Iowa's Bird Conservation Area Program: History, Current Status, Future

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INTRODUCTION

In March 2010, former Wildlife Diversity Program (WDP) Coordinator, Doug Harr, provided an update to Wildlife Bureau staff of the status of the Bird Conservation Area (BCA) program, how the program began, where it might be going, and then requested input from staff about the program. Several wildlife bureau staff responded and provided valuable input on planning for future BCAs, and six more have since been created. It was also evident from comments received that there is some misunderstanding of what type of area might qualify as a BCA and how this program is benefitting birds. In an effort to better explain this program and its benefits and to demonstrate how the BCA program fits into the Wildlife Bureau's strategic planning and implementation of Iowa's Wildlife Action Plan, a more detailed account of Iowa's BCA program is being provided within this Guidance Document.

HISTORY

For several decades, significant declines in a large number of species (Herkert 1995, Pashley et al 2000, Walk et al. 2010) of North American birds led to the emergence of national and international initiatives dedicated to conservation of game and nongame birds (Carter et al 2000, Rich et al. 2004). Especially during the 1990s, conservation programs or plans aimed at individual groups of declining birds gathered under the umbrella of the North American Bird Conservation Initiative (NABCI) to conserve "all birds in all habitats." As part of this initiative and in an effort to protect decreasing populations of many Iowa birds, Iowa's Bird Conservation Area (BCA) Program was officially established by the DNR Wildlife Bureau in 2001. The BCA concept was developed in the late 1990s by Wisconsin DNR in cooperation with Partners In Flight Midwest Working Group (a regional coalition of scientists and conservationists that developed bird conservation plans for specific physiographic areas in the Midwest). The original model was specifically created to benefit grassland birds (Figure 1). DNR Wildlife Diversity Program Research Biologist, Lisa Hemesath, and former Wildlife Bureau Chief, Dick Bishop, decided to implement the grassland BCA model, and Iowa became one of the first states to embrace the concept. The concept of the BCA is based on research that suggests that bird populations respond to landscape-level conditions and, therefore, require landscape-oriented conservation efforts (Herkert et al 1996, Sample and Mossman 1997). In brief, a BCA is comprised of a larger landscape of public and private lands at least 10,000 acres in size and contain a "core" area of permanently protected high quality habitat of 2,000 acres in size or 20% of the total BCA acreage. Additionally, each BCA should contain at least 35% land cover of a representative natural cover type (grassland, grassland-wetland, forest, savanna), with scattered parcels of preferred habitat (outside core area) that are a minimum of 40 acres and ideally at least 100 acres to benefit (area sensitive) species that require larger tracts of habitat in which to nest. For instance, the state threatened Henslow's Sparrow requires 40 acres or more of quality grassland to experience adequate nest success (Herkert et al 1996), and areas smaller than this may function as population sinks. The core protected habitat serves to anchor the BCA, and around this are both privately owned and publicly owned lands, which are managed for quality bird habitat - or at least should remain neutral (like row crop agricultural land and large lakes or reservoirs) in its effect on targeted bird species. The original Grassland BCA Model considered row crops and large bodies of water to be neither positive nor negative in their landscape effects on most breeding birds. Each BCA landscape hosts a signature group of birds, many of which are experiencing notable population declines.

In 1999, all Iowa Wildlife Management Biologists were informed of the BCA concept and were asked to nominate sites that they thought might be good candidates for designation within their units. Many sites

originally nominated by the managers were focused on large tracts or complexes (2,000 acres or larger) of public land, especially some of our PPJV complexes, river corridors, and state forest areas. From the original list of 36 sites nominated for BCA status, 12 sites were selected as highest priority. The Excel spreadsheet, *Current & Future BCAs*, is an update of that original list, showing what sites have already been designated as BCAs, those currently in initial planning stages, and those for which future action may yet be taken. The original list was created almost entirely by the Wildlife Management Section. The Wildlife Diversity Program did not have a role in nominating those sites, although WDP staff was directed to initiate a selection process from that original list and then create official BCAs. The result was that the Kellerton Wildlife Management Area became Iowa's first designated BCA in 2001 (initially proposed by WDP Biologist, Lisa Hemesath, for BCA status in 1997), and it was recognized as the first Grassland BCA in the United States.

As the grassland BCA model caught on with state agencies across the Midwest, plans to evaluate the effectiveness of the model were also developed. These monitoring efforts produced information to inform the program as it continued to be implemented (e.g. Winter et al. 2001, Jacobs et al. 2002).

In 2003, it became an Iowa DNR Wildlife Bureau priority to annually designate approximately 2 new BCAs, until there are ~20-25 sites officially recognized or until such time that there are no more candidate sites that fit the BCA model. Since Iowa sits within three Bird Conservation Regions (BCRs), an original priority was to create at least one BCA in each BCR, so that there would be a representative BCA of the landform and bird species that exist in each BCR. This priority was achieved in July 2003 with the dedication of Effigy Mounds-Yellow River (EFMO-YR) Forest BCA, within the Prairie-to-Hardwood Transition BCR. Another high priority was to establish grassland BCAs, particularly because 1) grassland birds represent the bird group declining the fastest (within both United States and Midwest), with 55% of grassland birds significantly declining (NABCI 2009), and because 2) the original BCA model was developed for grassland birds and was based on grassland bird research. Because of feedback provided by DNR wildlife management staff, a new priority has been recently added: to establish at least one BCA in each Wildlife Management Unit. As of November 2015, only two wildlife management units (Maquoketa and Nishnabotna) do not hold a BCA or a portion of a BCA.

Beyond grassland birds, Iowa chose to expand the BCA program to include habitats for forest/woodland and savanna birds, as well. This decision to target forest/woodland areas for BCAs was, to a large degree, based on research derived information that indicated area sensitive forest birds benefitted from the landscape approach of management similar to what was being documented with grassland birds (Herkert et al. 1993). Because much of Iowa's larger blocks of public land are associated with river corridors, emphasis was also placed on establishing riparian corridor BCAs. There is now a substantial amount of research supporting the grassland BCA Model (Sample and Mossman 1997, Winter et al. 2001), and the results of forest bird research and modeling (Norris 1999, Norris et al. 2003, Wilson 2008) provides increasing scientific justification for the forest/woodland BCA, as well. The savanna BCA model and riparian corridor BCA model are yet to be tested for their efficacy.

BCA PRIORITY SITE SELECTION FILTERS

- 20% of BCA to be permanently protected "core" habitat.
- Core area should be contiguous and more rectangular than linear.
- 35% of BCA is representative natural cover type (grassland, grassland-wetland, forest, savanna).
- BCA is primarily land-based and does not include large bodies of water (like reservoirs).
- BCA has strong potential for additional permanent land protection and the boundary can be changed.
- At least one BCA in each Bird Conservation Region.
- At least one BCA in each Wildlife Management Unit.

- Site can be selected for particular GCN bird species (like Greater Prairie-Chicken or Northern Bobwhite) although more likely to be selected for a targeted suite of declining species.

BCA DESIGNATION PROTOCOL

For BCA inclusion, GIS mapping is used to identify landscapes of particular habitats for birds, especially habitats known to support a particular suite of declining birds. Once it is established that an area is a good potential fit for the BCA model, the next step is to contact potential partners in this enterprise and inform them of the BCA possibility and request/encourage their support. With support confirmed, the next step is to create a map of the proposed BCA. Wildlife Diversity staff typically establish the boundary of this map, and a DNR Wildlife GIS Specialist then creates a more official version that includes land cover acreage, land ownership, etc. This map is then provided to DNR staff and partners for their input, and changes are made accordingly. A public meeting is next held to inform the public of this potential BCA and invite their comments. Once there is established support for a BCA, a brochure is created specifically for it. This brochure includes a list of all breeding birds and migrants documented within the BCA boundary, with special designation given to birds of Greatest Conservation Need. The final step of this process is a public dedication of the BCA - at which partners voice their support, and a large wooden BCA sign (specifically created for this BCA) is presented for placement within the BCA. Additional metal (more generic) BCA signs can potentially (not yet done) be added to BCA areas to increase visibility of this area's importance to birds and to encourage bird-watching.

CURRENT STATUS

As of November 2015, 21 BCAs have been designated within 37 counties (Figure 2), and Loess Hills Forest and Loess Hills WMA is in the planning stage to become the next BCA. A *BCA Data* spreadsheet provides detailed information for each designated BCA. The total number of acres within these 21 BCAs currently encompasses 1,365,314 acres, which translates to 3.82% of Iowa's total surface. Within these 21 BCAs, at least 222,803 acres are permanently protected, which is 16.2% (target is 20%) of the total acres within the BCAs. This protected habitat appears to represent over half of all the land the DNR manages, or about 0.62% of Iowa. This high percentage of public land, within a very small percentage of Iowa's total landscape, lends credence to the theory that these BCAs are effectively targeting focal areas for effective bird management, given the assumption that large blocks of permanently protected habitat provides better places for more wildlife species to propagate and survive than does most privately owned land. Bird research and bird surveys conducted at Kellerton BCA further support the fact that this particular BCA may be the most important grassland bird production area – for its size - in Iowa. All Iowa grassland nesting bird species (except Burrowing Owl) have been confirmed nesting in this BCA. It has been nominated as an Audubon Globally Significant Important Bird Area, because of its high population of nesting Henslow's Sparrows. For instance, 309 Henslow's Sparrow territories were documented in this BCA in 2015, in addition to 107 territories documented in 2014, 83 territories in 2008-09 (Pillsbury 2010), and 72 territories in 2006. Lake Sugema-Lacey-Keosauqua BCA also should qualify as an Audubon Globally Significant Important Bird Area, because 180 Henslow's Sparrow territories were documented there in 2015, as well. Even better, EFMO-YR Forest BCA was officially dedicated in 2014 as an Audubon Globally Significant Important Bird Area because of its significant nesting population of Cerulean Warblers (191 territories in 2013) and its overall high bird diversity. It should be obvious that these "globally significant" designations for BCAs can lead to more dollars directed to those areas for land protection, land management, and increased recreation opportunities. In the case of EFMO-YR Forest BCA, it already has.

As anticipated, the overall bird diversity within the 21 BCAs is high. The average number of bird species documented within each BCA is 219, with a range from 158 species (Kellerton) to 258 species (Effigy Mounds-Yellow River Forest). It should be noted that Grassland BCAs typically hold many fewer species than forest BCAs, thus the large discrepancy in species numbers between Kellerton & EFMO-YR Forest BCAs. The average number of Greatest Conservation Need species (from first IWAP list) found in each BCA is 58 species (out of 85 possible), with a range from 41 (Kellerton) to 67 species (Boone Forks Woodland). All but 2 of Iowa's 85 GCN species have been found in at least one BCA. The two species not accounted for in any BCA are Piping Plover and Least Tern, both federally listed species that nest along the Missouri River – and not typically documented much in other parts of the state.

Since the original list of potential BCAs was created, the bureau has created new complexes (or enlarged what were formerly small and/or disjunct areas); areas that likely were not recognized to be of significance in 1999 when the original list of sites was made. Several new complexes are now added to the BCA candidate list. Also, there have been a number of changes in Wildlife Management Unit personnel since the original candidate list was made, and newer staff may have different ideas about which of their areas might better fit the BCA model. Because of these considerations, current thought is that 25-30 sites might eventually be designated as BCAs. In recent discussions about where Iowa DNR is going with this program, it is recognized that BCAs have become a very important tool to help determine where the bureau's land acquisition dollars might best be spent. As evidence that this targeted land acquisition is happening, Joe McGovern, President of Iowa Natural Heritage Foundation (INHF) said that "INHF has worked within 16 of the 18 BCAs, including 161 projects and 25,372 acres of protection" (Iowa Natural Heritage Foundation 2014).

On the *Current and Future BCAs* spreadsheet, note that an attempt has been made to rank future BCAs, i.e. Top 20 Priority, Top 25 Priority, or Top 30 Priority. The current ranking is chiefly based on 1) the proposed candidate area fitting the BCA model requirements, 2) equitable statewide and Bird Conservation Region distribution of Iowa's best representative bird habitats to maximize bird habitat benefits, 3) areas with the highest percentage of grassland cover that are typically prioritized over areas comprised primarily of woodland, 4) at least one BCA placed in each Wildlife Management unit, and 5) commitment of various conservation partners to invest time and dollars toward improving bird habitat in a particular area. The strong commitment of many of DNR's conservation partners toward implementing better bird conservation has been a large factor in BCA ranking over time. Good examples of DNR partners who are committed to land protection and improved bird conservation are: Iowa Natural Heritage Foundation, which has protected (through October 2015) about 26,000 acres of land within 19 BCAs, The Nature Conservancy that has protected over 6,300 acres in Broken Kettle Grasslands BCA in Plymouth County, Polk County Conservation Board and U.S. Fish & Wildlife Service in Chichaqua-Neal Smith Grassland BCA, where they have jointly protected over 13,000 acres, and White Rock Conservancy (WRC) in Raccoon River-Savanna BCA in Guthrie County, with over 5,000 acres protected by WRC alone.

BCA PRODUCTS & BENEFITS

- Bird Management Technical Guides (one for each of three Bird Conservation Regions that also include priority bird species lists).
- Brochure for each BCA (all 21 completed) (contains list of all birds documented in BCA, with emphasis on birds of Greatest Conservation Need).
- Large BCA oak signs that draw attention that this area is special to birds. There is potential to add smaller metal signs with a BCA logo, too.
- Increased partner support. The BCA program would not be possible without the financial support and strong working relationships that have been created among the numerous conservation agencies,

conservation organizations, and local landowners and community citizens. Because of these relationships, the opportunities for future collaborative efforts to improve bird habitat are extraordinary.

- Each BCA is also co-designated by Iowa Audubon as an Iowa Important Bird Area (IBA), which encourages more visitation of these areas for birding and wildlife appreciation.
- Implementation of the Iowa Wildlife Action Plan. BCAs tend to be some of the highest ranked "Opportunity Areas for Cooperative Conservation Action" in the Iowa Wildlife Action Plan. Based on data already gathered through MSIM, Breeding Bird Atlas, Natural Areas Inventory, etc., it appears that BCAs tend to hold numerous GCN Species (not just bird species) and tend to support high diversity for many (if not most) wildlife groups. It seems a fair assumption that these areas are representative of the greatest potential for conservation success in Iowa.
- Watchable Wildlife Promotion & Increased Recreational Opportunities
    - 5 BCAs now have viewing platforms, with the goal to have a viewing platform or special viewing site in every BCA. Educational kiosks and other materials are developed for these viewing sites, as well.
    - Watchable Wildlife Events in BCAs (Hawk Watch, Prairie Chicken Day, Sandhill Crane Celebration, Big Day of Birding, Peregrine Falcon, Cerulean Warbler & Red-shouldered Hawk river viewing tours, etc.).
    - Besides environmental education benefits, watchable wildlife promotion is a most significant boon to Iowa's economy – to the tune of $318 million in 2006 (U.S. Department of Interior et al. 2006). For the first time in Iowa history, this was more money than was brought into Iowa annually through hunting revenue. With Iowa no longer being a rural population state (+64% of Iowans now live in an urban environment), how people value wildlife is changing.
- Increased research on bird habitat use and nest success within BCAs (at least 12 bird research projects in 6 BCAs so far). State Wildlife Grant funds are particularly targeted to be spent in BCAs. Wildlife Diversity Habitat Management Grants tend to favor projects in BCAs, too.
- Increased documentation of bird species nesting and/or presence in BCAs (MSIM, BBA, other bird point counts). A goal is to have long-term bird monitoring within each BCA. A pilot project for this occurs at Kellerton BCA, with two years' data collected as of 2015.
- BCAs are focal areas that serve as examples of effective bird habitat management to land managers, which results in more focus by land managers on habitat management for multiple species of birds and particular SGCN.
- 83 of 85 GCN Species (2012 Edition of IWAP) are represented in BCAs, and the average is 59 SGCN/BCA. The average number of total bird species/BCA is 219.
- Targeted land protection within BCAs, especially using REAP license plate and State Wildlife Grant funds.
- Grassland BCAs are targeted by USDA Farm Conservation Programs for federal funding; private landowners now receive extra points for being in a grassland BCA. DNR Private Lands Program staff provide special assistance to landowners within BCAs and help them sign up for specific state and federal cost-share conservation programs.

FUTURE ACTIONS

1) Re-create land cover maps (using high resolution land cover) of all BCAs created more than five years ago. Justification for this is that many BCAs have additional land protected since the original maps were made. It will be useful to see how recent land protection has added to the BCA core areas, and it can be helpful to re-examine the overall mosaic of land cover within each BCA. Also, since land cover has changed over time within BCAs, it will be important for management purposes (especially from a landscape perspective) to know what current land cover is and the relative contiguity of the particular

habitat type being managed for. Changes in land cover and changes in the amount of land in permanent protection should (ideally) be documented in five year increments within the BCA Data spreadsheet. It needs to be pointed out that satellite imagery of today is much finer in detail than it was in 2001, so comparing land cover that was interpreted differently for different time periods may not produce especially accurate comparisons for time periods spaced many years apart.

2) Meet with BCA land managers and conservation partners to establish bird conservation priorities for each BCA. Work more closely with DNR private lands staff to increase efforts toward private land conservation easements and improved management for birds. For grassland BCAs that do not meet the minimum BCA Model requirement of 35% grassland land cover and for those BCAs that do not meet the minimum BCA Model requirement of 20% permanently protected land, make it a priority to achieve those minimum requirements.

3) Develop a landscape strategy (plan) for each BCA to include landscape-scale factors in management decisions and to include a monitoring and evaluation process that more systematically integrates the Iowa Wildlife Action Plan into the Wildlife Bureau's management priority actions. An effective landscape strategy will link the actions of public lands managers, private lands managers, and research staff and lead to better assurance that our limited time and resources is used most effectively to implement the goals and objectives of the IWAP.

4) Continue to add at least one BCA each year, as long as such additions meets the minimum requirements of the BCA model. Priority will continue to be given to areas with the highest percentage of grassland cover and to areas and/or geologic landforms of the state that still do not have a BCA, especially southwestern and extreme eastern Iowa and specifically in the Maquoketa and Nishnabotna Wildlife Units. On March 26, 2010 Matt Dollison said, "I would think Loess Hills State Forest and Loess Hills WMA would both be great additions." Currently, the Loess Hills BCA, including both areas suggested, is being worked on. Creating a BCA around Indian Bluffs/Pictured Rocks in Jones County will fulfill the Maquoketa Unit priority. St. Mary's Island WMA in Mills County is being assessed as a possibility to fulfill the BCA priority for the Nishnabotna Unit.

5) Continue to create BCAs in proximity to one another to ensure connectivity of habitat. This is actually one of Partners in Flight's original priorities with the BCA program – to create 2-3 BCAs in close proximity, so that birds can easily move between each area.

6) Create land cover maps for remaining top 30 priority BCA sites to help decide the ranking order for future BCAs.

7) Increase the environmental education and outreach focus of the BCA program. When AmeriCorps staff can again be hired to do this – there is already justified documented need. A good example of this need can be seen in the Bird Conservation & Appreciation Working Group, chaired by Lyle Asell, to increase attention on Lucas County Bird Conservation Areas. This is being done by promoting more birding events and more appreciation by the public of birds in this area, which has already led to at least two grants being approved to bring more money to the local community. Another example is the economic benefits already derived by local towns and communities as the result of Effigy Mounds-Yellow River Forest BCA becoming a Globally Important Bird Area. Ecotourism (especially birding) is being promoted locally and Maiden Voyage Tours provides guided bird tours of the area, while Friends of Pool 9 provide educational programs on the Mississippi River and on adjacent bluffs.

8) The BCAs and Amphibian and Reptile Conservation Area (ARCA) are focal and opportunity areas for more direct and specific conservation actions to take place, and wildlife staff are working at a landscape level the best we can in a state that is ~87% agricultural land (USDA 2012). All together, these BCA and ARCA focal areas now comprise 5.1% of Iowa (~16% of which is permanently protected land), and the assumption is that Iowa can maintain a high percentage of its species in sustainable numbers by focusing more effort on our few remaining large landscape areas of high biodiversity and high wildlife abundance. Research to further test this assumption should prove useful for Iowa's adaptive management scheme and for strategic planning purposes.

FURTHER COMMENTS

It was pointed out that just because an area originally nominated to be a BCA does not fit the BCA Model, that area should not be discounted. Kiowa Marsh in Sac Co. is an example of this, as is Copeland Bend in Fremont Co. It was further suggested that each of these areas be mapped out, as a potential BCA, to show what additional properties/patches/areas might be protected and what habitat changes or additions might potentially be made so these areas do fit the model. This seems a good idea, and this kind of action actually should fit quite nicely with current strategic planning efforts. Even if some areas do not become official BCAs, there is still much benefit from landscape scale planning endeavors.

While the BCAs (particularly BCA core protected lands) are considered focal areas for improved bird conservation practices, it appears that most of these same areas (if not all) also serve as valuable habitats for a wide variety of other animal and insect groups. A closer analysis of Natural Areas Inventory data and data gathered from the Multiple Species Inventory & Monitoring program should provide a clearer view of the relative importance of these areas to Iowa's overall wildlife diversity.

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SUMMARY INFO EXAMPLE FOR A BCA

Kellerton Grasslands Bird Conservation Area

Counties: Ringgold
Date dedicated: 2001
Species Suite: Grassland
NABCI BCR 22: Eastern Tallgrass Prairie
Total acres: 67,279 (as of 2006); was 10,500 acres originally
Protected acres: 5,359

41 documented Species of Greatest Conservation Need, including: Greater Prairie Chicken, Northern Bobwhite, Upland Sandpiper, Northern Harrier, Short-eared Owl, Henslow's Sparrow, Grasshopper Sparrow, Loggerhead Shrike, Bobolink, Dickcissel, Sedge Wren, Eastern Meadowlark, Western Meadowlark.

- Nominated in 1997 and officially dedicated in 2001, the Kellerton Grasslands BCA has the distinction of being the first BCA in Iowa and also the first Grassland BCA in the nation, using a model developed by the PIF Midwest Working Group and Wisconsin DNR.
- Part of Grand River Grasslands – joint project of The Nature Conservancy, Missouri Dept. of Conservation, and Iowa DNR.
- Centered on the only known breeding population in Iowa of Greater Prairie-chickens. In 1997, the original targeted species were Greater Prairie-Chicken, Northern Harrier, and Short-eared Owl – all documented nesting in BCA and all are very area sensitive species.
- Original BCA (10,500 acres) expanded to 67,279 acres in 2006, based on landscape-level habitat needs for a sustainable prairie-chicken population (Hamerstrom and Hamerstrom 1973).
- In 1997, there were 0 acres of public land at Kellerton; and because of the BCA establishment for prairie-chickens - in 1998 there were 737 acres, and in 2015 there are 1870 acres of public land.
- Public viewing platform, educational kiosks, and permanent spotting scope added (2001) to accommodate prairie-chicken viewing and Annual Prairie-Chicken Day, which is held in mid-April.
- Stephanie Shepherd, with assistance from the DNR Prairie Chicken Management Committee, crafted an Iowa Greater Prairie Chicken Management Plan in 2012. While this document is particularly valuable for prairie chicken management, if carried out as prescribed, it also will be beneficial to every other grassland bird that nests in and migrates through this BCA.
- Numerous graduate student studies and bird research projects have occurred and continue to occur in Kellerton BCA and Grand River Grasslands including: impacts of patch-burn-grazing, management effects on various bird species, butterfly studies, and a sociological study looking at landowner/public

attitude about various land management regimes; with large investment of State Wildlife Grant money.

- Multiple Species Inventory & Monitoring, with several permanent point count points established; plus pilot bird point count surveys run on BCA in 2014 & 2015 to compare bird occurrence and abundance on private vs. public managed lands.
- Resulting from what has been learned through research and monitoring, Iowa DNR is currently using managed grazing and Patch-burn grazing on over 1175 acres of warm and cool season pasture.
- A new permanent wildlife technician position was added to the staff of the Grand River Wildlife Unit.
- A permanent IDNR Private Lands Specialist has been assigned to work in Ringgold County, with a focus on grassland restoration in the Grand River Grasslands and Kellerton BCA.
- BCA designation has resulted in improved private land management with landowners receiving extra points when they sign up for selected state and federal agricultural conservation programs.
- Kellerton BCA and its many partners have served as an example for integrated bird management statewide.

Kellerton BCA Funding Partners – in alphabetical order

Central Iowa Ornithologists
Central Iowa Sierra Club
Iowa DNR Wildlife Bureau – F&W Trust Fund
Iowa DNR Wildlife Diversity Program – WCRP & SWG grants
Iowa Natural Heritage Foundation
Iowa Ornithologist's Union
Iowa REAP grants
Johnson County Songbird Project
Linn County Conservation Board
Multiple individual private donors
National Audubon Society – 6 chapters and Iowa Council
National Fish and Wildlife Foundation – grants
North Iowa Nature Club
Pheasants Forever - 6 chapters and Iowa Council
The Nature Conservancy of Iowa
USF&WS SWG-Competitive Grants
Woodlink, Ltd.

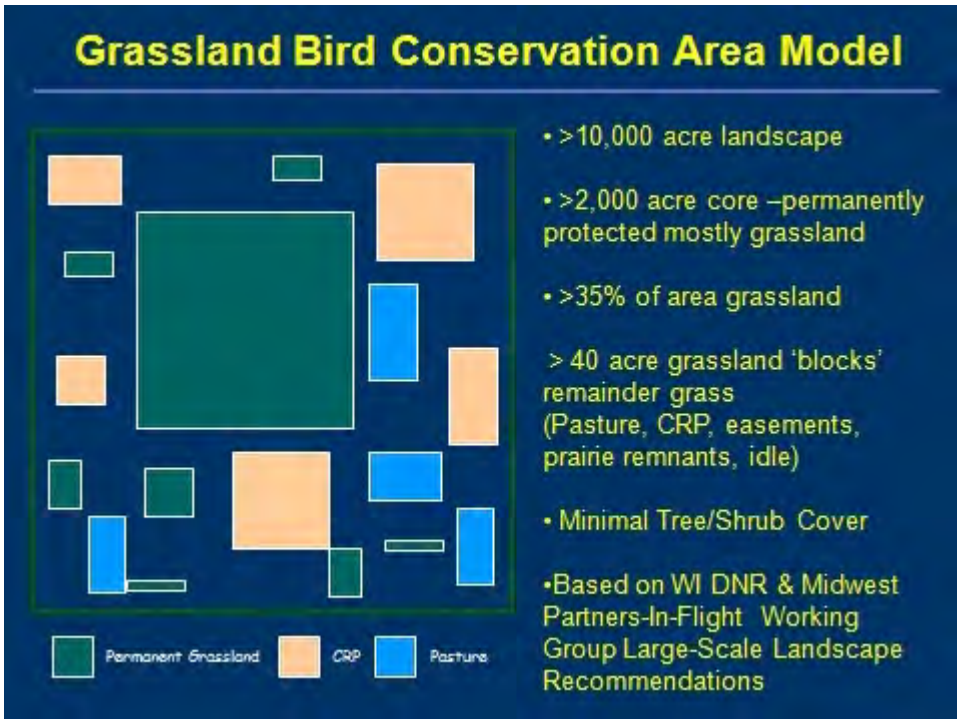

Figure 1. Partners In Flight Grassland BCA Model

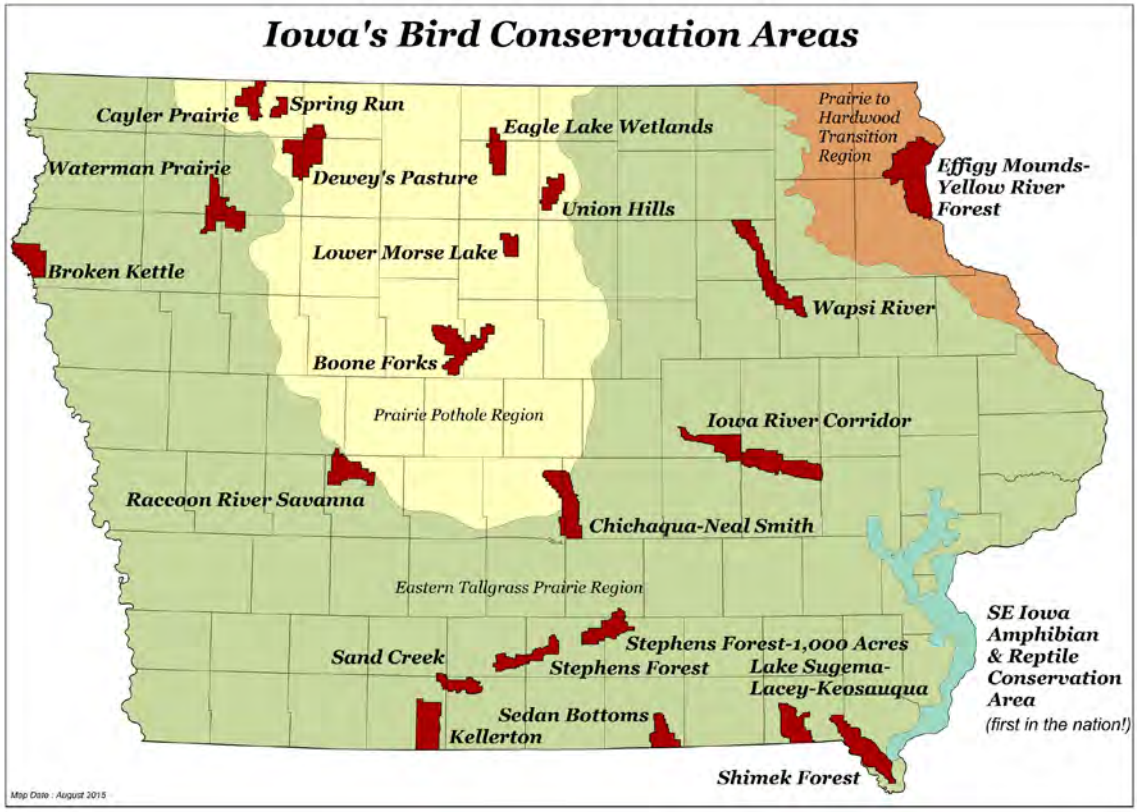

Figure 2. Iowa's 21 BCAs (15 October 2015)