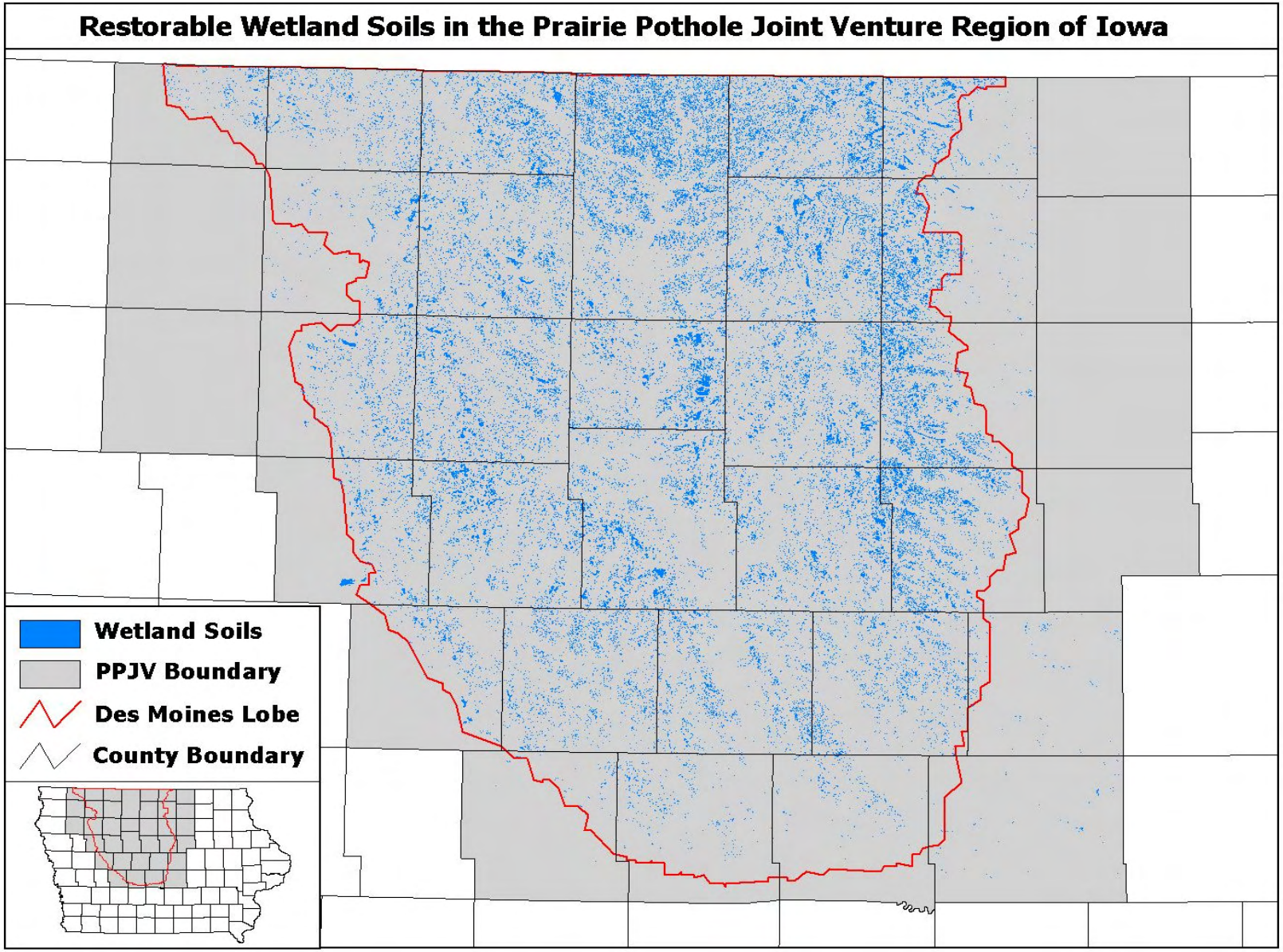
3) Improving the status of aquatic SGCN will require a more broadly-applied conservation effort. Habitat in rivers, streams, lakes, impoundments and wetlands can be improved only if soil erosion, siltation and all the associated problems are reduced (Chapter 5). Targeting areas to protect and restore habitats for terrestrial SGCN will help with this process but will not protect enough land by itself to help all aquatic systems. Vegetative cover must be returned to more of the landscape to hold soil in place. Existing soil-retention programs like terracing, buffer strips and no-till agriculture need to be expanded and new approaches explored to make soil conservation more widely acceptable and financially attractive to the farming community.

Targeting individual watersheds with a comprehensive conservation effort to improve the status of all SGCN and to serve as demonstration areas is the best initial approach to build support for more-widespread efforts. IDNR in cooperation with Iowa's CCBs, USDA's NRCS and FSA, Iowa Soil & Water Conservation Districts, U.S. EPA and local government entities has had success

in restoring selected watershed to provide a variety of wildlife, recreational, social and economic benefits to local communities. The most successful efforts have been in the Southern Iowa Drift Plain, but this approach can be applied selectively in most landforms.

The Steering Committee believes a blend of all three approaches will be necessary to accomplish all the goals of the IWAP. The plight of all SGCN in Iowa is caused by the loss of native vegetation from the landscape that provided wildlife habitat and kept soil and associated products out of the waters. Protecting existing habitats is a good strategy to prevent further losses, but it alone will not return SGCN to their former range or raise populations to a viable level. Habitats for SGCN need to be restored in socially-acceptable places. Widespread conservation practices will be needed to address water quality issues and are best approached on a watershed basis.

Map 8 - 1. Restorable Wetland Soils in the Prairie Pothole Region of Iowa



PRIORITIES FOR VISION ELEMENTS

Wildlife Vision: Iowa will have viable wildlife populations that are compatible with modern landscapes and human social tolerance.

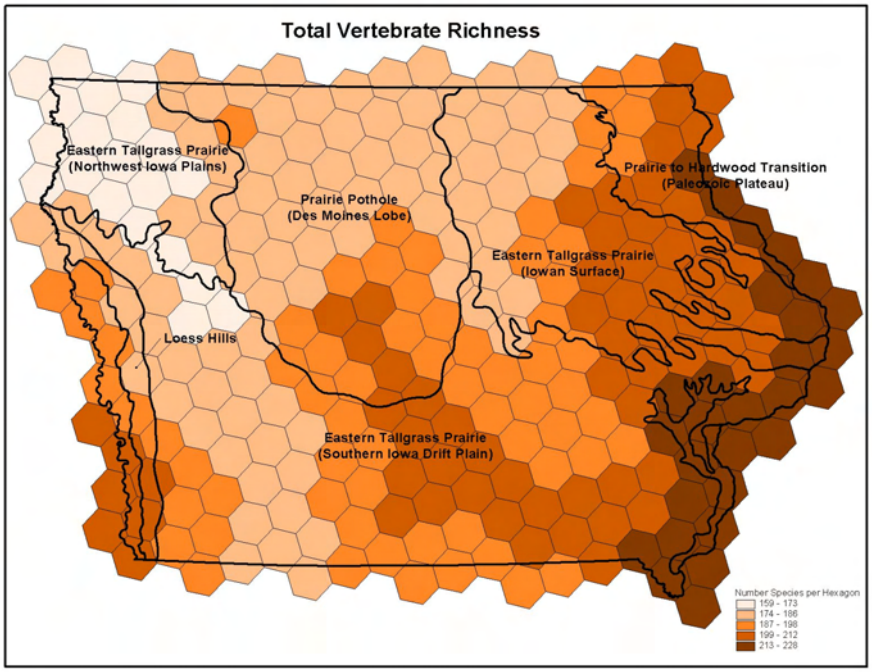
Goal: Common species will remain common.

Conservation activities to address the first goal should be directed to regions of the state having the greatest wildlife species diversity. Iowa GAP has produced maps that delineate regions of the state with the greatest potential *terrestrial vertebrate wildlife diversity* based on habitat distributions (Map 8-2). Hexagons shown on the species richness maps cover 635 square kilometers. Iowa has a total of 265 hexagon units either wholly or partially within the boundaries of the state.

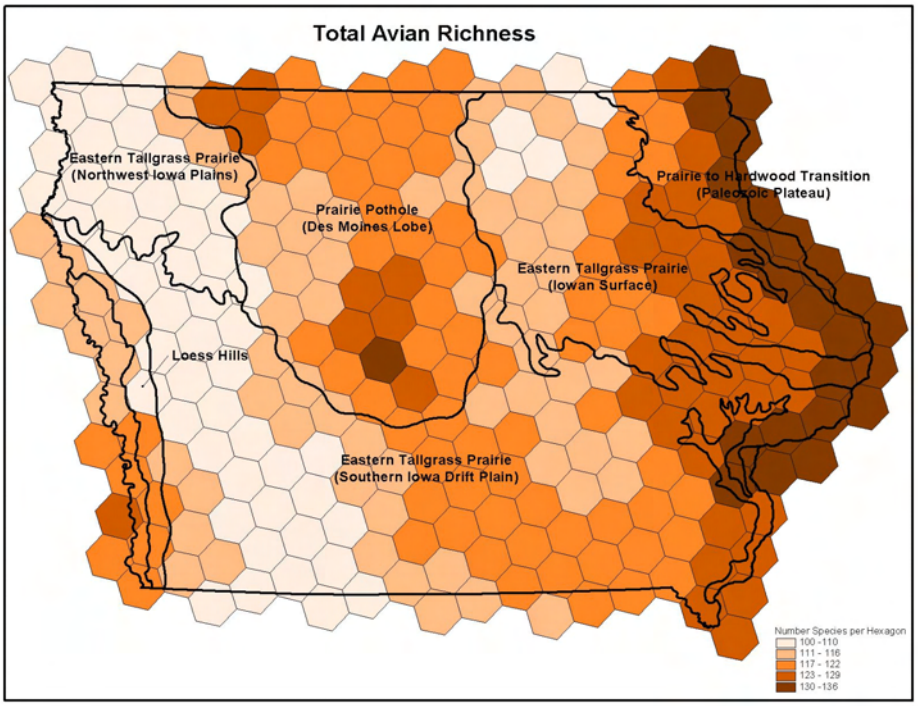
The statewide wildlife diversity map was based on individual habitat models for 288 species that were also included in this Plan. Individual species richness maps are provided for birds (170 modeled species), mammals (53 species), reptiles (44 species) and amphibians (21 species) (Map 8-3 through 8-6). Although these maps do not show distribution predictions for all Iowa terrestrial vertebrates included in the Plan, they can be used as indicators of regions of species richness for SGCN. Some SGCN may have specific habitat requirements or limited distributions that are not found within *species rich* portions of the state. The special needs of these animals must to be considered when specific management plans are prepared.

The species richness maps reflect the general distribution of existing wildlife habitats. The eastern and southeastern regions of the state and the southern Loess Hills have the greatest total species diversity (Map 8-2) and the greatest diversity of birds (Map 8-3), reptiles (Map 8-5) and amphibians (Map 8-6). This may because wooded habitats in these regions serve as major migration corridors for birds and because they contain a substantial portion of the state's remaining mixed woodland-grassland-riparian habitats. Diversity tends to decline following the interior river valleys northwest into the heavily agricultural regions of the state (formerly prairie or prairie potholes).

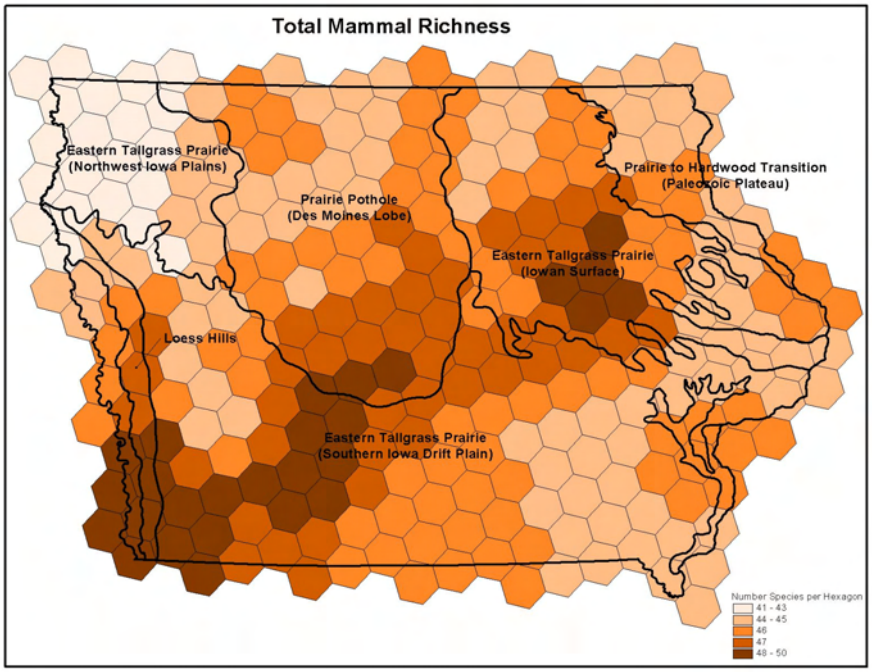
Map 8-2. All Terrestrial Vertebrate Species Richness (from Iowa GAP)



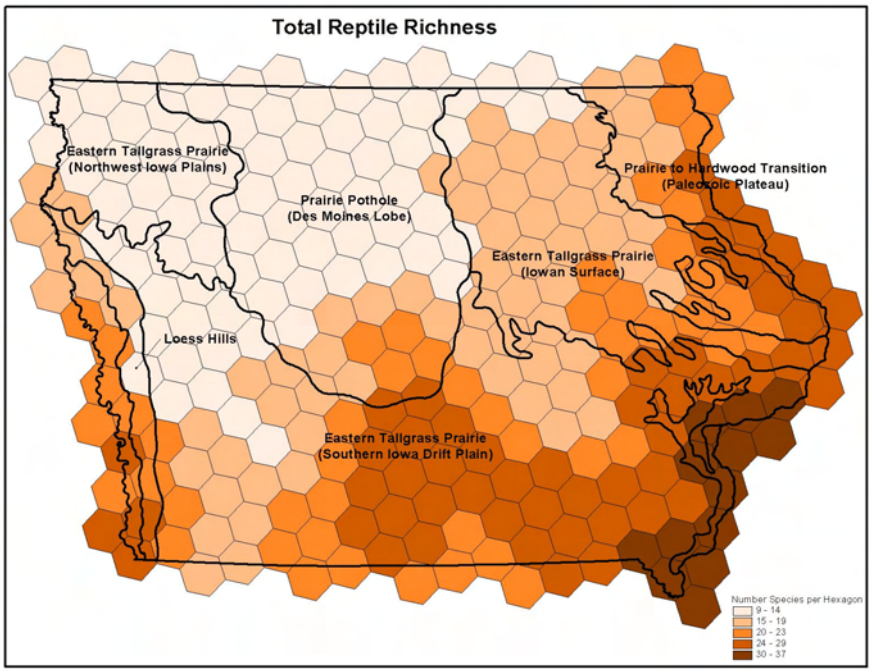
Map 8-3. Bird Species Richness (from Iowa GAP)



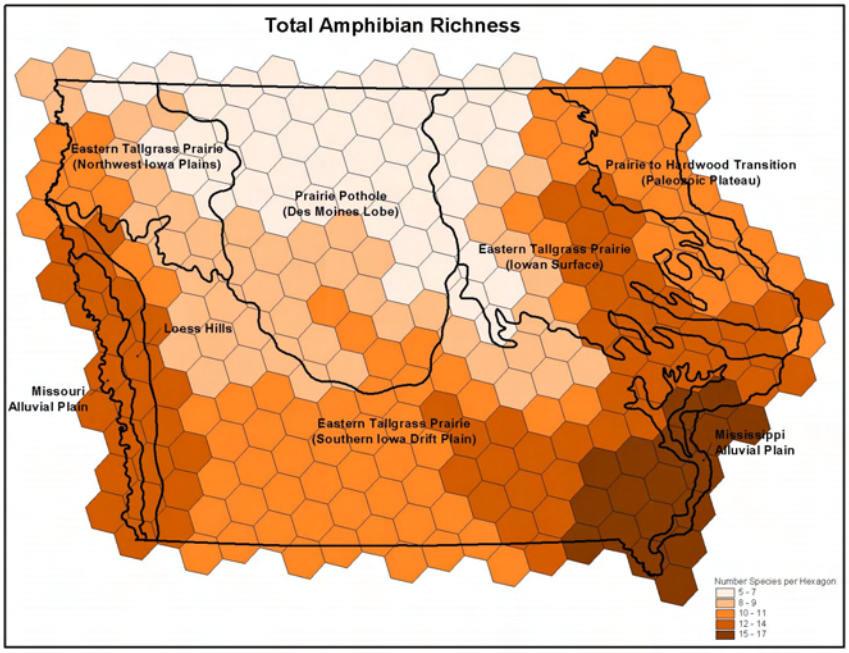
Map 8-4. Mammal Species Richness (from Iowa GAP)



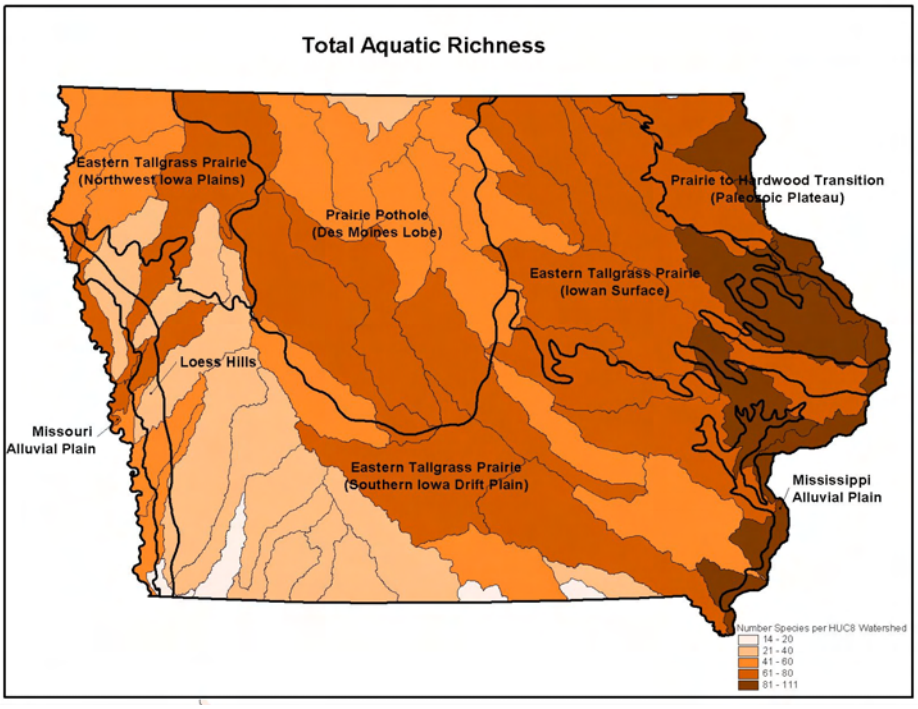
Map 8-5. Reptile Species Richness (from Iowa GAP)



Map 8-6. Amphibian Species Richness (from Iowa GAP)



Map 8-7. Aquatic Species Richness (from Iowa Aquatic GAP)



The exception to this pattern is the species richness of mammals (Map 8-4). Iowa GAP authors speculate that the concentration of mammal diversity in southwestern Iowa may be due to the influence of western species. Before fire suppression became widespread in the late 1800's, the Loess Hills were extensive grasslands (rather than today's forest) and probably represented the eastern extension of the range of several western species.

Iowa Aquatic GAP is being finished as this Plan is completed and can be used in future revisions to plot aquatic vertebrate species diversity. A preliminary map of 157 modeled species of aquatic vertebrates was provided to the Steering Committee for use in this version of the Plan (Map 8-7).

While these maps delineate general areas of species richness, much must be learned about the actual distributions and abundance of SGCN within these regions. Inventory and monitoring actions must take place before the needs of individual SGCN can be addressed (Chapter 7).

Goal: Populations of SGCN will increase to viable levels

To achieve this goal the second approach to habitat protection must be taken - creating new habitats for SGCN through land acquisition and management and by taking specific conservation actions designed to improve the status of SGCN that need more intensive assistance. This will take a combination of habitat protection, habitat management and scientific inventory and monitoring.

The habitat acquisition issues are discussed under the habitat vision goals below. The inventory and monitoring issues are discussed in Chapter 7. Once the distribution and abundance of SGCN are more fully understood, conservation actions can be tailored to their recovery. Specific habitat management prescriptions can be defined to assist key species, populations may need translocation to newly created habitats or to isolated tracts of existing habitat, connections may need to be developed between habitat blocks, etc.

Goal: The abundance and distribution of wildlife will be balanced with its impact on the economic livelihood and social tolerance of Iowans.

Past experience has shown that human social tolerance to wildlife must be cultivated and considered when implementing new conservation actions in a landscape dominated by private land. Expanding populations of white-tailed deer and giant Canada geese have created problems for citizens in some circumstances. Managing water levels on public wetlands during periods of

heavy rainfall have caused temporary but unacceptable flooding on adjacent private lands. Weed encroachment from public grasslands to private croplands also stirs controversy. Real or perceived, these problems need to be considered when implementing the conservation actions outlined in this Plan and steps taken to minimize impacts on neighboring landowners.

Habitat Vision: Iowa will have healthy ecosystems that incorporate diverse, native habitats capable of sustaining viable wildlife populations.

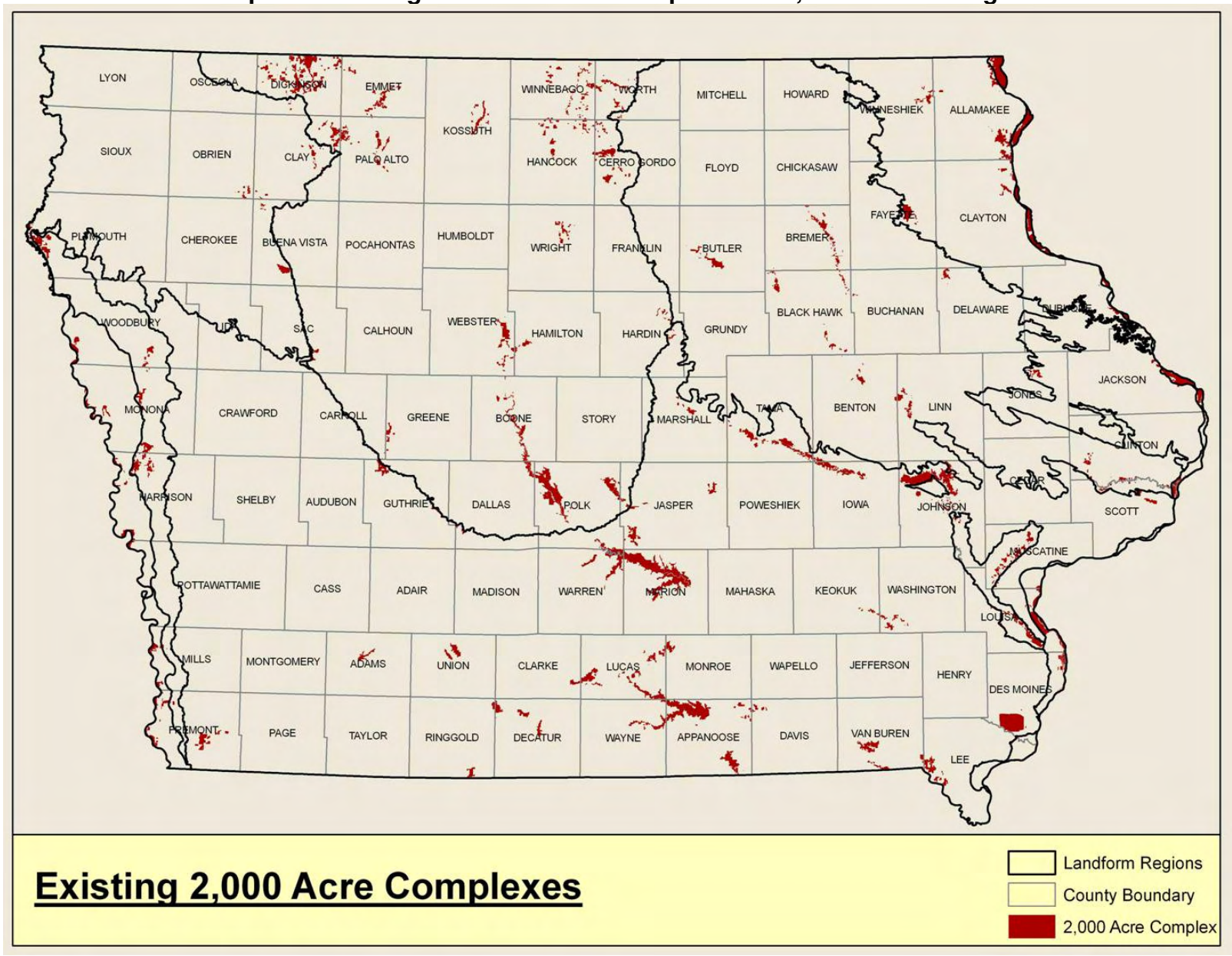
Goal: By 2030, the amount of permanently protected wildlife habitat in Iowa will be doubled.

Until recently land acquisition efforts in Iowa have been directed at purchasing the highest quality habitats available at the time funds were available. Too frequently this resulted in scattered small tracts of land that provided limited opportunity for biodiversity management, had little connectivity, and were difficult to manage logistically. Habitat blocks were too small to manage for more than one habitat class (e.g. grasslands or forest) on the area. If multi-species management was attempted the resulting habitat patches were too small to attract area-sensitive species. The recently developed Neal Smith National Wildlife Refuge is one notable example of a large-scale restoration (by Iowa standards) that is attempting to establish a functional tallgrass prairie ecosystem.

Since the 1980's habitat acquisitions have focused on the eventual development of major conservation areas of 3,000 - 5,000 acres in more or less continuous blocks. Experience has shown that areas of this size allow management for biodiversity between habitat classes and provide the ability to manage for multiple successional stages within one habitat class. This approach benefits multiple SGCN that need different successional stage on the same site or single species whose habitat needs change throughout the year. It also benefits game species that typically are more abundant in early successional stages as well as nongame. Partners-in-Flight has adopted a similar approach in designing Bird Conservation Areas.

Expanding existing large core conservation areas to the desired size should be given priority over work in smaller areas. Map 8-8 shows the location of existing habitat complexes of 2,000 acres or larger that are in public ownership that could reach the 3,000-acre threshold with comparative ease. These are permanently protected conservation lands owned by IDNR, county conservation boards, the federal government (USFWS - NWRs and WPAs, USACOE, NPS), the Nature Conservancy, Iowa Natural Heritage Foundation or protected under long-term federal WRP easements. Smaller scale maps of these public lands in each landform are shown in Appendix 19.

Map 8-8. Existing Protected Land Complexes of 2,000 acres or larger



Land (or funding) is seldom available for acquisition in blocks of this size so initial purchases in a new geographical area should be screened for expansion potential. Conservationists working in target areas to acquire large tracts must exhibit patience. State government in Iowa has traditionally relied on willing sellers to acquire or protect land. Projects of this size can take a decade or longer to complete.

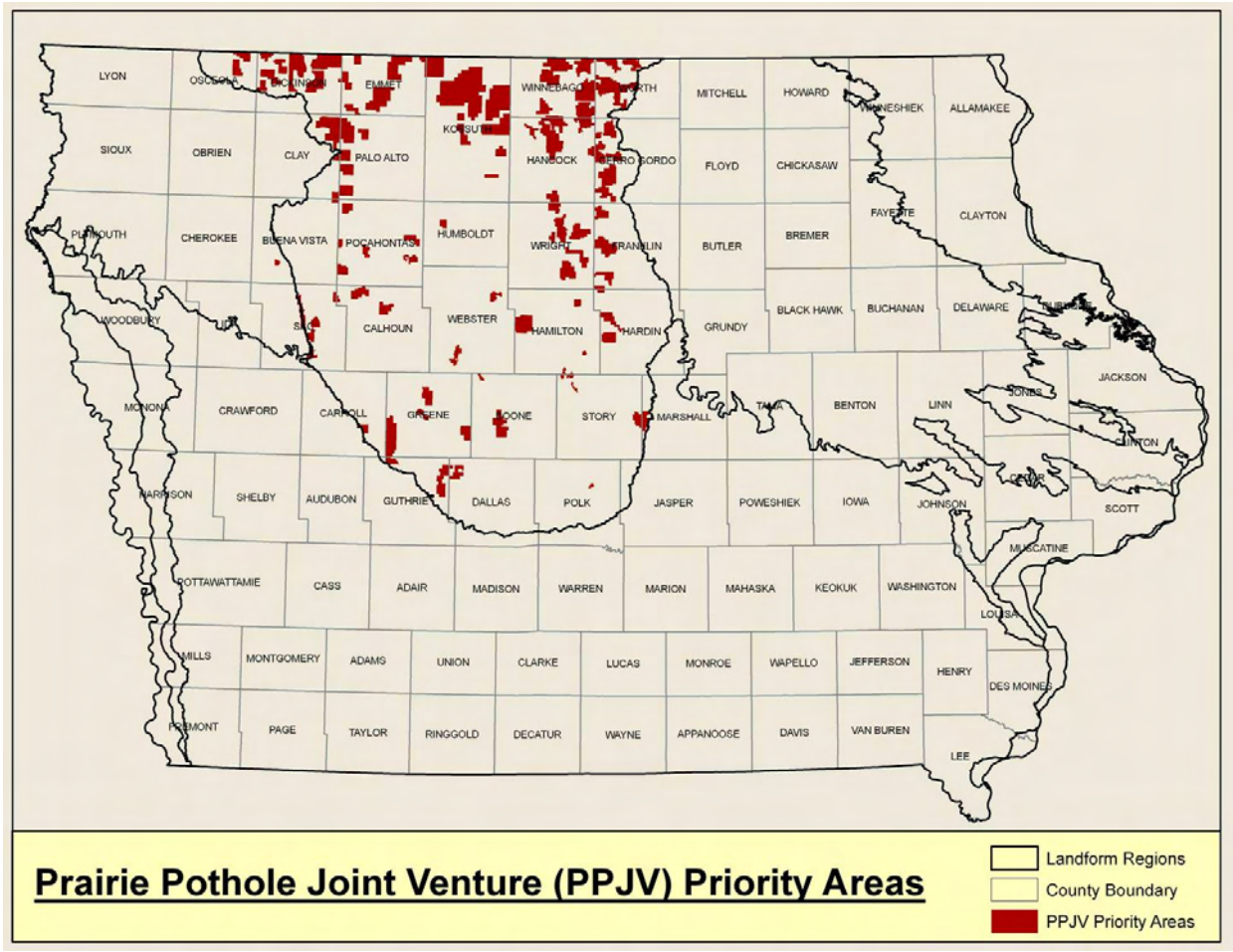
Map 8-8 also shows extensive areas of the state that do not have core habitat blocks to meet the habitat or recreation goals of this Plan. The western third of the Southern Iowa Drift Plain, the southern Loess Hills, the NW Iowa Plain and the southwestern portion of the Des Moines Lobe are notably devoid of these areas. Smaller geographic areas without permanently protected conservation lands can be found in all the other landforms as well.

Not all habitat protection efforts can be vested in acquiring large core blocks of habitat. Once the distribution of more SGCN is better understood, key smaller tracts of habitat may be identified that are required for the protection of exceptionally imperiled SGCN. Connectivity needs to be established between large core areas that are isolated from other tracts. A more dispersed approach may be needed to protect target watersheds and aquatic SGCN than concentrating efforts in one location. These decisions need to be made on a case-by-case basis.

Coordination with other wildlife and biodiversity conservation plans prepared by natural resource agencies and private conservation organizations should be a high priority. Prioritization criteria used by these organizations differ and may include different classes of species or different regional boundaries. Their cumulative site priorities are important in identifying significant locations for future habitat protection actions through partnerships (Maps 8-9 through 8-30).

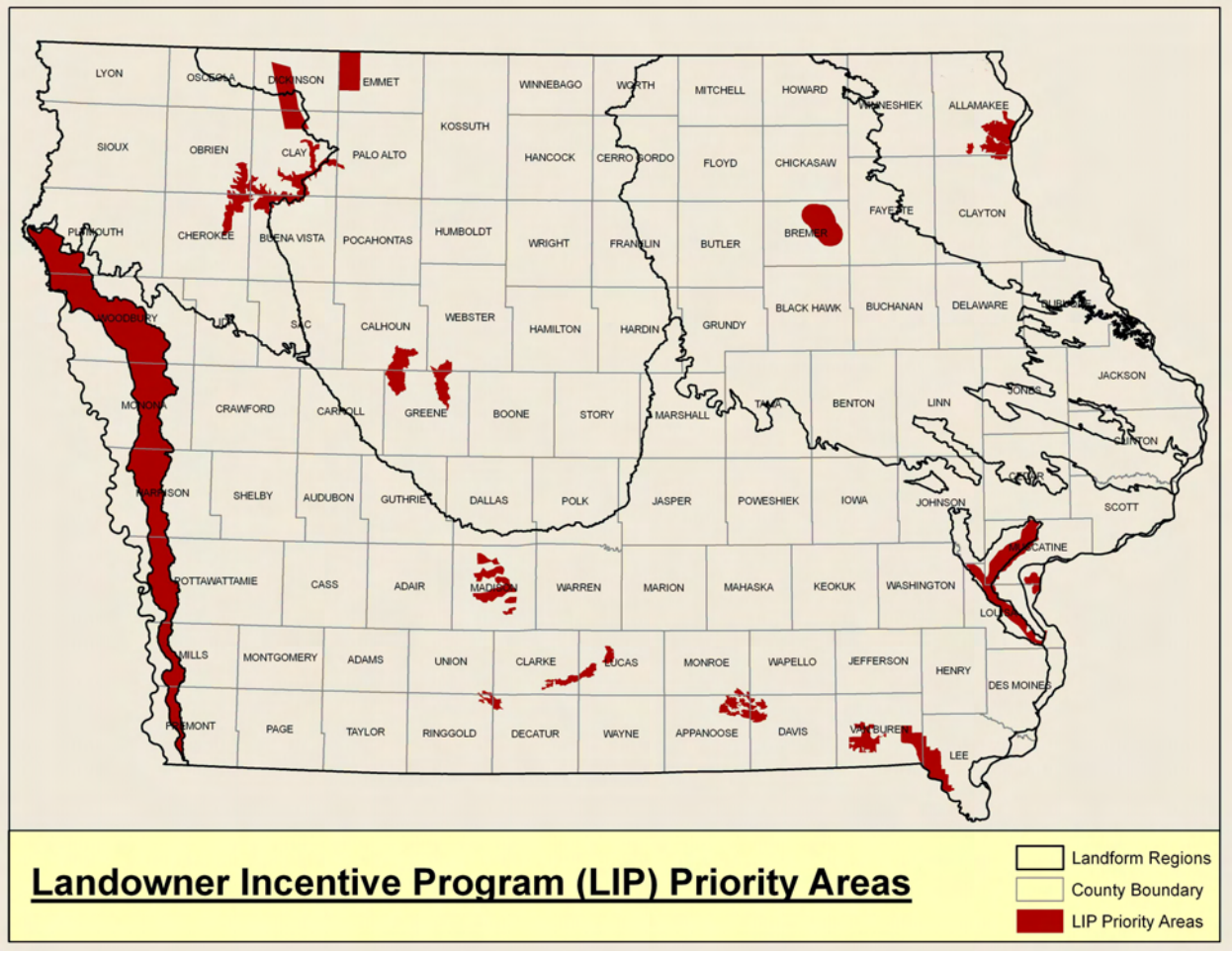
The **Prairie Pothole Joint Venture** of the North American Waterfowl Management Plan is an effort by government agencies and conservation organizations to protect and restore waterfowl habitat within the Prairie Pothole Region of the United States and Canada. Existing and restorable wetland complexes within the Prairie Pothole Region of Iowa have been identified and are shown on Map 8-9. Although initially targeted at waterfowl species, emphasis within the Prairie Pothole joint Venture has been extended to nongame species as well. Research sponsored by IDNR and Iowa State University has demonstrated that a variety of birds and other SGCN have successfully re-colonized these restored habitats.

Map 8-9. Prairie Pothole Joint Venture Priority Wetland Complexes



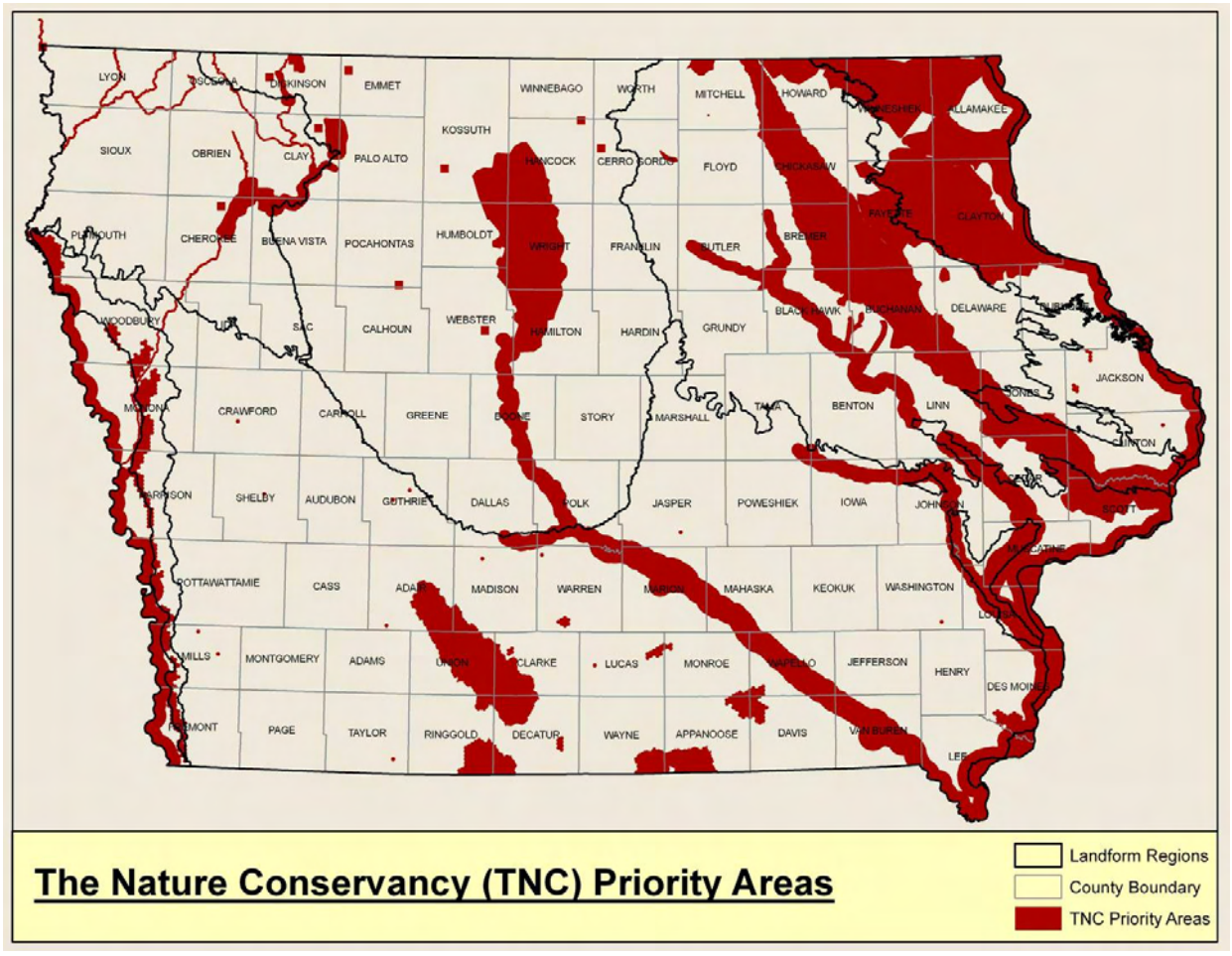
The **Landowner Incentive Program** (LIP) was designed to protect and restore habitat for state and federally listed endangered and threatened plant and animal species on private lands (Map 8-10). The program provided financial incentives and educational materials to private landowners willing to participate in the program. Scientists knowledgeable about Iowa's Threatened and Endangered species established site priorities. The identified sites include known and potential habitats for endangered and threatened species. Although LIP was discontinued and program work was completed in Iowa in 2010, this map layer is considered important in determining current and future Wildlife Action Plan priorities, because habitat work in these areas would benefit listed species and those SGCN that utilize similar habitats.

Map 8-10. Landowner Incentive Program Site Priorities



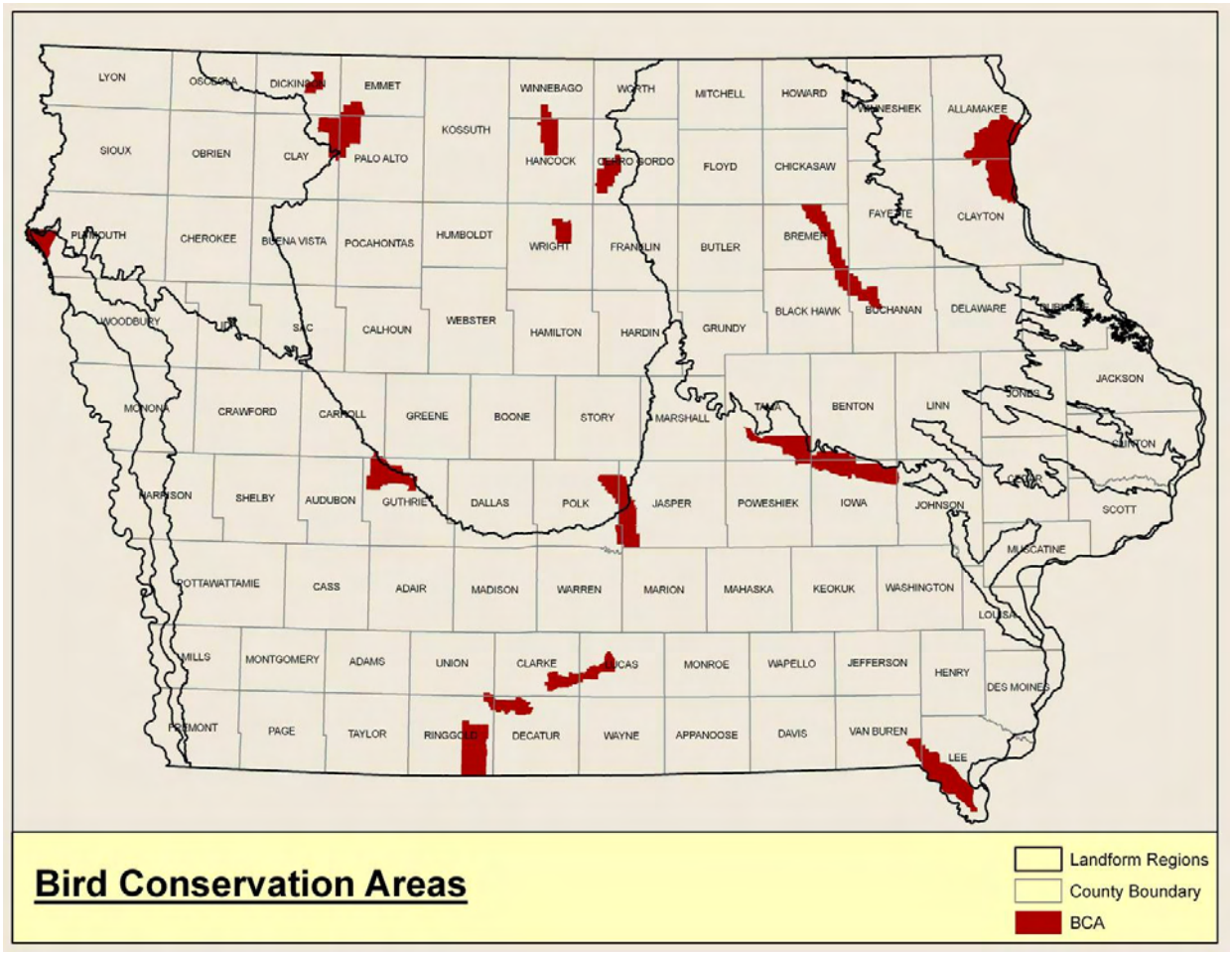
The Nature Conservancy's (TNC) Priority Conservation Areas designate significant natural areas targeted by TNC for conducting biodiversity conservation (Map 8-11). These sites were identified through analyses of plant, animal, and natural community data, along with other information. They also show where this important conservation organization may be willing to partner in conservation actions that may be identified in this Plan. The Nature Conservancy prioritizes where they work based on biodiversity by developing ecoregional plans which cross state boundaries. Iowa is made up of a portion of three ecoregions - the central tallgrass prairie, the praire forest border, and the northern tallgrass prairie. The 6 TNC priority areas are the landscapes that represent the highest amount of biodiversity in Iowa in that particular ecoregion. TNC has also identified portfolio sites that don't necessarily fall within a project area, but that are critical for protection due to their biodiversity.

Map 8-11. The Nature Conservancy's Priority Conservation Areas



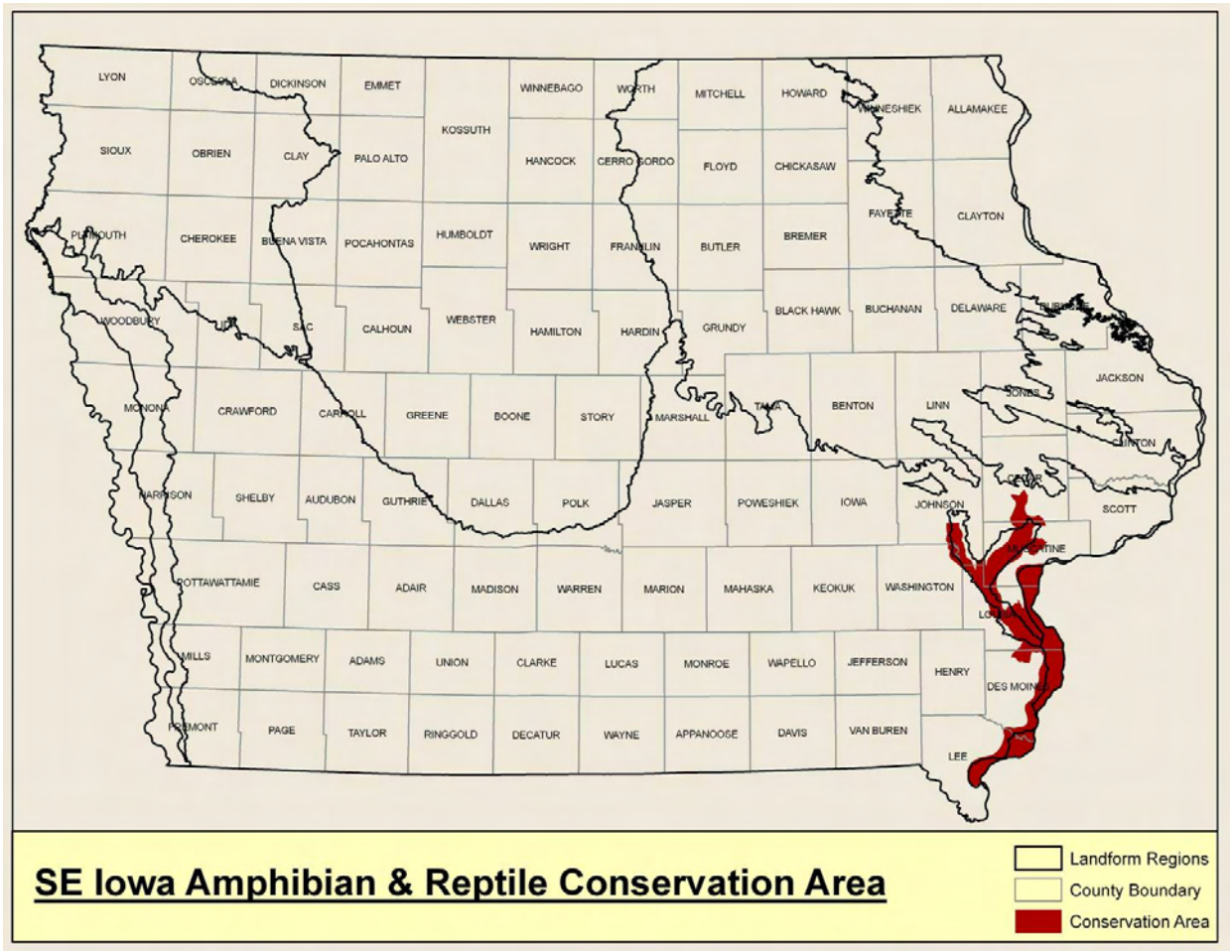
Bird Conservation Areas (Map 8-12) have been designated by IDNR as significant habitat complexes for birds generally following guidelines established by Partners-in-Flight. They are areas of 10,000 acres or more made up of a core area of permanently protected natural habitat surrounded by a matrix of public and private natural lands. This concept is backed by research that suggests viable bird populations require conservation efforts at a landscape-oriented level. While targeted specifically at birds, large tracts of natural habitat such as these have been identified throughout this Plan as providing significant habitat protection and restoration potential for SGCN.

Map 8-12. Existing Bird Conservation Areas



Iowa dedicated the nation's first-ever Amphibian and Reptile Conservation Area in 2007. **The Southeast Iowa Amphibian and Reptile Conservation Area** (ARCA) includes public and private lands in Iowa's Mississippi Alluvial Plain. Modeled on the Bird Conservation Area concept (see Map 8-12), it spans approximately 470,000 acres. The area's diverse features—including riverbeds, grasslands, rock outcrops, streams, ponds and ephemeral wetlands—provide habitat for many species.

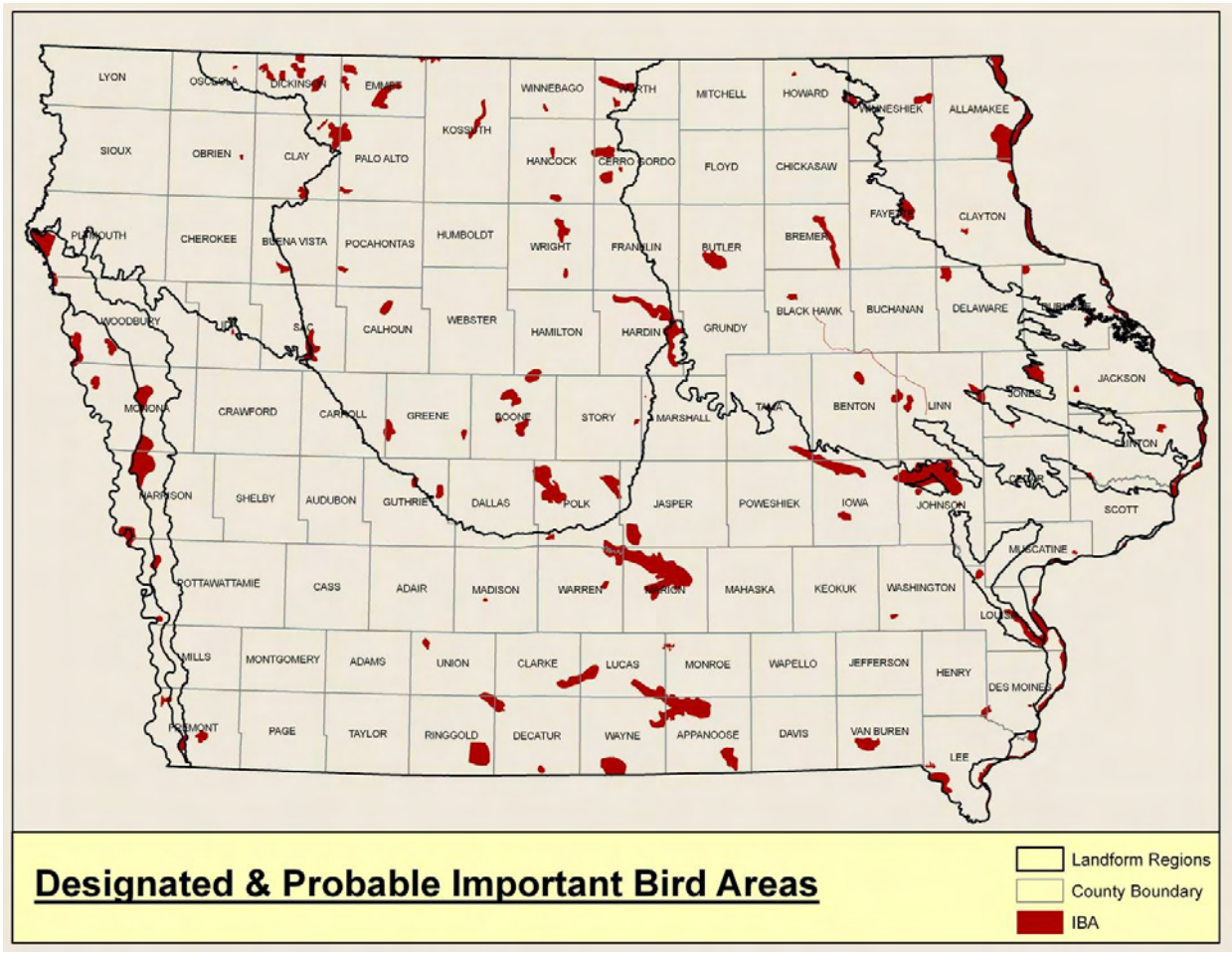
Map 8-13. Amphibian and Reptile Conservation Area



Iowa Audubon's Important Bird Areas (IBA) Program is a citizen-led, science-based and data-driven bird conservation initiative. Phase I of this long-term effort is the identification, recognition and prioritization of habitats that support the most seriously declining species of birds. A State IBA Technical Committee evaluated all data received on a habitat-by-habitat basis, and then voted to confer IBA recognition when criteria were met. Habitats that meet criteria are considered to be the most essential habitats. A total of 70 IBA's in 55 counties have been officially recognized in Iowa (Map 8-14) and 130 additional habitats have been nominated

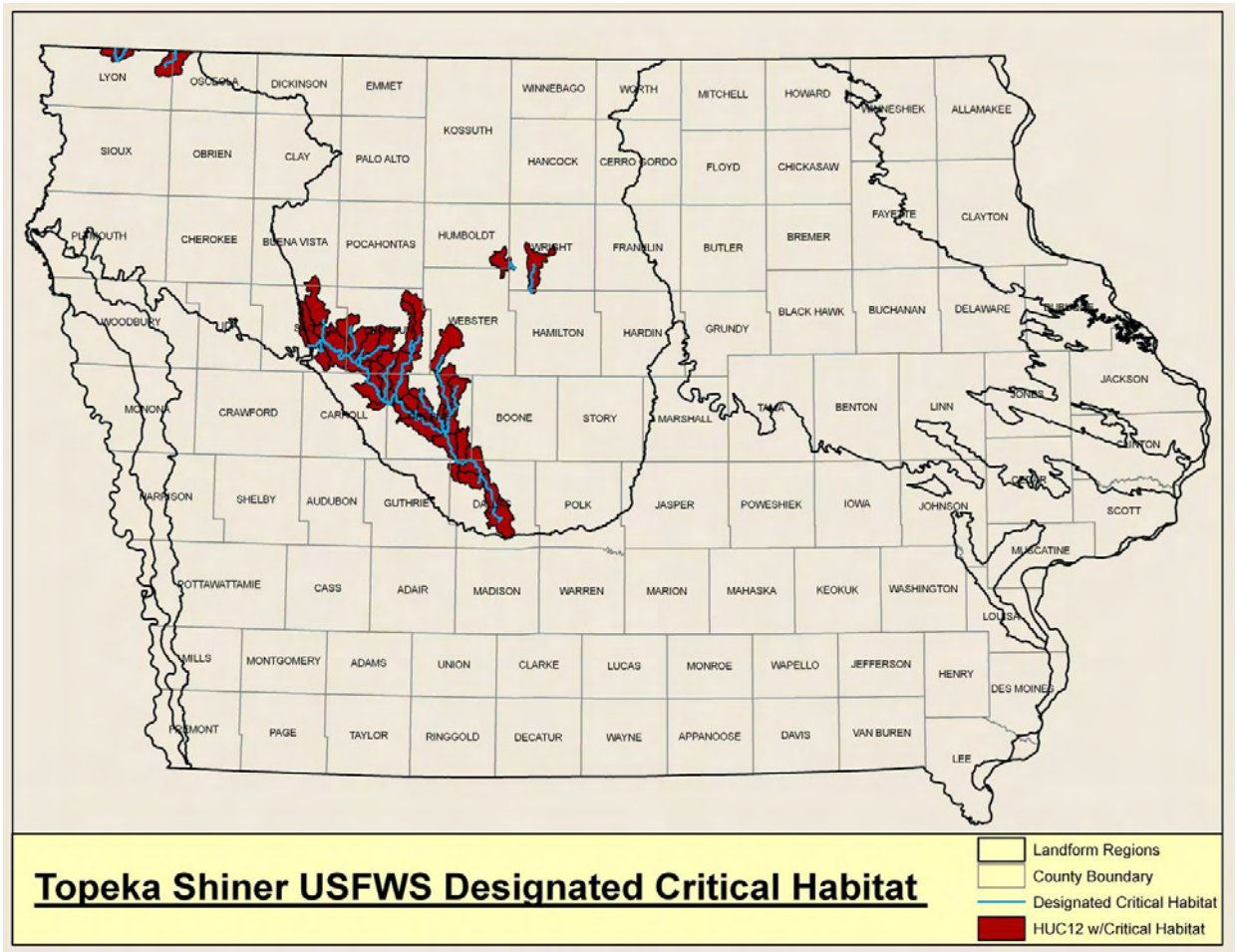
Phase 2 of the IBA Program is long-term monitoring of bird populations and habitat conditions, and organizing education programs at designated IBA sites where appropriate. Phase 3 is working with landowners and land managers to develop and implement long-term conservation plans to protect, restore, enhance and manage IBAs according to their environmental threats and conservation needs.

Map 8-14. Iowa Audubon's Important Bird Areas



The **Topeka Shiner**, *Notropis topeka*, is a federally listed threatened species of minnow. Map 8-15 shows known and potential critical habitat for Topeka Shiners in Iowa. This habitat is essential for the conservation of the Topeka Shiner and may require special management and protection. All indicated areas designated as critical habitat are occupied by the species or are short segments that provide critical links between habitats. An area is designated as critical habitat through the federal regulatory process. The designation does not set up a preserve or refuge and has no specific regulatory impact on landowners' actions on lands that do not involve federal agency funds, authorization, or permits. Although this map designates critical habitat for only a single species, it can be used to help set priorities for conservation actions in this part of the state.

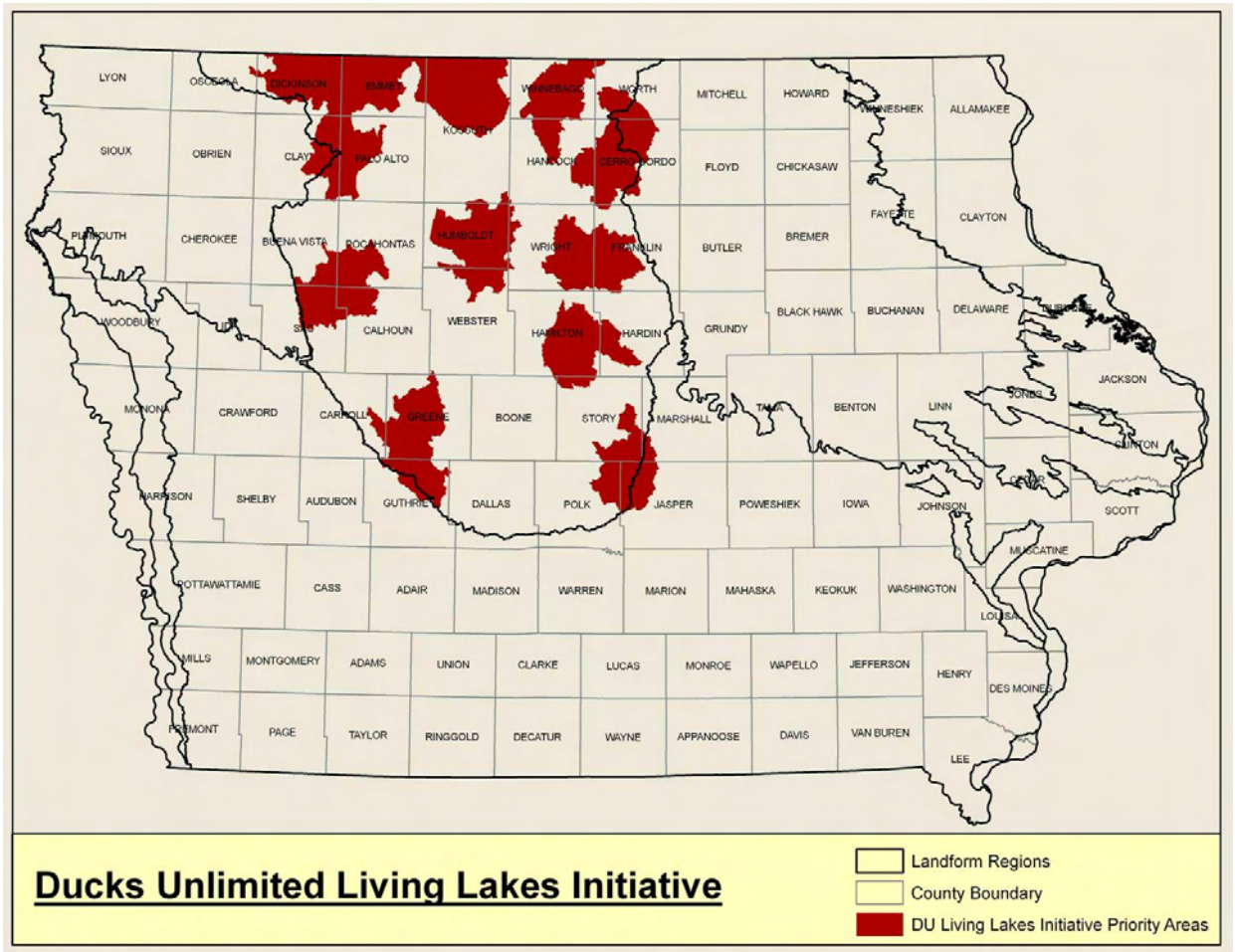
Map 8-15. Topeka Shiner Critical Habitat



Ducks Unlimited Living Lakes Initiative Emphasis Areas is an effort to provide high-quality feeding and resting areas for migratory birds as they cross the intensively farmed Des Moines lobe. Research suggests migrating waterfowl are losing weight as they cross the Upper Midwest because of the lack of adequate food and they arrive on their Canadian breeding grounds in poor condition for nesting. This proposal would provide 3,000 - 5,000 acre wetland complexes at less than 75-mile intervals so that birds can move at a more leisurely pace and maintain their body condition.

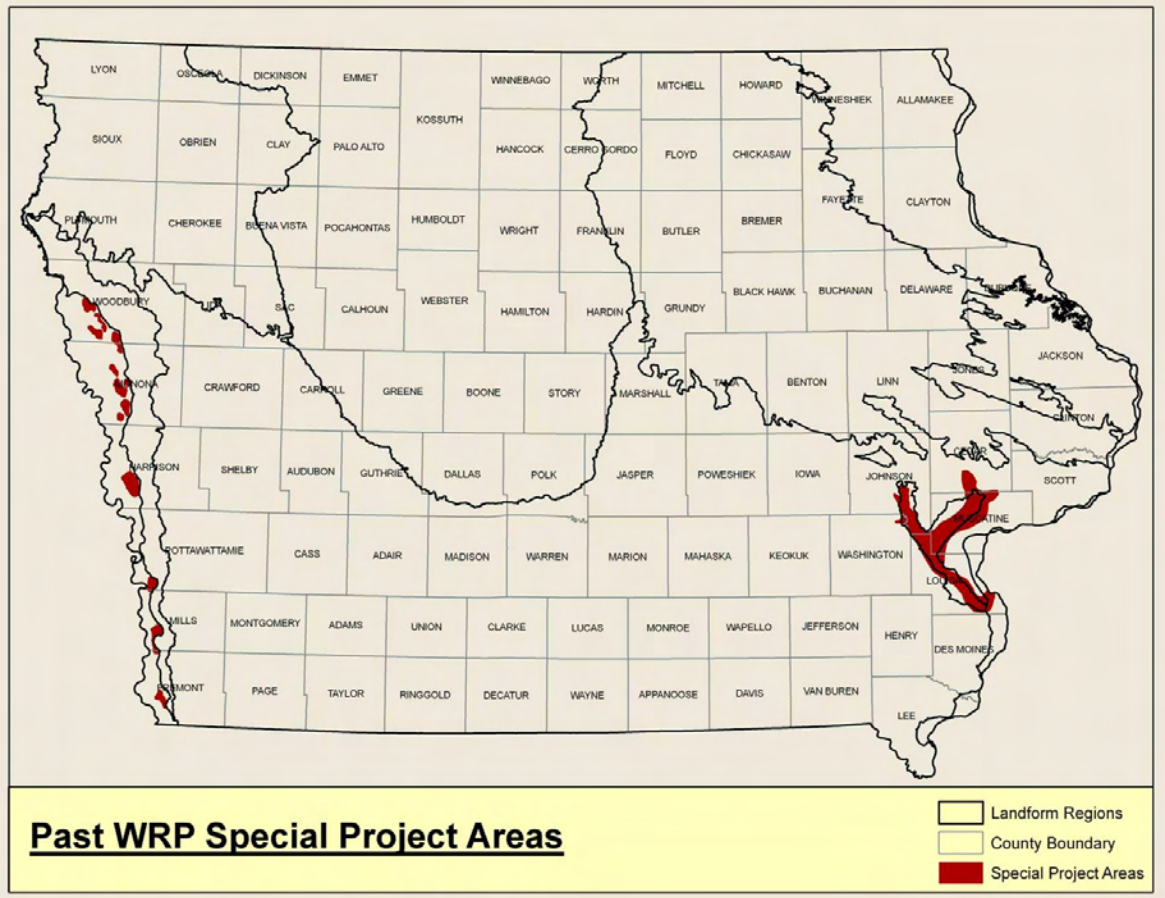
The Emphasis Areas were defined in order to concentrate delivery into smaller geographic scopes and make much wiser conservation investments, rather than a traditional "shotgun approach" to habitat conservation. Iowa's shallow lakes monitoring efforts are a vital component of assessing before & after conditions to illustrate that these degraded systems can be "brought back to life".

Map 8-16. Ducks Unlimited Living Lakes Initiative Emphasis Areas



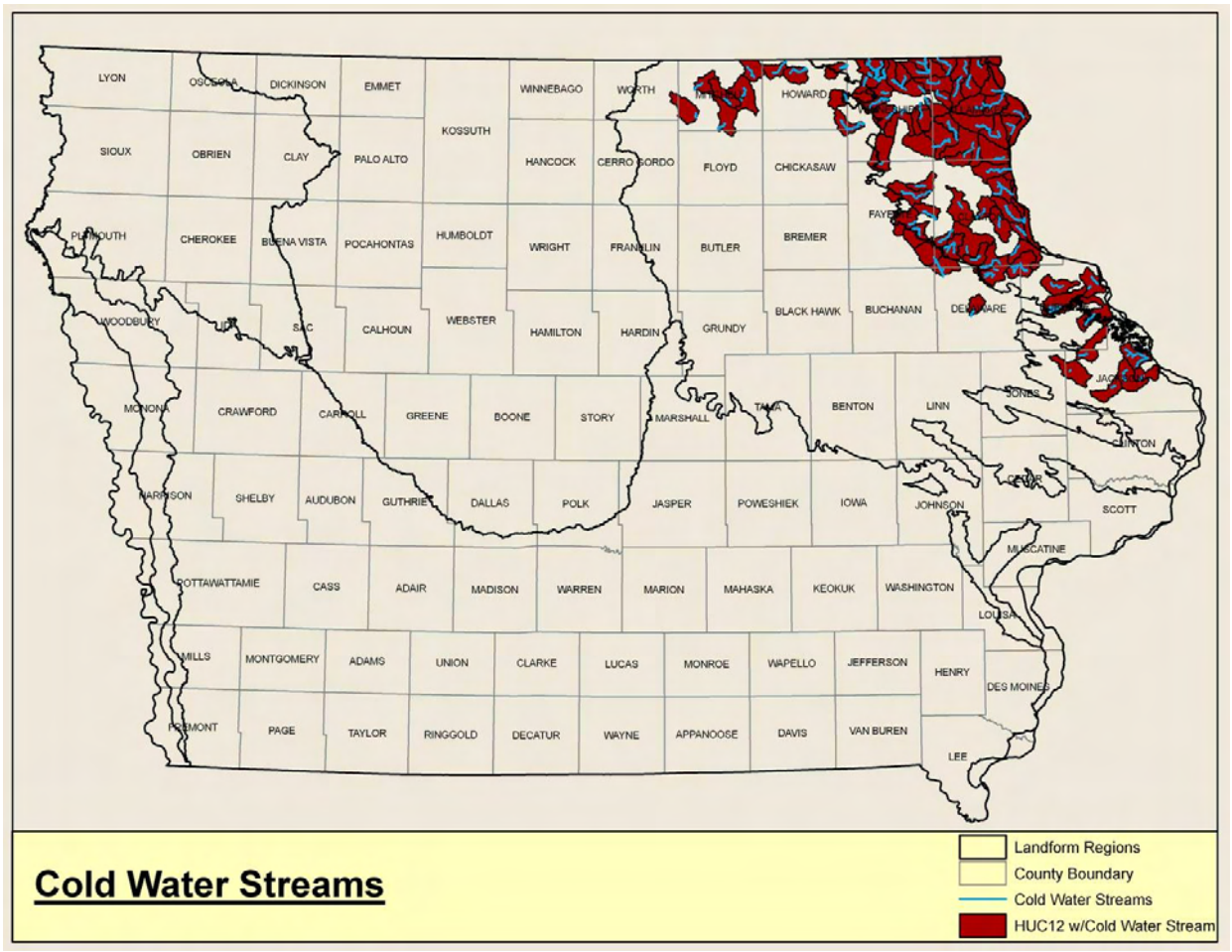
Major flooding that covered Iowa and the Midwest in 1993 led to the passage of the Federal **Wetland Reserve** Act designed to get development and agriculture out of areas prone to flood and return them to their original wetland condition. IDNR, in cooperation with NRCS and NGO partners have been able to acquire permanent easements on 100,000 acres in Iowa. Map 8-17 identifies areas IDNR has worked with landowners to enroll lands in WRP and acquire their residual value so that these lands could be managed for wildlife.

Map 8-17. Past Wetland Reserve Program Special Project Areas



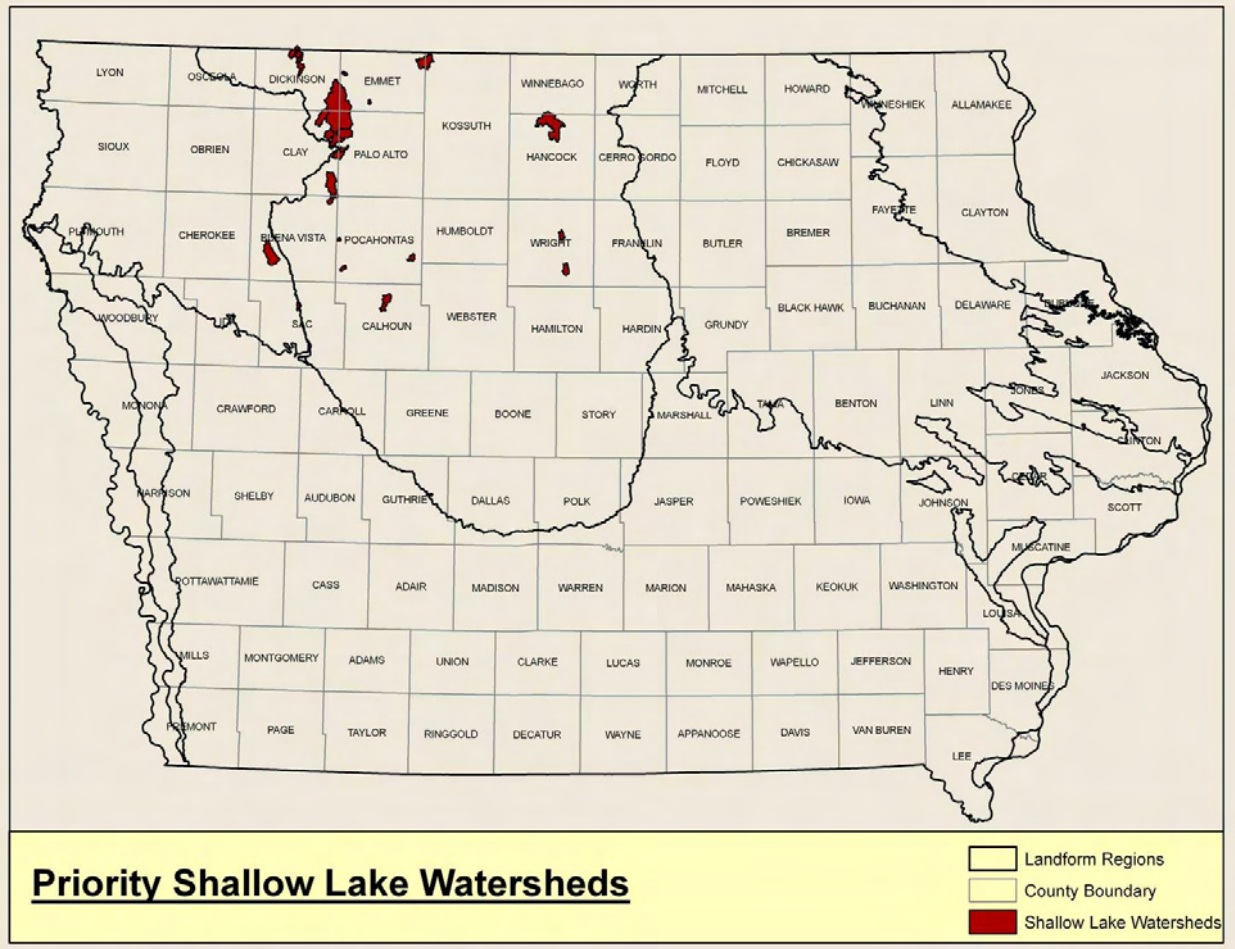
The Drifltess Area covers over 16,000 square miles across Northeast Iowa, Southwest Wisconsin, Southeast Minnesota and Northwest Illinois. The area escaped coverage by glacial drifts which covered much of the upper Midwest during the latter part of the Pleistocene epoch. Due to its unique karst geology characterized by sinkholes, caves and springs, the Driftless Area supports a high concentration of spring-fed, regionally significant **coldwater streams**. Coldwater streams are flowing waters with maximum summer water temperatures that are typically below 22 degrees Celsius.

Map 8-18. Watersheds with Coldwater Streams



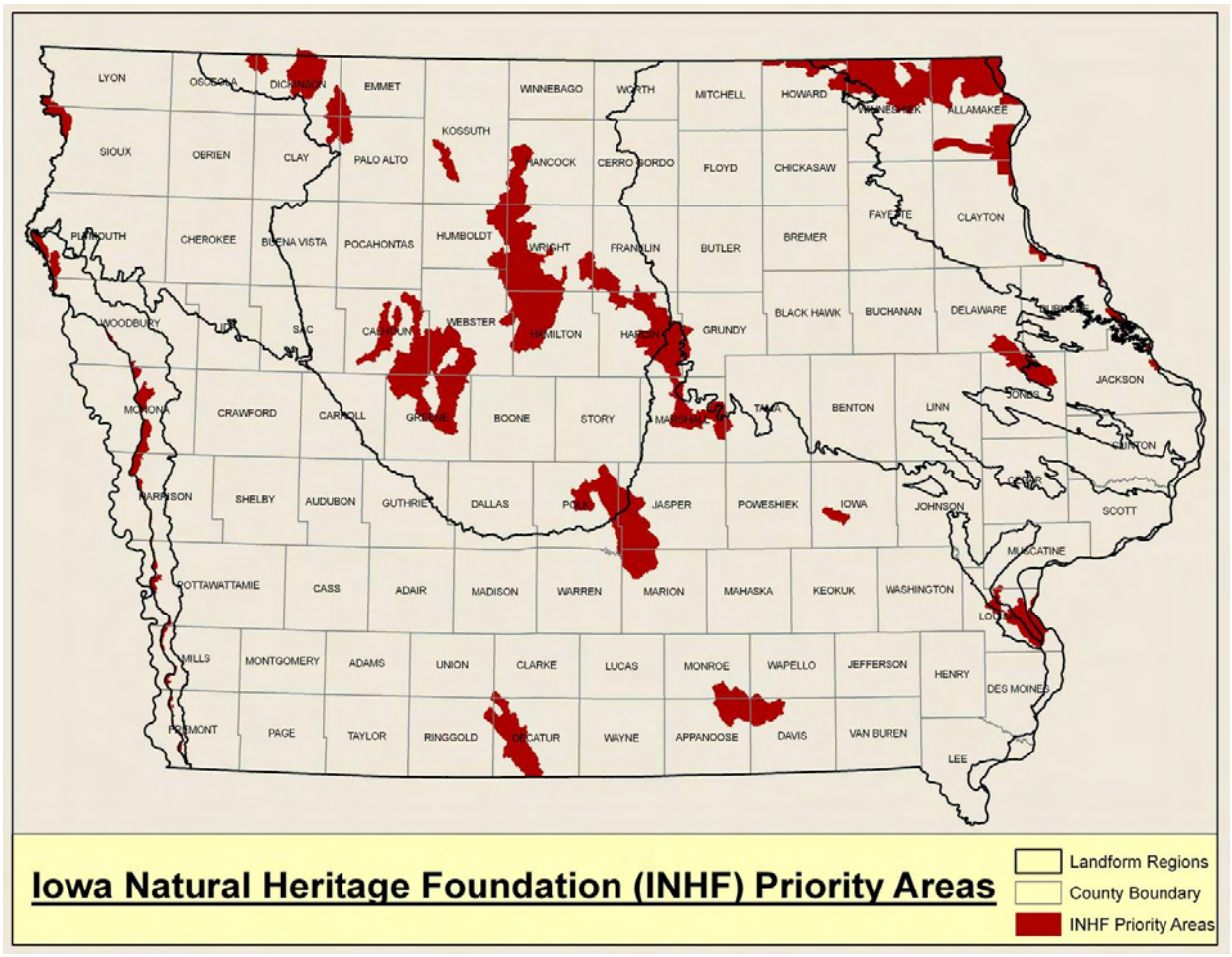
Ducks Unlimited and the Iowa DNR's Wildlife and Fisheries Bureaus established a prioritized list of **shallow lakes** to be renovated over the next ten years. Natural Lakes in Northwest Iowa are mainly characterized as shallow, windswept systems that exhibit poor water quality. Significant watershed changes and the introduction of common carp in the late 1800's have forever made management of these water bodies a challenge. The current focus of the Lake Restoration Program is on shallow lakes that support both fishing and wildlife benefits. In addition, there is an emphasis on shallow systems above important natural lakes.

Map 8-19. Priority Shallow Lake Watersheds



The **Iowa Natural Heritage Foundation** (INHF) is an accredited land trust. INHF is a member-supported organization and its priorities include protecting priority lands, connecting natural landscapes and natural corridors, restoring natural areas, and engaging Iowans with Iowa's natural heritage.

Map 8-20. Iowa Natural Heritage Foundation Priorities

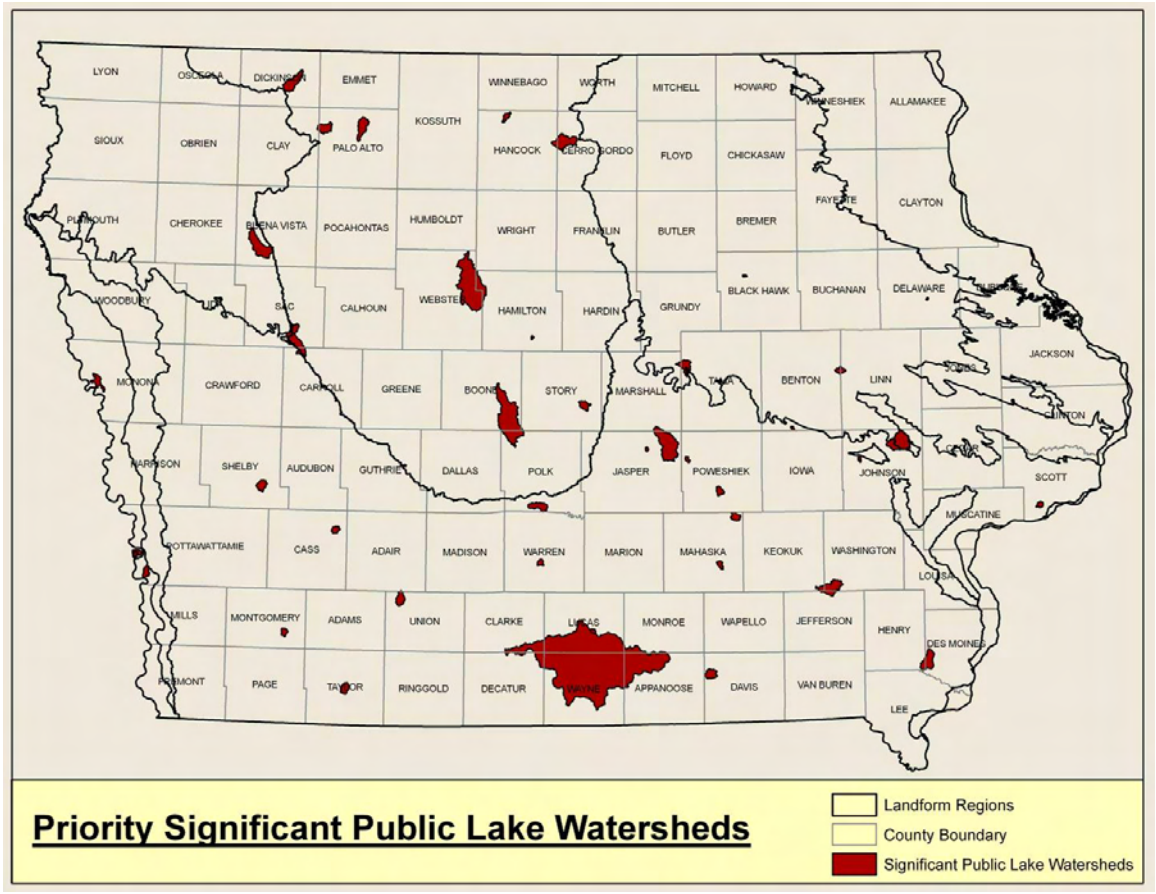


Section 314 (a) (2) of the federal Clean Water Act of 1987 requires each state to include in its biennial Section 305 (b) report specific information on the water quality conditions and trends of the state's "**significant, publicly-owned lakes**," as well as a description of the state's lake protection and restoration programs. In Iowa, "significant, publicly-owned lakes" are defined as those publicly-owned lakes that meet all of the following criteria:

• are maintained principally for public use;
• are capable of supporting fish stocks of at least 200 pounds per acre;
• have a surface water area of at least 10 acres;
• have a watershed to lake surface area ratio of less than 200:1;
• are not shallow marsh-like lakes, federal flood control impoundments, or used solely as water supply reservoirs.

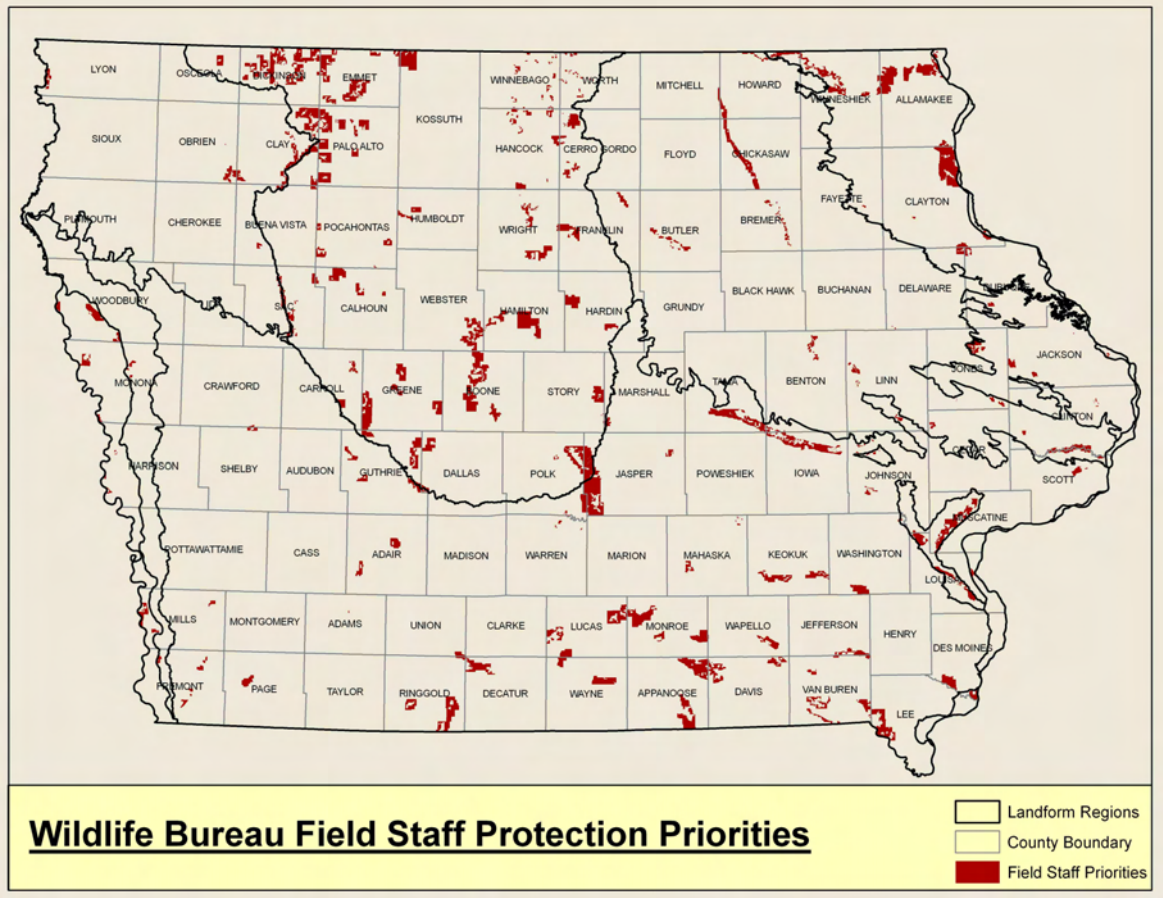
As such, the significant, publicly-owned lakes (SPOLs) represent a subset of the Iowa's approximately 5,400 lakes, ponds, and reservoirs.

Map 8-21. Watersheds which Contain Significant Publicly Owned Lakes



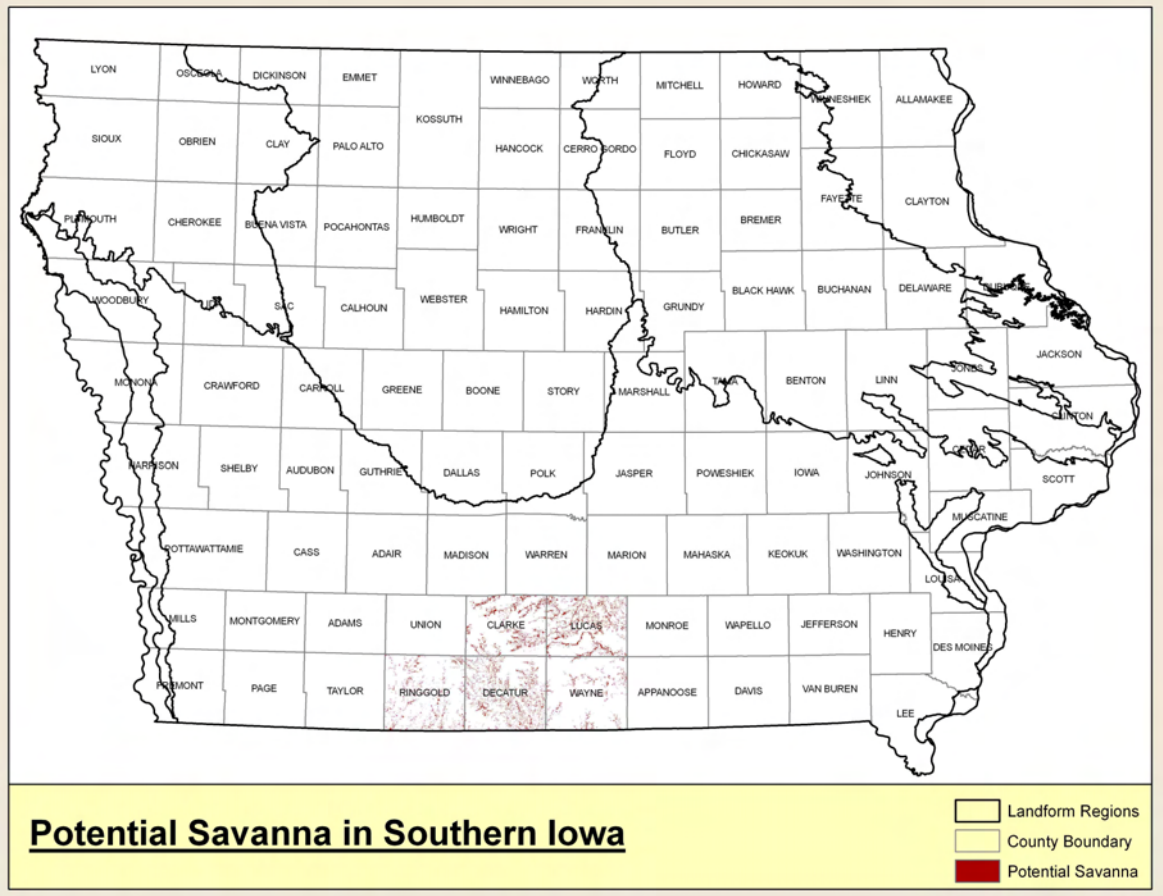
As the importance of habitat conservation on a landscape scale has become increasingly apparent, the IDNR's Wildlife Bureau has placed an emphasis on the creation and maintenance of habitat complexes. This serves to provide core areas for wildlife to reproduce and maintain their populations and decreases the threats caused to populations by habitat fragmentation. With this in mind, in the mid-1990s the wildlife bureau field staff identified areas which serve as important habitat and are important to maintain as habitat, and also areas which would be most beneficial to wildlife populations if they could be restored to habitat through voluntary habitat improvement programs (such as Farm Bill conservation programs) or through easements, or acquisition from willing sellers. This is valuable information as it represents the habitat value assigned to individual areas by those who are intimately familiar with their local landscape.

Map 8-22. Priorities for habitat conservation identified by Wildlife Bureau field staff



Savannah restoration potential was assessed within a 5-county area in southern Iowa by the US Fish and Wildlife Service's Partners for Fish and Wildlife Program. The assessment was based upon soil type and current land cover type. This map is used by conservation partners in southern Iowa to prioritize savanna restoration work.

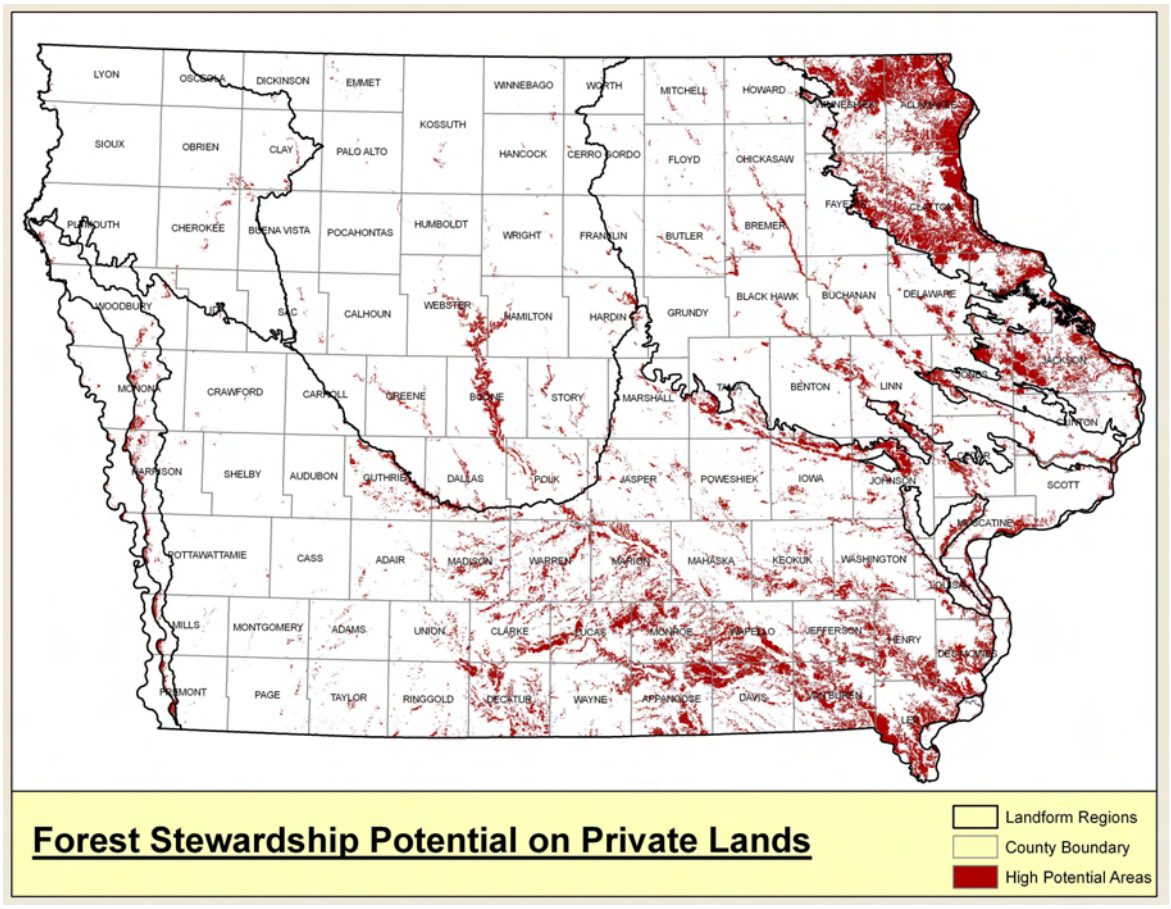
Map 8-23. Savanna restoration potential



The **Forest Stewardship** Spatial Analysis Project (a partnership between the U.S. Forest Service and the states) identified 12 factors which help identify the "Stewardship potential" of a given piece of land. The factors were differentiated into two groups: resource potential and resource threats.

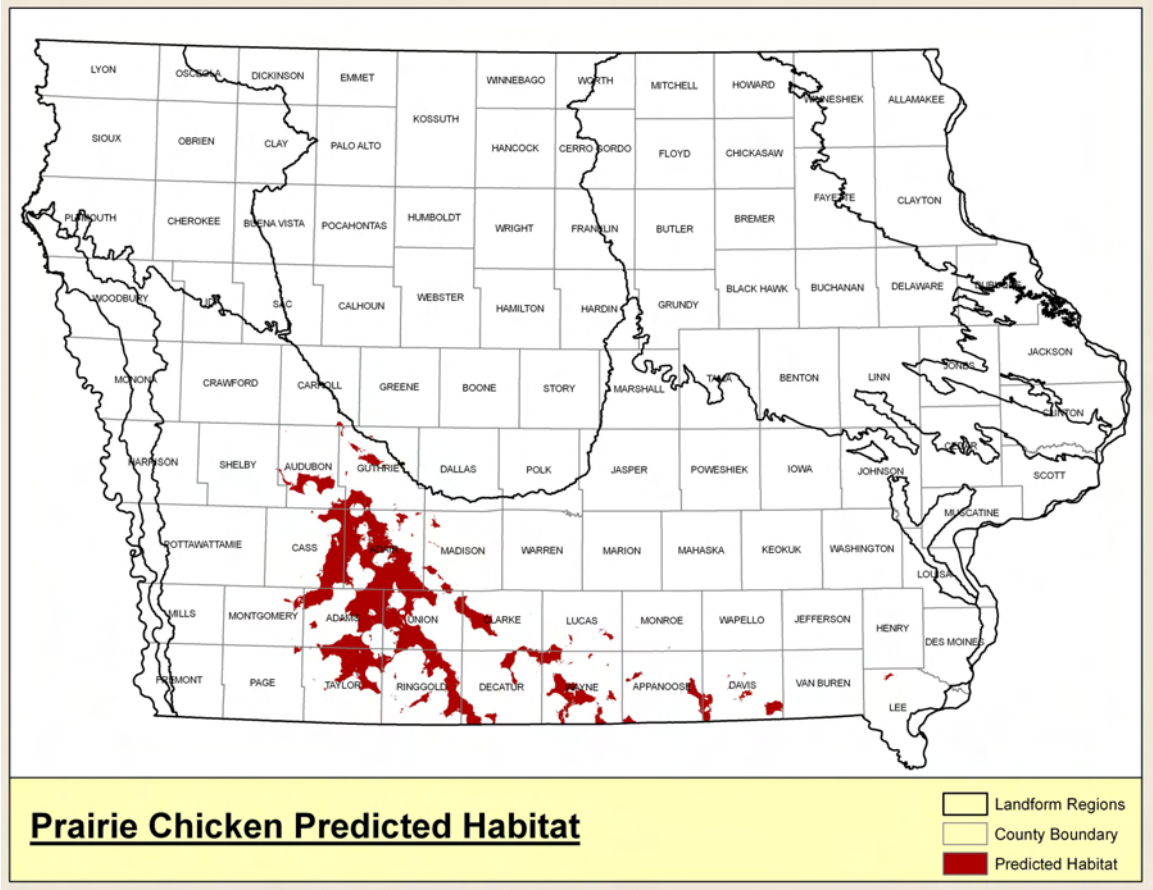
Resource Potential Factors	**Resource Threat Factors**
Riparian Zones	Forest Health (Pest/Disease Risk)
Priority Watersheds	Development Level
Forest Patch Size	Wildfire Assessment
Natural Heritage Data (Forest Wildlife)	
Public Drinking Water Supply Sources (Priority Watersheds)	**Iowa identified 3 additional resource potential factors:**
Private Forest Lands	Forest Soils
Proximity to Public Lands	Forested Landscapes
Wetlands	Historic Forest
Topographic Slope	

Map 8-24. Forest stewardship potential on private lands



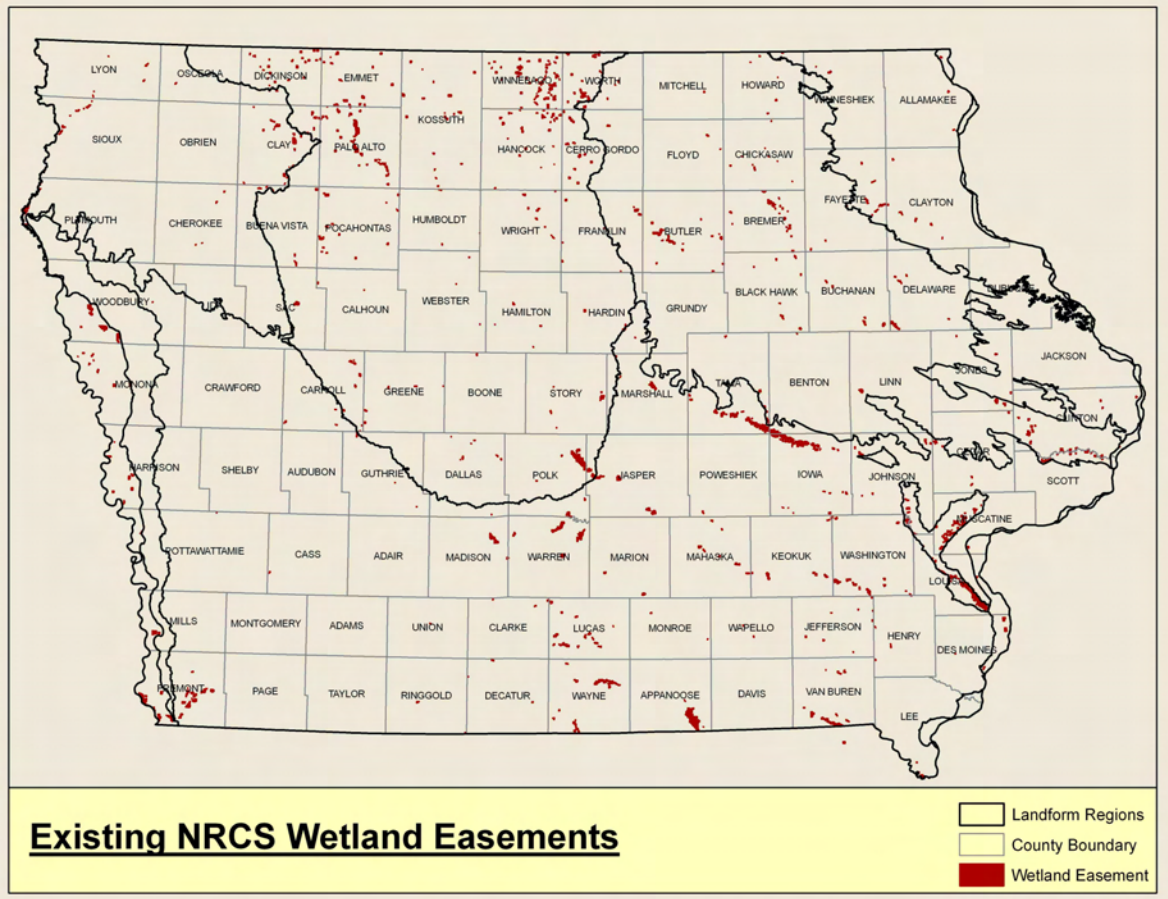
The U.S. Fish and Wildlife Service developed a model for predicting suitable **habitat for the Greater Prairie-Chicken**. Landscape suitability was mapped by applying a model developed for Northwest Minnesota to the 2001 National Land Cover Data for Iowa. Logistic regression was used to compare landscape characteristics between booming grounds and random sites. Map 8-25 depicts only the highest level of suitability modeled. The model is based on the assumption that areas classified as hayland are equivalent to grassland habitat. In addition to providing information about the Greater Prairie-Chicken, this map is included as a representation of the location of mid-grass habitat in amounts signifigant enough to support grassland species more generally.

Map 8-25. Prairie chicken predicted habitat



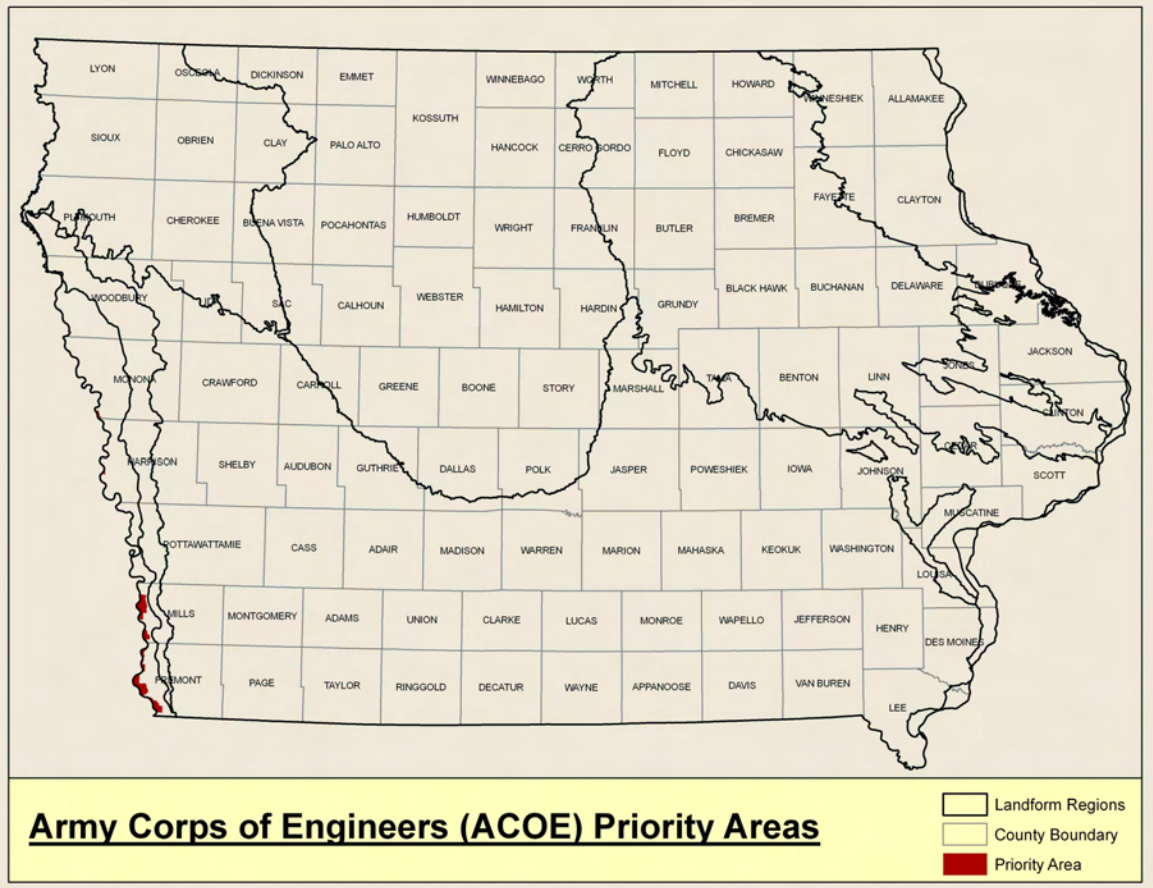
The USDA Wetlands Reserve Program (WRP), Emergency Wetlands Reserve Program and a few other wetlands restoration programs have helped slow the loss of wetlands in Iowa. Wetlands restoration is focused in the 35 county area in north central Iowa called the Prairie Pothole area, and along river and stream corridors throughout the state. Map 8-26 depicts wetland conservation easements.

Map 8-26. Natural Resources Conservation Service wetland easements



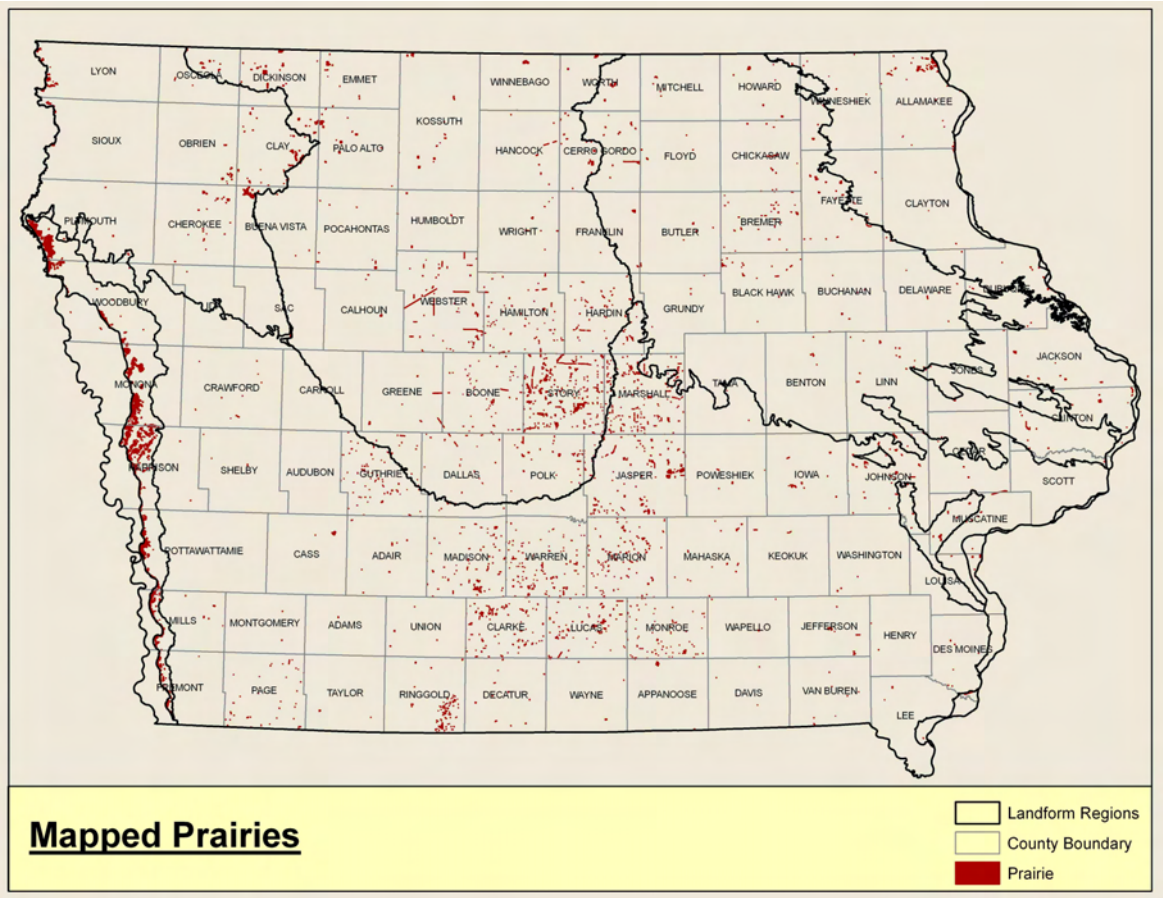
On the Iowa portion of the Missouri River, there is an authorization to restore 20% of the habitat lost as a result of the **U.S. Army Corps of Engineers** (USACE) Bank Stabilization and Navigation Project that occurred on the river. These mitigation areas are managed by the IDNR as part of a formal agreement with the USACE due to impacts on Missouri River floodplain wetlands from USACE activities.

Map 8-27. U.S. Army Corps of Engineers mitigation areas



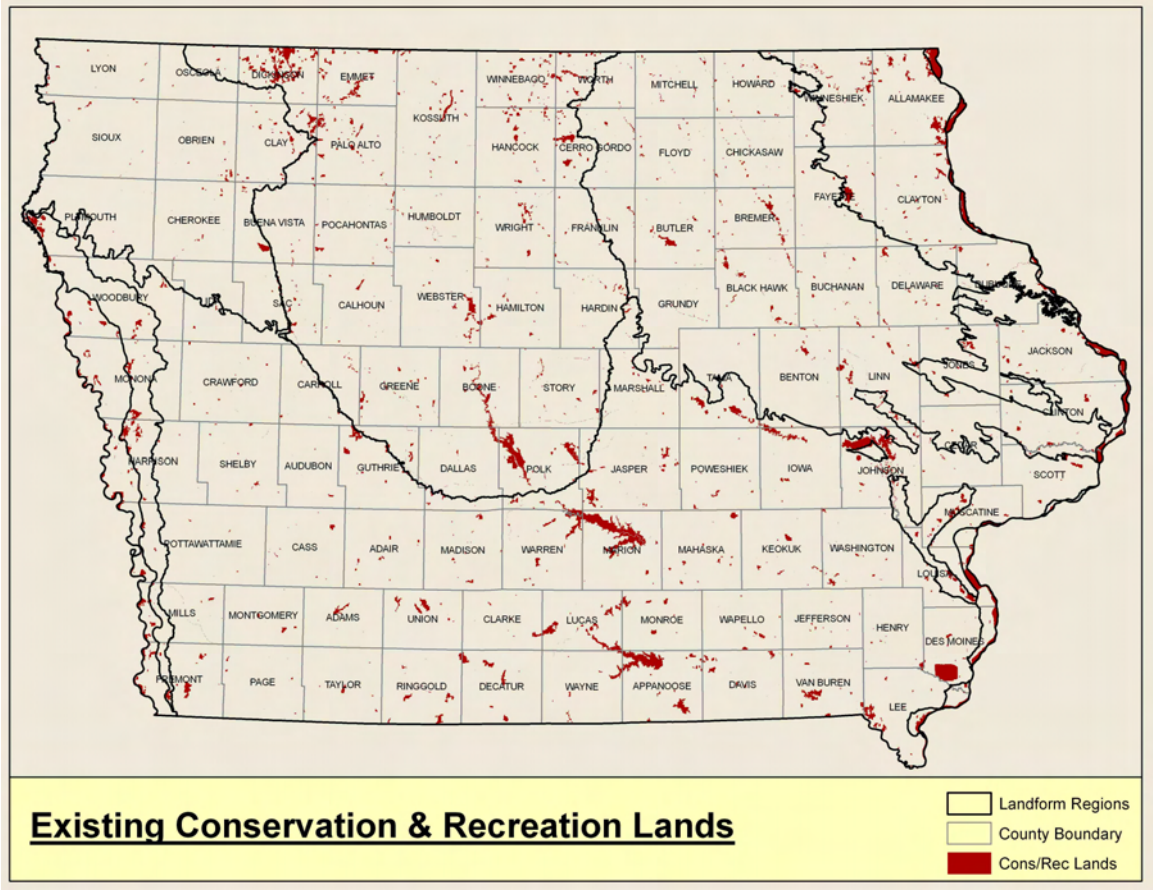
The DNR maintains a map of **Prairie** that includes both remnant and restored prairies of varying quality. NOTE: the size of each prairie mapped is smaller than it appears on the map; these areas are depicted in a larger format to make it possible to view them at the scale of a statewide map.

Map 8-28. Mapped Prairies



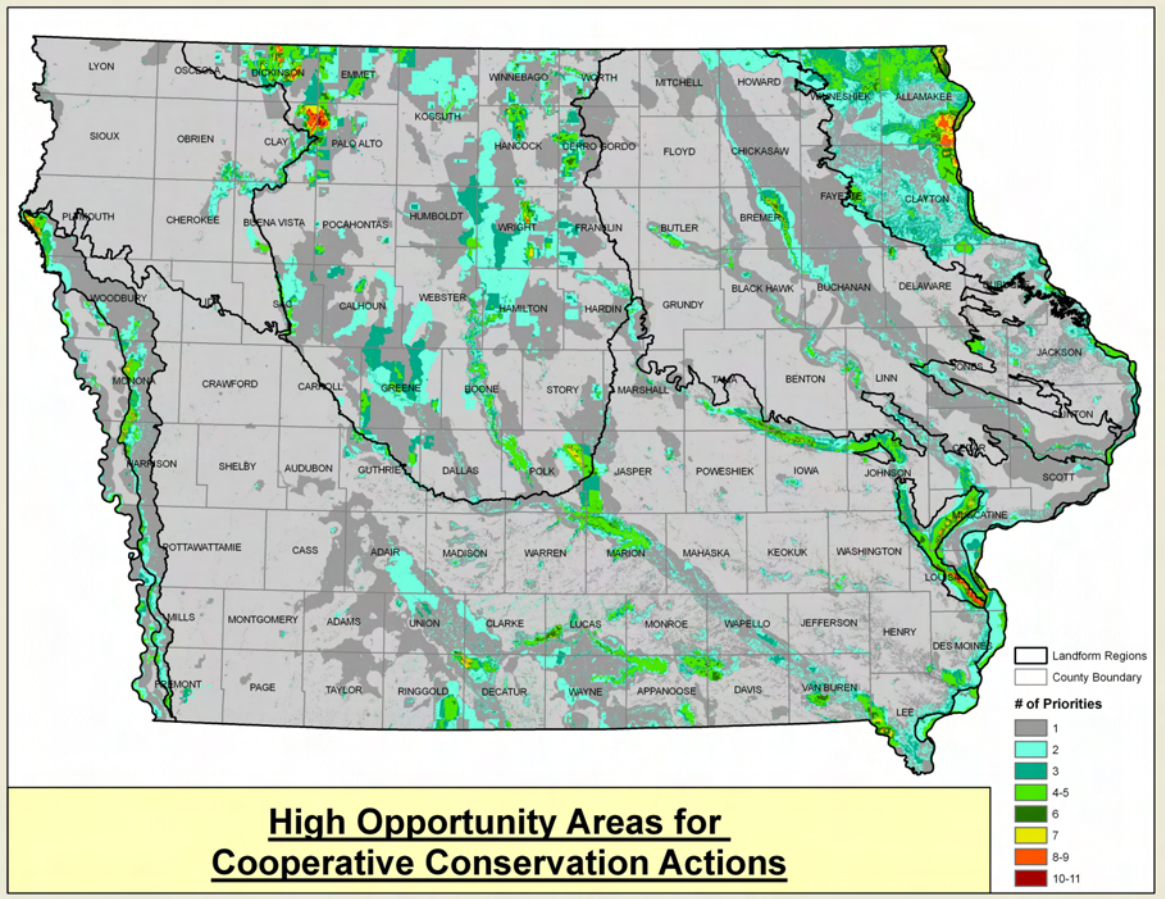
Map 8-29 shows the extent of publicly-owned lands that are protected for **conservation and recreation purposes**. These lands are owned by a variety of entities including Federal agencies, Iowa DNR, and County Conservation Boards.

Map 8-29. Existing conservation and recreation lands



Maps 8-8 through 8-29 were combined to identify **priority areas for conservation actions** (Map 8-30). The shaded areas on the map indicate areas identified as a priority for action by one or more of the plans referenced above. Darker shading indicates areas where progressively more of the plans have overlapping priorities and indicate where partnering to maximize the effect of resources should be possible.

Map 8-30. High Opportunity Areas for Cooperative Conservation Actions



Goal: Protected habitats will be diverse, representative, native plant communities in large and small blocks on public and privately-owned land and water.

While most terrestrial and aquatic habitat classes occur in every region of the state, certain habitat classes were historically more prevalent in specific landforms. Habitat-oriented conservation actions aimed at SGCN should primarily protect, restore, and enhance native habitats and native SGCN. Priority habitat classes by region are shown in Table 8-1.

Table 8-1. Priority Habitat Classes by Landform.

PRIORITY HABITAT CLASS		
LANDFORM	**TERRESTRIAL**	**AQUATIC**
Northwest Iowa Plains	Herbaceous Warm Season Herbaceous Wetlands	Streams
Des Moines Lobe - Uplands	Herbaceous Warm Season - Herbaceous Wetlands	Natural lakes - Herbaceous Wetlands
Des Moines Lobe - Riparian River Corridors	Deciduous Forest (Uplands) Wet Forest (Floodplains)	Rivers, oxbows
Iowan Surface - Uplands	Herbaceous Warm Season Herbaceous Wetlands	Rivers & Streams
Iowan Surface - Riparian	Wet Forest	Rivers & Streams
Paleozoic Plateau - Slopes	Deciduous Forest Warm Season Herbaceous (Goat prairies)	Cold water streams
Paleozoic Plateau - Riparian	Wet Forest	Oxbows Backwaters
Missouri Alluvial Plain	Wet Forest	Missouri River Channel Oxbows
Loess Hills	Herbaceous Warm Season (northern one-third) Forest (southern two-thirds)	Streams
Southern Iowa Drift Plain	Savanna Warm Season Herbaceous Shrublands	Rivers- streams threatened by straightening & erosion, Ponds, Man-made lakes
Mississippi Alluvial Plain	Wet Forest	Large rivers, Backwaters

Habitat protection and management decision-makers, however, must be realistic in assessing changes that have occurred since pre-settlement times. Many native habitats have been displaced from their original sites. The Loess Hills is a primary example where forests have supplanted the native prairies that were originally maintained by fire. Forest-dwelling wildlife communities have replaced the original prairie species over most of the southern two-thirds of the Hills. Some of these forest birds are also on the list of SGCN. The human

population of western Iowa has embraced the hills in their current condition and many of the forested acres are held privately as wooded home sites. Any attempt to revert the entire Loess Hills back to prairie would likely meet with intense opposition. Concentrating large-scale prairie restoration and management in the northern Loess Hills seems the best approach. Small-scale prairies can be maintained in the southern Hills to provide biodiversity to otherwise primarily wooded habitats.

Management Vision: **Diverse wildlife communities will be developed on public and private lands and waters through the use of adaptive ecological management principles.**

Goal: Wildlife management will be based on science.

Strategies within this vision stress educated partners working together. Conservation actions adopted as part of the IWAP should be based on the best available science. The lack of specific knowledge about the abundance and distribution of SGCN has been mentioned several times (see Chapter 7). Too frequently land management actions are implemented without intent or regard for the possibility of evaluation. Better communication must be developed between wildlife scientists, the staffs of government land management agencies at all levels, public land managers, and private landowners to assure that an adaptive approach is built into land management decisions.

Recreation Vision: **More Iowans will participate in wildlife-associated recreation, and all Iowans will have access to publicly owned recreation areas to enjoy wildlife in its many forms.**

Goal: The number off Iowans participating in wildlife-associated recreation (wildlife viewing, hunting, fishing, photography, hiking, outdoor classrooms, etc.) will increase 50 percent by 2030.

The 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation in Iowa estimates that in 2001 there were 690,000 resident anglers, 236,000 resident hunters, and 1,129,000 resident wildlife watchers six years of age and older in Iowa. Residents who view and utilize the wildlife resource will be more open to protecting that resource. A broad and expanded base of support is needed to help insure that wildlife and habitat management and protection efforts receive adequate funding.

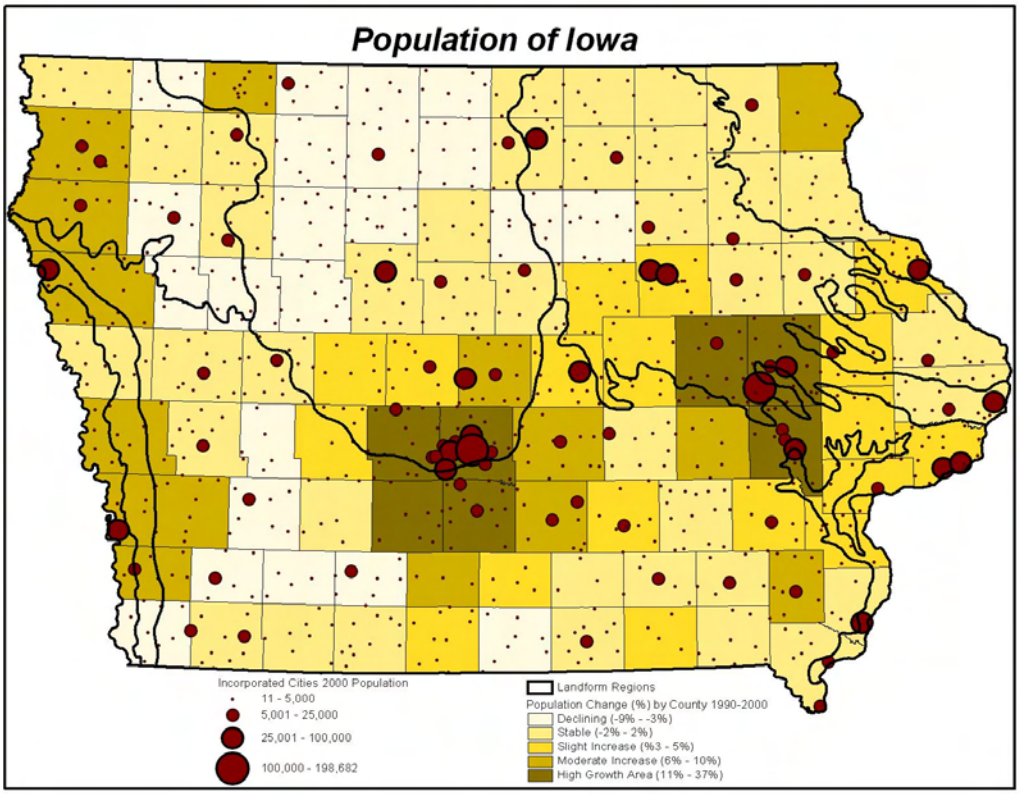
Goal: Wildlife-associated recreation will be available to all Iowans on public lands near their home.

In a culture where time for leisure activities is limited, new participants in wildlife -associated recreation will need to find public lands on which to recreate close to home. While all Iowans deserve access to quality natural areas, the first priority should be given to acquiring and protecting public natural areas close to larger population centers. This will create an appreciation for wildlife-associated recreation among the greatest number of citizens in the early stages of the 25-year effort and generate the support needed completing the Plan. Major population centers in Iowa are shown in Map 8-31. The distribution of existing public lands is shown in Map 8-32.

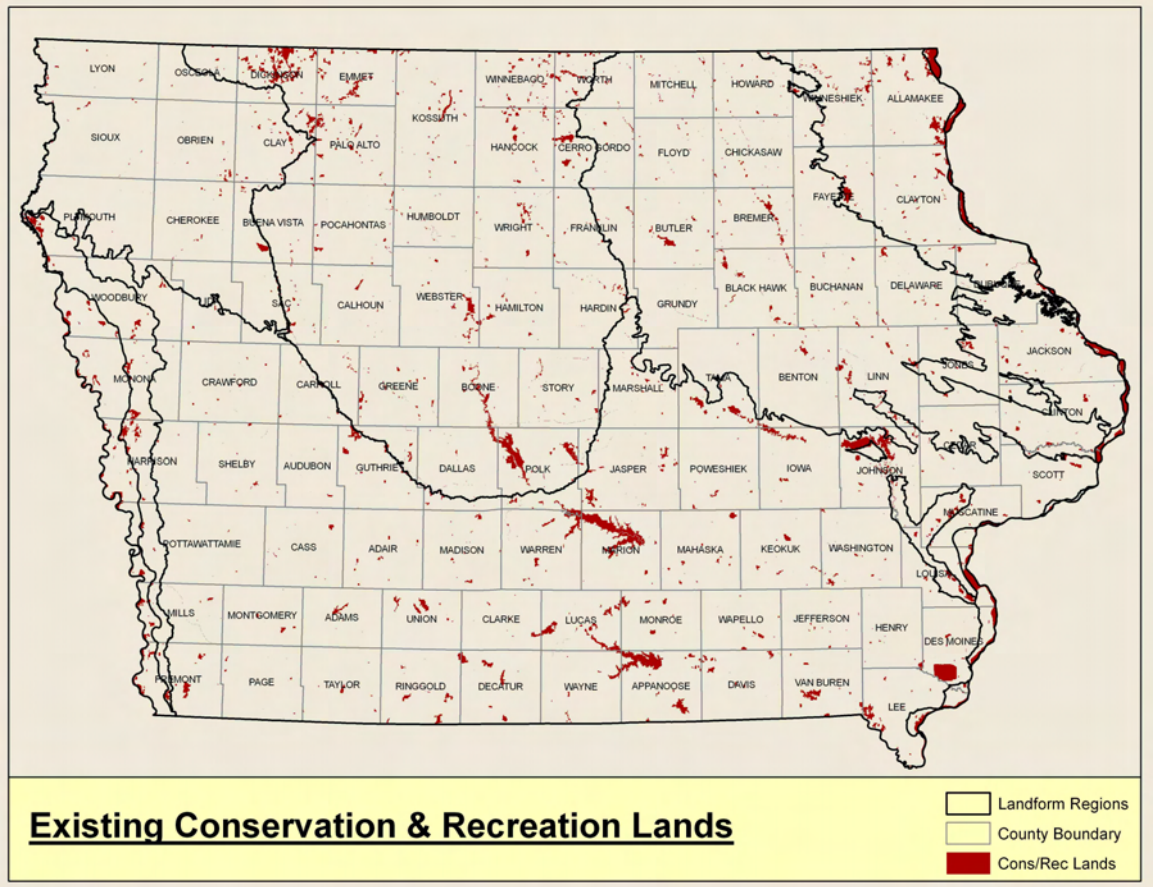
Goal: Increasing wildlife-associated recreation will improve public health.

Priority should be given to promoting the health benefits to young and old of wildlife-associated recreation.

Map 8-31. Distribution of Iowa's Human Population



Map 8-32. Distribution of Existing Public Lands



Education Vision: Iowans will respect wildlife for its many values and they will advocate effectively for conservation of wildlife and wildlife habitats.

Goal: Iowans will understand the relationships between land use, wildlife diversity and abundance, the quality of life for all citizens, and the positive effects wildlife has on Iowa's economy.

The conservation actions proposed to implement this vision incorporate national standards proposed by the International Association of Fish and Wildlife Agencies. Priority should be given to educational programs that effectively reach the most people at the least expense. Electronic communication such as the use of the Internet and television can be used to reach every corner of the state, and include urban and rural residents alike.

Focused messages must be developed to encourage participation in wildlife-associated recreation and to develop support for expanded funding. Targeting first time participants with outdoor skills information will be important.

Funding Vision: **Stable, permanent funding will be dedicated to the management of wildlife at a level adequate to achieve the visions of this plan.**

Goal: Government (Federal, state, and county) and private conservation spending will be increased so that the goals of this Plan are reached by 2030. Funding will be dependable, secure, and appreciated as a powerful economic and social investment.

Of the six vision statements, reaching the Funding Vision goal is the highest priority. None of the other visions can be implemented in anything near the 25-year time frame without increased funding. An estimate of the costs for implementing the IWAP is included in Chapter 10.

No single conservation organization or stakeholder group has the power to attain the necessary funding on their own. An effort comparable to the coalition that has lobbied for Teaming With Wildlife and the Conservation and Reinvestment Act but vastly broadened to include all potential stakeholders will be necessary. A grass roots coalition of wildlife enthusiasts of all types - birdwatchers, bird feeders, hikers, back packers, hunters, anglers, photographers, etc. - is a start, but it should also include local government leaders whose communities stand to benefit from increased recreation revenues and improved quality of life. Only a broad-based coalition will have the strength necessary to obtain funding.

Lobbying must be done at the Federal level to convince Congress to supply basic funding to the states equivalent to the $350 million targeted in the Conservation and Reinvestment Act. Lobbying at the state level will be essential to obtain whatever level of non-Federal matching funds will be mandated by Congress.