

# Assessment of State-level Grassland Conservation Programs (aka: Gap Analysis)

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## INTRODUCTION

Wildlife targeted private land conservation incentive programs aim to encourage landowners to actively manage, restore, and preserve their properties to improve biodiversity, promote sustainability, and encourage science-based management. In North America, significant resources from state/provincial government, Federal government, and non-profit organizations are directed towards financial conservation incentive programs (Stern 2006). There are a broad range of incentive program types that target various habitats including wetlands, forests, and grasslands and program coverage can be state-wide or on a county or regional basis. Since there are so many types of programs, it is difficult to understand the extent of grassland conservation coverage in North America. Having an understanding of who is doing what and where, in terms of grassland conservation programs on private lands is crucial to furthering efforts.

To get a better idea of grassland conservation coverage, the Grassland Work Group of the AFWA Bird Conservation Committee endeavored conducted a state-by-state, province-by-province gap analysis to map tri-national grassland habitat programs and bird conservation efforts across North America. The goal of this gap analysis was to develop a snap-shot of current private lands programs collectively addressing declines in the broad suite of grassland species and help to determine where additional collaboration efforts and funding are needed. A 10-question web-based survey was sent out via an email link to would-be participants in the U.S., Canada, and Mexico.

## METHODS

The Grassland Work Group crafted a 10-question survey (figure 1) with the intention of targeting participants from state/provincial wildlife agencies, Federal agencies, NGO's, as well as US Farm Bill coordinators. This survey was web-based and was sent out via an email link to would-be participants in each state in the US and most provinces in Canada. Possible participants were identified from contact information gleaned from state-by-state, province-by-

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province search of agency and organizational websites and partner contacts. The survey instructions were sent to explain we were seeking grassland conservation programs targeting state, province, Federal or NGO programs that address grassland habitats, primarily on private lands. It was also stated that efforts addressing monarchs, pollinators, birds, and other grassland associated species were similarly of interest. At the end of the survey, participants were asked to contribute spatial data by way of an online interactive map where they could draw polygons around program locations or focal areas.

Collection of contact information for would-be participants began in October 2019 and the first emails with survey invitations were sent the following December. The survey was sent to over 300 individuals at over 90 entities in the U.S. and Canada. A general invitation to participate in the analysis went out to the National Bobwhite Technical Committee (NBTC) Listserv. Potential participants from each state fish and wildlife agency in the U.S. were contacted as well as contacts at USDA NRCS offices, USFWS, The Nature Conservancy, Audubon, and various other NGOs.

**Figure 1.** Survey questions sent via web link to potential participants in a gap analysis of grassland conservation programs.

1. Give the name and a brief description of the grassland or grassland wildlife focal area, initiative, project or program (for multiple programs, please either list in one survey or fill out separate surveys for each).
2. Program type? (Non-Governmental Organization, Federal, State, University, Public-private partnership, other (explain)).
3. What is name of the geography(s) in which you are working (e.g. state(s), region)?
4. Please list conservation targets, i.e., what bird species or species/species groups from other taxa (e.g., pollinators, insects, mammals, reptiles), or what habitat targets including landscape-scale targets (connectivity, grassland-wetland complexes and grassland complexes of diverse prairie/grassland communities including aquatic)?
5. When was this program initiated, and what is its anticipated duration?
6. What is the current stage of planning and/or implementing (conservation delivery)?
7. What monitoring, if any, is associated with this program (e.g. population monitoring, conservation action tracking.)
8. What funding sources support this work? (Please include information about annual investment and annual Leverage and indicate if current funding and staffing levels are sufficient or need to be increased.)
9. Who are the key partners implementing the program?
10. Are you aware of any high quality grassland landscapes within your state that cannot be addressed due to lack of funding and staffing?
11. Please share any other comments you have.

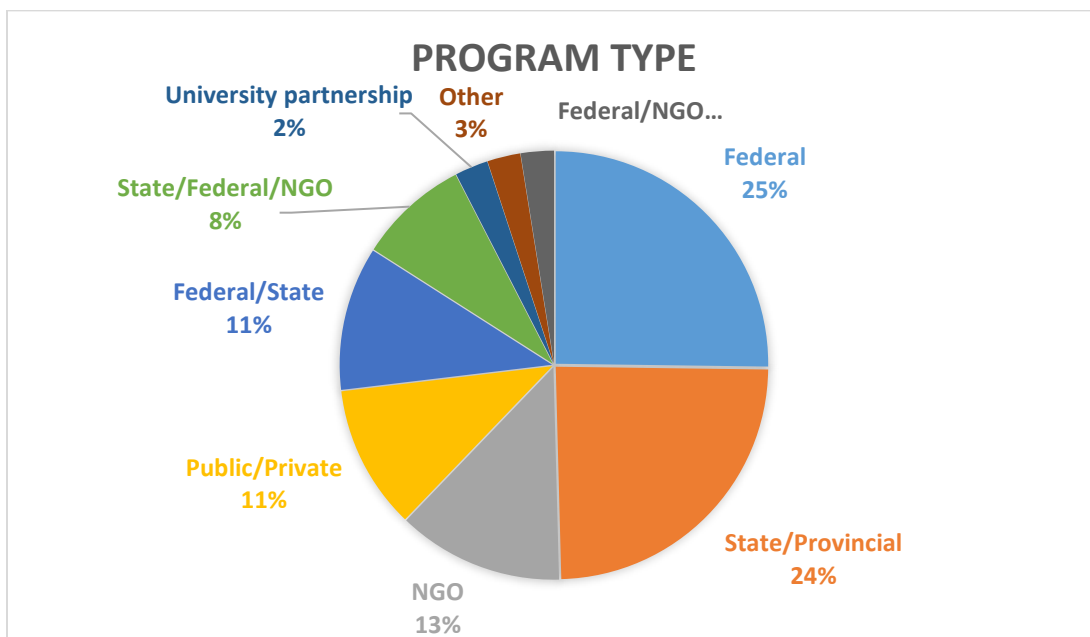
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## RESULTS

Seventy-five entities (see appendix) completed a total of 112 surveys (103 for the U.S. and 9 for Canada). Roughly 139 grassland conservation programs and focal areas were entered into the online map (Figure 1).

## SURVEY RESPONSES

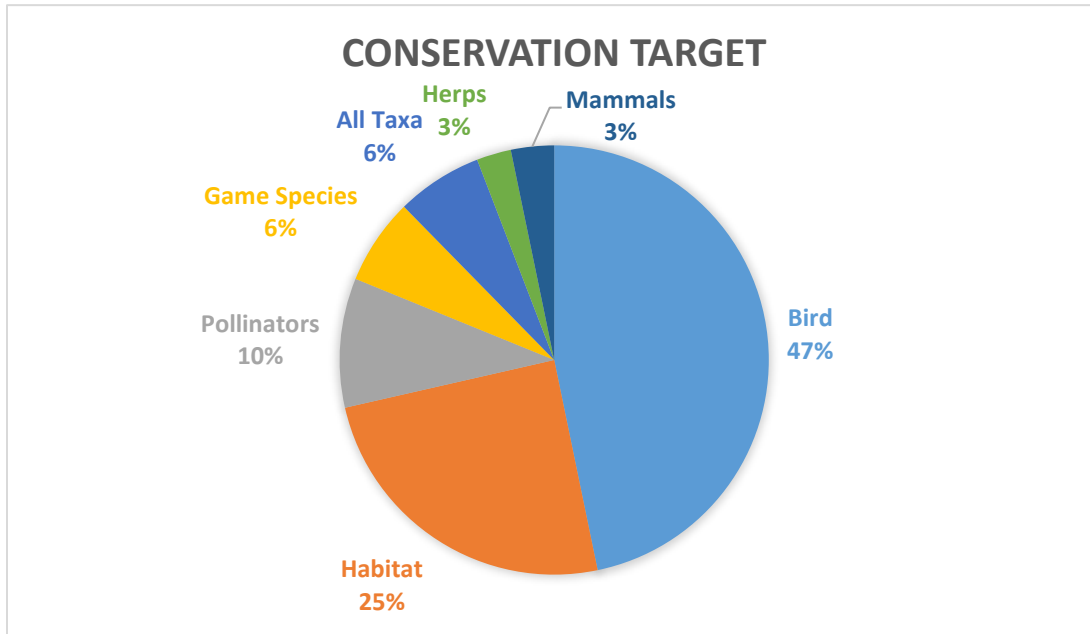
**Program Type:** The majority of grassland conservation programs detailed in the surveys were Federal (26%) followed by State/provincial (25%), and NGO (13%).



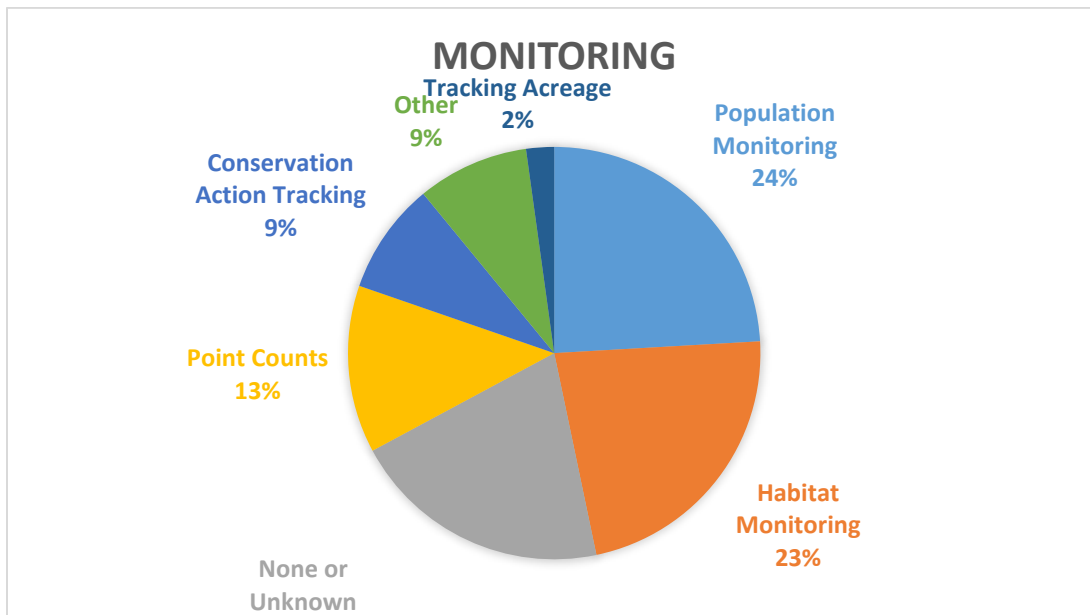
**Conservation Target:** For 47% of the programs, birds were listed as the main conservation target. Habitat had the second highest proportion (25%) followed by pollinators (10%). “Birds” included programs targeting specific species (e.g., Northern Bobwhite, pheasant, etc.) and

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programs targeting unspecified birds.



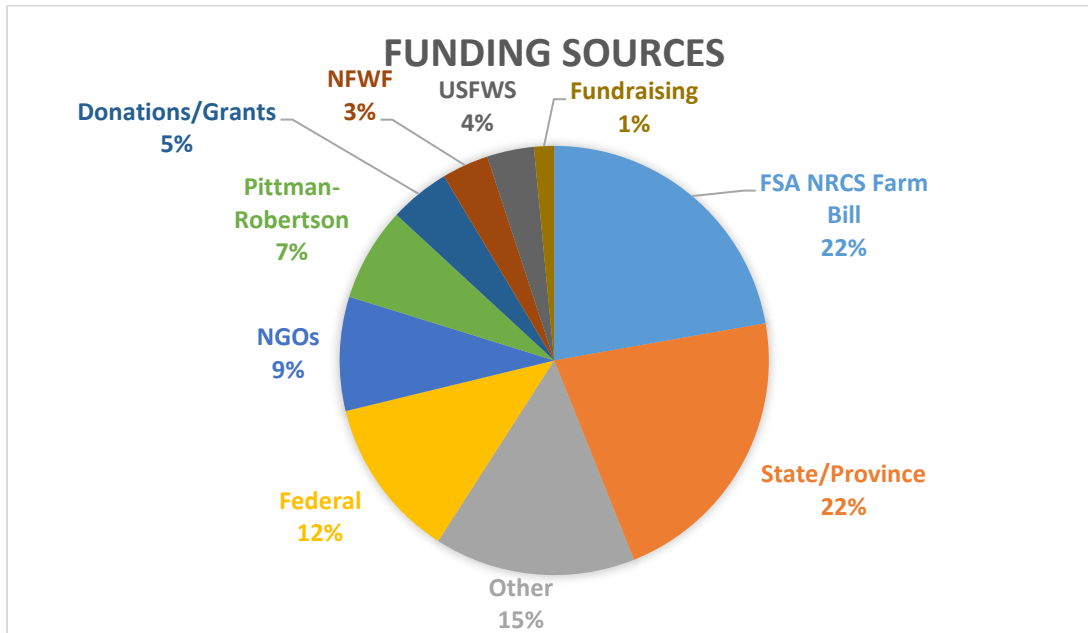
**Monitoring:** The majority of programs had some sort of monitoring in place (78%). Wildlife population monitoring was the most common (24%), followed closely by habitat monitoring (23%), and avian point counts (13%).



**Funding Sources:** The top funding sources were Farm Bill funding through the USDA Farm Service Agency (FSA) and the Natural Resource Conservation Service (NRCS) and state/province

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funding (each 22%), followed by “Other” (15%), which represents funding sources that were listed only once.



**Additional Funding Needed:** Forty-two percent of the respondents said additional funding was needed, 25% said no additional funding was needed, and 26% of the respondents skipped this question.

### Participant Comments:

- “We need improved understanding of edge of range species, such as Grasshopper Sparrows, but lack of funding and staff resources has been a huge impediment. For a mostly forested state, grasslands exist largely for anthropogenic uses, so balancing the needs of wildlife with those uses has been challenging.”
- “Being a federal agency we are largely limited in our ability to address work with private landowners outside our proposed park boundaries. We have been a place where research and demonstration is conducted with and by partners, and that type of work can be used to facilitate uptake of new conservation strategies outside the Park.”
- “This program is difficult to describe because it is implemented through a wide variety of partners with various strategic goals. Furthermore, the success of the programs varies based on resources and needs of the land managers involved. Therefore, further discussion on this work is likely required to truly integrate it into a North American grasslands conservation plan.”

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## SPATIAL DATA

To date, 139 programs and conservation areas have been entered into the online map (Figure 1). The migratory bird flyway breakdown is as follows:

- Central Flyway: 71
- Mississippi Flyway: 39
- Atlantic Flyway: 19
- Pacific Flyway: 5
- Multiple flyways: 5

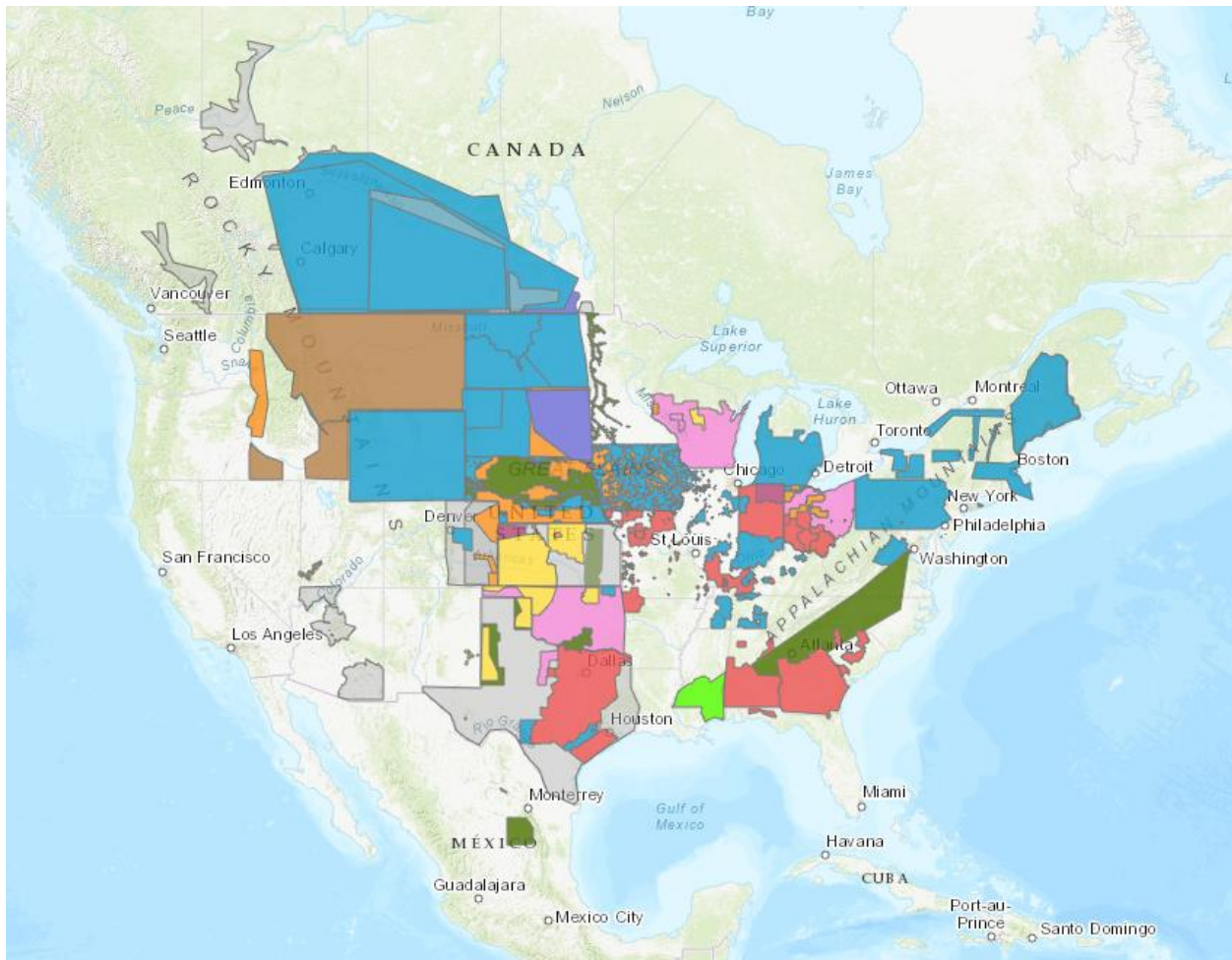


Figure 1. Online map delineating grassland conservation programs and areas, and migratory bird flyways (<https://arcgis.com/arcgis/rest/services/US/MapServer/0>). Colors indicate conservation targets.

## DISCUSSION

Coverage of grassland conservation programs in the Central Flyway is somewhat patchy, nonetheless most of the region appears relatively covered. Compared to the Central Flyway,

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the Mississippi Flyway appears to have less coverage, as do the Atlantic and Pacific Flyways. This could be a result of the overall lesser amount of grasslands in these regions as the majority of temperate grasslands in north America are within the Central Flyway. Another contributing factor, albeit to a lesser degree, may be the low response rates in these regions. In the Atlantic Flyway, there were six states that did not respond to the survey and in the Pacific Flyway, five states did not respond.

The extensive coverage of grassland conservation in the Central Flyway, however, may not be representative of actual grassland conservation status. In reality, entire states are likely not engaged in active grassland conservation. It is clear that some of the more discrete polygons refer to actual conservation areas whereas larger, more generalized polygons are depicting regions that could potentially be enrolled or included in a conservation program. An important aspect of this map to keep in mind is that it does not differentiate between active conservation and potential conservation.

This effort was intended to map where programs are available. Our survey was not designed to show where programs have impacted habitats or where programs have been successful. Difficulties sharing individual project locations due to privacy concerns prevent mapping of programmatic footprint.

This project is just a first step and the map is still a work in progress. It can be seen as a preliminary analysis to try and compare how programs line up and point out areas that could use some attention. This map can still be built upon and improved. A desired outcome of this map is to help build a list of possible ideas to transplant from one location to another and start to link some of the grassland conservation delivery programs across borders.

### ***Next questions:***

Where are the true gaps? How do we bridge these gaps?

Are these programs in line with endangered species recovery plans?

Can any of these programs be copy/pasted to other regions or states?

### **LITERATURE CITED**

Stern, S. 2006. Encouraging conservation on private lands: a behavioral analysis of financial incentives. *Arizona Law Review* 48:541-583.

### **ACKNOWLEDGEMENTS**

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### APPENDIX

*Supplemental Table 1.* The seventy-five entities that completed a Gap Analysis survey. Note: some entities contributed spatial data but did not fill out a survey thus are not listed here.

Entity
Agricultural Research & Extension Council of Alberta (ARECA)
Alabama Wildlife Federation
Arizona Game & Fish Dept.
Arkansas Game & Fish Commission
Audubon Maine
Audubon Massachusetts
Audubon Vermont
Bureau of Land Management
Canadian Wildlife Service
Central Hardwoods Joint Venture
Colorado Natural Heritage Program
Colorado Parks & Wildlife
Delaware Division of Fish & Wildlife
Ducks Unlimited
Ducks Unlimited Canada
Environment and Climate Change Canada
Florida Fish & Wildlife Conservation Commission
Georgia Dept. of Natural Resources
Gulf Coast Joint Venture
Idaho Dept. of Fish & Game
Idaho NRCS
Illinois Dept. of Natural Resources
Indiana Dept. of Natural Resources-Division of Fish & Wildlife
Iowa Dept. of Natural Resources
Kansas Dept. of Wildlife & Parks
Kansas NRCS
Kentucky Dept. of Fish & Wildlife Resources
Landis Sewerage Authority- New Jersey
Louisiana Dept. of Wildlife & Fisheries
Maine Dept. of Inland Fisheries & Wildlife
Manitoba - Critical Wildlife Habitat Program
Manitoba government
Manitoba Habitat Heritage Corporation
Massachusetts Division of Fisheries and Wildlife
Michigan Dept. of Natural Resources
Minnesota Dept. of Natural Resources
Mississippi Dept. of Wildlife, Fisheries & Parks



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Missouri Dept. of Conservation
Montana Fish, Wildlife & Parks
Multiple Species at Risk (MULTISAR)
National Bobwhite Conservation Initiative
Nature Conservancy of Canada
Nature Saskatchewan
Nebraska Game & Parks Commission
New Jersey Div. of Fish & Wildlife
New Mexico Dept. of Game & Fish
New York Department of Environmental Conservation
North Dakota Game & Fish Dept.
Oaks and Prairies Joint Venture
Ohio Dept. of Natural Resources Division of Wildlife
Oklahoma Dept. of Wildlife & Conservation
Oklahoma NRCS
Parks Canada Agency
Parks Canada/Grasslands National Park
Pennsylvania Game Commission
Piedmont Prairie Partnership
Province of Manitoba. Manitoba Habitat Heritage Corp
Saskatchewan Wildlife Federation
Saskatchewan, Ministry of Environment
Smithsonian
South Carolina Dept. of Natural Resources
South Dakota Game, Fish & Parks
South Dakota NRCS
Tennessee Wildlife Federation
Tennessee Wildlife Resources Agency
Texas Parks & Wildlife Dept.
Texas Parks and Wildlife Department
The Nature Conservancy Montana
U.S. Fish and Wildlife Service
Utah Department of Natural Resources
Vermont Fish & Wildlife Dept.
Virginia Dept. of Game & Inland Fisheries
Wisconsin Dept. of Natural Resources
Wisconsin NRCS
Wyoming Game & Fish Dept.