

— NEBRASKA MEGA PLAN —

IMPROVING PHEASANT HUNTING

"We're all in!"



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Dedication



This plan is dedicated to the memory of Commissioner Lynn Berggren (1950-2016), whose passion, energy, and enthusiasm for pheasants and pheasant hunting inspired all who helped create it.

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Executive Summary

Since their introduction to Nebraska around 1900, pheasants have become a fixture of the state's agricultural landscape and cultural heritage. Population levels have ebbed and flowed with changing farming practices, often driven by federal farm policies. Current policies, along with more efficient farming practices, have created substantial challenges to providing consistently good pheasant hunting in many Nebraska landscapes, particularly where wheat and other small grains are no longer part of crop rotations. If pheasant hunters are to have satisfying experiences in these landscapes, and to remain satisfied in our current pheasant strongholds, active management will be necessary. This plan seeks to direct that active management, and substantially increase it from current baseline levels.

The objective of this plan is to provide the best pheasant hunting experiences possible for the largest number of people over the next five years.

Our guiding principles are:

- We will consider all manageable aspects of the pheasant hunting experience, with habitat and hunter access (particularly for youth) remaining our cornerstone activities
- We will concentrate work where it will be most effective (i.e., where habitat, hunter access, and community support come together) based on sound science
- We will set realistic management targets and expectations, and use our financial and human resources as efficiently as possible to meet them
- We will foster strong partnerships with other public entities, private conservation organizations, and local communities in reaching our shared goals

We created a comprehensive conceptual model to identify all the major factors involved in reaching our objective. The model proposes four primary driving factors ("drivers") that influence hunting experiences, each working within a policy and funding environment, and further identifies a suite of factors that can impact each. Stated as directional goals, those drivers include:

- Increase pheasant abundance
- Increase hunter access to land holding pheasants
- Increase the pool of potential pheasant hunters
- Manage hunter expectations appropriately

Of those drivers, increasing pheasant abundance and hunter access to land are the cornerstone activities that most directly influence hunting experiences. As such, we recommend specific improvements in these factors in eight areas of the state where research and experience suggest our efforts will be most effective. Combined across areas, these improvements consist of over 805,000 acres of additional habitat improvements and 122,000 acres of increased hunting access, with an estimated average annual cost of \$5.9 million. Substantial public-private partnerships will be required to implement this ambitiously comprehensive program, but doing so will create wide-ranging benefits for Nebraska's hunters, environment, and rural economy.

Pheasants in Nebraska: An Overview

The ring-necked pheasant's tenure in Nebraska has surpassed the century mark, with the first reports of the species occurring around 1900 (Mathison and Mathison 1960). In 1911, the state legislature, for the first time, allocated funds to help establish the pheasant in suitable habitat across the state (Shafer 2011). In its first hundred years of residency, the pheasant has become one of the most recognizable and culturally important wildlife species to the state's citizens. Communities throughout rural Nebraska have enjoyed the economic and social activity associated with pheasant hunting since the 1920s, and perhaps no other event has intermingled rural and urban Nebraskans (as well as those from other states) together as effectively as the opening day of pheasant season.

The cultural traditions surrounding pheasant hunting were forged during the peak of pheasant abundance in the state. Following their introduction into the state in the early 1900s, pheasant numbers apparently reached their zenith in the late 1940s, and have generally declined since. Pheasants harvested and hunter numbers have followed this same trend, and the benefits to rural communities generated by pheasant hunting have also been greatly reduced.

Although weather events and fluctuations in the distribution and abundance of predators have no doubt influenced this downward trend in pheasant numbers, there is little doubt that changes in land use practices have had more impact on pheasant populations than any other set of factors. During the period of peak pheasant abundance in the 1940s and 1950s, diverse agricultural operations were the norm, with each operation often consisting of small fields of grain and hay crops interspersed with pasture and idle ground (Taylor et al. 1978). This production system generated, by happy accident, nearly perfect conditions for sustaining high pheasant densities, providing good nesting, brood-rearing, escape, and winter habitats within close proximity. Currently, only parts of southwest and south-central Nebraska, as well as parts of the Panhandle, approximate these habitat configurations.

However, as agricultural technology advanced and markets became more globalized over time, land uses within the pheasant range became more efficient and less diverse. Field sizes grew, idle land became scarce, and weed control became more effective. Wheat, which once provided important pheasant nesting habitat throughout Nebraska's farmlands, has become much less common. As a result, pheasants are no longer a reliable by-product of cropland agriculture, and their numbers have predictably declined (Taylor et al. 1978). Clearly, the circumstances that once supported high pheasant densities have all but disappeared in today's agricultural landscapes.

If pheasants are to become abundant again, active management will be necessary. In most cases, direct economic gain derived from acres devoted to providing pheasant habitat will be reduced, so the ability to offer attractive incentives (financial or otherwise) to landowners in exchange for creating and managing habitat is critical. The most abundant and well-known sources of incentives are the U.S. Department of Agriculture's (USDA) conservation programs, which provide wildlife benefits on hundreds of thousands of privately owned acres in Nebraska each year. It has long been recognized that these programs (most notably, the current Conservation Reserve Program [CRP]) are the only government-derived incentives funded currently at a sufficient level to improve habitat (and thus pheasant populations) at regional and statewide scales for a relatively long-term period. The NGPC's traditional role in these programs has been to provide technical assistance to congressional and USDA staff during program development and implementation, and to help promote desirable program options to landowners. More recently, in partnership with organizations such as Pheasants Forever and NRCS,

NGPC has been providing direct technical assistance to landowners interested in habitat management for pheasants and other game species.

Pheasant habitat is also a management goal on many of the NGPC's own public and private lands activities. Pheasant management remains a high priority on a number of Wildlife Management Areas across the state. However, while clearly vital to the agency's mission, these management activities have historically only affected a small percentage of the total landscape. Therefore, they have generally provided benefits at only a local level.

Despite these collective state and federal efforts (many of which are also shared and supported by private conservation organizations, most prominently Pheasants Forever, Inc.), statewide habitat conditions continue to slowly deteriorate, and pheasant numbers continue to decline. Given present agricultural landscapes, it is unclear if and when numbers will stabilize without some fundamental change in commodity production systems. With little margin for error remaining, those interested in maintaining the pheasant hunting tradition must use their limited resources in the most efficient manner possible and look for new ways to keep existing habitats intact and productive.

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Focus on Pheasants: Accomplishments and Lessons Learned

The Focus on Pheasants initiative began in 2002 as a partnership among the Nebraska Game and Parks Commission, Pheasants Forever, and Nebraska staff of the U.S. Department of Agriculture. These organizations had a common interest in restoring pheasant habitats and providing information to landowners, policy makers, and others working towards that same goal. Most projects and activities accomplished as part of this initiative would not have been possible without the cooperation of all the FOP partners, and keeping this partnership strong will remain the cornerstone for any future efforts.

The Focus on Pheasants program has been involved in projects on focus areas, as well as through other habitat projects, such as the Early Successional Habitat Management program on WMAs and other satellite projects statewide. The 2002 Focus on Pheasants plan identified 6 priority FOP development areas: Stanton County (private land), Dixon County (private land), Branched Oak WMA (public land), Sherman Reservoir WMA (public land), Harlan County Reservoir (public land, US Army Corps of Engineers), and One Box Hunt (community-directed Focus Area in Custer County). Focus Areas were developed in each of these areas. Between its inception in 2002 and 2007, Focus on Pheasant initiatives affected over 45,000 acres and spent over \$1.3 million on incentives and management activities. Management techniques included disking, chemical application, drilling, broadcast seeding, adding food plots, removing trees, controlled burns, interseeding grasses and legume mixtures, stubble management, and restoration seeding, as well as other incentive-based practices. These activities required a minimum of 16,875 person-hours coded over the 6 year period. Additional funds were

expended in noxious weed control and other herbicide treatment activities. In addition to management activities, over \$3,400 was spent on education and promotion of FOP initiatives, and nearly \$168,000 on research and evaluation.

The Focus on Pheasants program has many other notable accomplishments related to its work across the state. Among these accomplishments are habitat tours of the focus areas for landowners and resource professionals. During the 2004 and 2005 Stanton County tours, 250 people from 19 states and 25 government agencies attended. Additional tours have occurred across the state, including at Sherman and Harlan County Reservoir focus areas. These tours and research related to FOP partnership activities have had a significant impact on USDA conservation program policy, resulting in the current emphasis on early successional habitats in programs like CRP. Another significant accomplishment was the cost savings related to habitat management activities resulting from Pheasants Forever chapter partners hosting “work days” at Focus Areas. For example, for several years, local Pheasants Forever chapters near Sherman Reservoir organized local farmers to disk with two passes over 300 acres in one day. The work of coordinating Focus Area activities with partners and of organizing habitat tours was facilitated with the hiring of a Coordinating Wildlife Biologist in partnership with Pheasants Forever. The “Want more pheasants?” pamphlet, containing a list of Focus on Pheasants accomplishments and lessons-learned from early focus area projects, was distributed to all Nebraska landowners.

Although the results of research related to Focus on Pheasants habitat projects is important, a complete evaluation of the program should include lessons learned about the implementation process. Perhaps these implementation lessons are equally important, because they can help increase the efficiency with which the program is delivered. Among the lessons learned during implementation of habitat projects thus far was that landowner participation was contingent on incentive payments. For example, once incentive payments ceased, including annual rental payments from USDA through CRP, so did the management activities, and almost all of the FOP-CRP tracts in Dixon and Stanton Counties were returned to row crops when these commodities became unusually lucrative. All of the wildlife benefits created by these programs were lost. Further, some early FOP efforts relying exclusively on disking and interseeding with legumes resulted in noxious weed problems that damaged relations with local landowners, communities, and USDA personnel, and made implementation efforts more difficult. In areas with histories of noxious weeds, alternatives to soil disturbance will lessen the likelihood of negative publicity that could make further work difficult, and will also make sure resources are spent on habitat creation and not weed eradication.

Many of the questions we have been able to address have been related to short-term effects. This short-duration research is a consequence of both the funding cycle and the time constraints of graduate student research. We have begun to address this deficiency with the ongoing, long-term research in the Southwest Focus on Pheasants area.

Toward Comprehensive Management

Despite the many successes of the FOP program, pheasant abundance continues to decline in some regions. Losses of CRP and other grasslands over the last five years, particularly in eastern Nebraska, spurred renewed interest in conducting another thorough examination of all our pheasant management programs and approaches to ensure they were as effective as possible. Meetings were held with NGPC Commissioners, administration, staff and partners to assess the strengths and weaknesses of existing programs, and to assess the opportunities for new actions and threats to existing programs (SWOT

analysis). The group also better defined precisely what new or existing programs should try to accomplish, and how to carry them out.

As a result of this work, the following objective and guiding principles were adopted, and this plan was constructed around them:

Objective:

- Produce the best pheasant hunting experiences for the largest number of people possible over the next five years

Guiding Principles:

- We will consider all manageable aspects of the pheasant hunting experience, with habitat and hunter access (particularly for youth) remaining our cornerstone activities
- We will concentrate work where it will be most effective (i.e., where habitat, hunter access, and community support come together) based on sound science
- We will set realistic management targets and expectations, and use our financial and human resources as efficiently as possible to meet them
- We will foster strong partnerships with other public entities, private conservation organizations, and local communities in reaching our shared goals

To define what “all manageable aspects of the pheasant hunting experience” were in relation to the objective, we constructed a conceptual model to identify factors that impact Nebraska’s pheasant hunters’ perception of their experiences (Figure 1). The model proposes four primary driving factors (“drivers”) that influence those experiences, each working within a policy and funding environment, and further identifies a suite of factors that can impact each. Strategies and tactics were then identified for each factor that was deemed amenable to management in some way by NGPC or our partners. This resulted in a comprehensive plan that seeks to improve the entirety of the pheasant hunting experience in the state.

Finally, we estimated the resources that would be needed to implement the habitat and hunter access recommendations in the plan, as those composed our cornerstone activities. Those results are detailed in Appendices A and B. We also compiled all the research and information needs identified in the tactics; those are listed in Appendix C.

Drivers, Strategies and Tactics

Tactic Key:

- **Continue...** = Tactic that is currently employed and should continue
- **Begin...** = Tactic that is not currently employed but should begin

- **Assess...** = Tactic that requires more analysis before proceeding

A. Funding and Policy Environment:

Pheasant populations across their range are strongly influenced by federal policies impacting private agricultural lands. On an individual basis, states have limited ability to impact federal agricultural policy and establish habitat on private lands through federal conservation and commodity programs. NGPC has traditionally provided technical assistance to congressional and USDA staff as well as landowners on USDA conservation program development and implementation. The plan reinforces the need for conservation partners across the pheasant range to ensure continuation and improvement of federal conservation programs for grassland habitat and hunter access.

With the decline in federal incentives for habitat conservation, direct economic gain derived from providing pheasant habitat will be reduced, and the ability to offer attractive incentives (financial or otherwise) to landowners in exchange for creating and managing habitat, falls heavily on states. However, funding for wildlife conservation is facing challenges at the state level as well. This will require investigation of new and innovative funding for habitat and access incentives.

The plan highlights the importance of partnerships in carrying this load. Because pheasants inhabit agro-ecosystems, private landowner contact, buy-in, and incentive programs will be key to plan implementation. Many conservation partners in Nebraska have strong ties to private lands, and many already have various incentive programs in place. Partnerships create opportunities that often promote cross-taxa benefits; for, example, grassland improvement for pollinators contributes to a suite of species, including pheasants. Non-traditional partnerships can capitalize on the social importance of pheasants and pheasant hunting to communities and promote the universal benefits of healthy grassland habitats. As such, the plan encourages evaluation of current and new funding opportunities for synergistic efforts between agricultural landowners, communities and conservation partners.

Strategies

- Foster public appreciation of the tangible links between healthy pheasant populations and the health of broader wildlife, soil, water resources in the state
- Strengthen and expand partnerships within and outside the conservation community to capitalize on the multiple societal benefits that pheasants and their habitats provide
- Provide for the long-term security of current funding sources devoted to wildlife conservation
- Pursue additional funding sources to increase the capacity to create and maintain habitat on public and private lands
- Create and promote feasible, attractive incentives for private landowners to produce more and/or better pheasant habitat
- Work with our conservation partners to ensure the federal Farm Bill provides more benefits to pheasants and other grassland wildlife

Tactics

- **Continue** to use current funding from hunting permits, habitat stamps, federal aid, and other grant programs to efficiently and effectively emphasize 1) provision of grassland habitat quantity and quality, 2) improvement of access to those habitats for hunting, 3) improvement of

the recruitment, retention, and reactivation rates of hunters, and 4) provision of accurate and timely information about game abundance and wildlife management to hunters

- **Continue** to participate in and, if necessary, help create national, regional, state, and local conservation partnerships that yield tangible benefits for pheasants and hunters, with particular emphasis on including additional partners with different but overlapping interests (e.g., those interested in providing habitat for pollinators, non-game birds, etc.)
- **Continue** our administration's and staff's work with a wide array of partners to influence USDA conservation and public access program options and implementation rules at the national, state, and county levels, with special emphasis on work through the Association of Fish and Wildlife Agencies and its affiliates
- **Assess** the feasibility of pursuing alternative funding sources (e.g., a dedicated state sales tax, a special appropriation from the legislature, a non-wasting trust fund for pheasant conservation, etc.) in collaboration with our conservation partners
- **Assess** the feasibility of pursuing legislative actions that would promote pheasant habitat and hunting (e.g., a property tax reduction, freeze, or similar incentive on cropland converted to grassland or stream buffers, later dates for required roadside mowing, promotion of prescribed fire, etc.) in collaboration with our conservation partners

B. Manageable Factors Affecting Pheasant Abundance:

At a basic level, the factors that determine the dynamics of many game species, including pheasants, are weather and climate (not manageable), and habitat availability and suitability. Although weather events might determine a given year's pheasant production, no production can occur where no suitable habitat is readily available. Here, suitable habitat includes all habitat types necessary to complete the annual cycle of the pheasant. Much research has been conducted in Nebraska that has helped refine, not only what such suitable habitat consists of, but also the scale at which habitat components can influence pheasant abundance.

Matthews (2009) investigated whether pheasants showed similar responses to disking and interseeding as those observed for other grassland nesting species. He found that pheasant hens preferentially nested and brooded in disked and interseeded CRP fields compared to unmanaged CRP and other grasslands. Nest survival was highest in managed CRP fields, and brood survival increased with the amount of time spent in managed CRP fields, and production of roosters was twice as high in managed CRP as in unmanaged CRP and other grasslands.

Jorgensen et al. (2014) observed that local management activities, although beneficial, do not always have the desired effect. The pheasant habitat suitability model predicts pheasant abundance based on land cover values of CRP, grass, trees, small grain, row crops, and wetlands. This model indicated that landscape level variables did influence the outcomes of management activities undertaken at a local, site-specific level, with some factors constraining and others facilitating the positive effects of local land management (Jorgensen et al. 2014). The model of Jorgensen et al. (2014) predicted areas of the state where management activities could be undertaken most effectively, and is a component of the current plan, in keeping with the guiding principle above.

Based on the model of Jorgensen et al. (2014), we chose 8 regions that include 17 WMAs to focus our habitat and hunter access efforts (See Fig. 2). Within these areas, the habitat goals for private lands include impacting over 800,000 acres at a cost of \$25.5 million over five years, and providing 122,000 acres of upland game hunting access at a cost \$700,000 per year. The habitat goals for public lands include over 4,000 acres of additional habitat work above baseline management levels at a cost of \$706,440 over five years. See Appendix A and Appendix B for area-by-area goals for private lands and public lands, respectively.

Land acquisition is one tool utilized to provide access opportunities to hunters in Nebraska. Land acquired by fee title provides hunting land that will be available to the public in perpetuity. The Commission currently has a land acquisition program which considers land offered to the Commission on a willing seller basis. Land is evaluated based on Commission acquisition priorities. The Commission will develop a new acquisition plan to re-examine priorities with consideration given to acquiring land having or with the potential to have, upland gamebird habitat in selected areas. New funding sources will be investigated, including the enhancement of existing funds to acquire land for pheasant management and public hunting, consistent with agencies priorities.

Future efforts will include assessing the feasibility of acquiring conservation easements and access agreements to conserve habitat and increase hunting opportunities. Research will be needed to determine the estimated number and spatial distribution of pheasant hunting acres needed to satisfy a target level of hunter demand and determine the most cost efficient blend of acquisition, easements and access agreements necessary to meet that demand.

The plan will also address better ways to use pheasant releases to increase hunting opportunities for families in areas of the state where management activities for wild pheasants are less likely to be effective. We will also investigate regulation changes that would minimize the regulatory burden on private individuals and groups that wish to raise and release pheasants, as well as whether such regulatory changes will affect pheasant populations.

There is still much more to learn about the manageable components affecting pheasants and pheasant hunting. For example, the contribution of pheasant genetics to production and behavior is unknown, as is the possible dilution of this genetic potential through incidental breeding with captive-reared pheasants.

Although wide-scale predator control measures can be expensive, controversial, and inefficient, the use of more targeted predator control methods might prove effective. The plan calls for determining how and where such methods might be successful and efficient, and looks at possible regulation changes that would encourage trappers to increase their take of pheasant predators.

Finally, there is a continued need for childhood and adult education programs designed to foster an appreciation of wildlife and the natural world. To help meet the objective of this plan, programs should be continued or developed for current and future landowners of all ages that recognize their specific needs and interests.

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B1) NGPC Private Lands Programs

Strategies

- Use the best available information about pheasant-habitat relations, landscape effects on pheasant population potential, and social science on landowner attitudes to identify which regions of the state to create and maintain pheasant focus areas
- Improve habitat on private lands surrounding high priority WMA's to maximize pheasant population responses to WMA improvements
- Create and maintain more and/or higher quality habitat in pheasant focus areas
- Develop and maintain partnerships with private landowners, conservation organizations, and local, state, and federal entities to promote and accomplish habitat management for pheasants
- Leverage grassland habitat management activities to provide pheasant benefits where appropriate

Tactics

- **Continue** the focus area and partnership approach to habitat management as described in previous Focus on Pheasants plans when prioritizing habitat work
- **Continue** delivering pheasant habitat on private lands through the Wheat Stubble Management Program, WILD Nebraska, Nebraska Environmental Trust and federal aid grant funded programs, the Meridian Quail Initiative, habitat enhancement programs associated with Open Fields and Waters and other public access programs, and grassland-related work through the Nebraska Natural Legacy Project
- **Continue** to refine focus areas, define pheasant opportunity areas, and set habitat and access goals for each as appropriate
- **Begin** construction of a spatial assessment tool capable of more reliably identifying areas where additional habitat management is likely to yield the greatest results
- **Begin** to secure Nebraska Environmental Trust and other outside funding for key habitat work (e.g., a project focusing on providing pheasant, quail, and pollinator habitat on public and private lands)
- **Begin** to use the results of the recent Conservation Reserve Program landowner survey to create better program options and delivery approaches
- **Begin** landowner survey work to assess the efficacy of the Wheat Stubble Management Program
- **Assess** the location of current focus areas to assure that staff and resources are being efficiently directed

- **Assess** the feasibility of an upland game focus area spanning public and private lands in the Platte River valley
- **Assess** the feasibility of developing corridor habitat projects connecting large public lands (e.g., Sherman and Davis Creek WMAs)
- **Assess** the feasibility of leasing a large block (>5,000 acres) of private land to research pheasant responses to landscape-level habitat changes
- **Assess** the feasibility of a state- and/or federally-funded short-term set-aside program directed toward focus areas
- **Assess** the feasibility of mobile work crews to accomplish better mid-contract management on Conservation Reserve Program acres

B2) NGPC Technical and Partnership Assistance Affecting USDA Conservation Programs

Strategies

- Provide technical assistance to USDA using the best available information about pheasant-habitat relations, landscape effects on pheasant population potential, and social science on landowner attitudes to ensure pheasant friendly practices and focus areas considered in program offerings
- Create incentives to promote and increase the efficacy of existing USDA programs in producing quality pheasant habitat within focus areas
- Pursue additional funding sources to increase the scale and array of incentives
- Create and maintain capacity-building partnerships to provide technical assistance to USDA programs

Tactics

- **Continue** to provide both technical and financial assistance for enrollees in the USDA's Conservation Reserve Program (CRP), Environmental Quality Incentives Program (EQIP), and Voluntary Public Access Habitat Incentive Program
- **Continue** to provide technical assistance for enrollees in the USDA's Agriculture Conservation Easement Program (i.e., Wetland Reserve Program easements), and Regional Conservation Partnership Program for Grassland Birds
- **Continue** to help fund partner biologist positions located in USDA service centers
- **Continue** to provide technical and financial assistance to promote use of pheasant-friendly seed mixtures in USDA program plantings
- **Continue** participation in USDA State Technical Committee and subcommittees to ensure intended wildlife benefits of programs are realized
- **Continue** to monitor state and regional water and energy issues and the USDA programs created to address them, and promote incorporation of pheasant-friendly practices in those programs when possible
- **Begin** promotion of upcoming general CRP signup, and any sign ups that become available in the future

- **Begin** to communicate the results of the recent Conservation Reserve Program landowner survey to help USDA create better program options and delivery approaches
- **Begin** working with USDA to emphasize pheasant habitat (early successional and cropland conversion) in their EQIP and Conservation Stewardship Program through revised rankings and strategic targeting of focus areas
- **Begin** work on a proposal for a Regional Conservation Partnership Program that emphasizes pheasant and quail habitat
- **Assess** the feasibility of employing at least one partnership biologist in each county within our Focus on Pheasants focus areas to promote beneficial habitat practices and more fully take advantage of habitat improvement opportunities
- **Assess** the most effective ways of using precision farming technology to illustrate the potential cost-effectiveness of USDA conservation program options, with particular attention to potentially providing information at crop consultant meetings and conventions where available

B3) NGPC Technical and Partnership Assistance Affecting NGO Conservation Programs

Strategies

- Use the best available information about pheasant-habitat relations, landscape effects on pheasant population potential, and social science on landowner attitudes to provide technical assistance to NGO programs on pheasant friendly practices in focus areas
- Create and maintain more and higher quality habitat in pheasant focus areas by working collaboratively with NGO's to produce feasible, attractive incentives for private landowners
- Pursue additional funding sources to increase the scale and array of incentives
- Create and maintain partnerships to build capacity to provide pheasant friendly technical assistance

Tactics

- **Continue** partnering with Pheasants Forever, Ducks Unlimited, Northern Prairies Land Trust, and the Bird Conservancy of the Rockies (formerly Rocky Mountain Bird Observatory) to employ wildlife biologists in USDA service centers and other key locations across the state to deliver technical assistance to landowners
- **Continue** fostering development of the Nebraska Prescribed Fire Council
- **Assess** the feasibility of also partnering with agricultural groups and outdoor retailers to increase funding or effectiveness of technical assistance delivery

B4) Wildlife Management Area (WMA) Habitat Management Activities

Strategies

- Use the best available information about pheasant-habitat relations and landscape effects on pheasant population potential to identify which WMA's to manage intensively for pheasants
- For high priority WMA's, use all available means to provide ideal pheasant habitat (i.e., "make every acre count") while remaining sensitive to the hunters of other species that use those WMA's

- Improve habitat on private lands surrounding high priority WMA's to maximize pheasant population responses to WMA improvements
- For WMA's that are not high priorities for pheasant management, manage to the strengths of each WMA such that wildlife production and quality hunting opportunities are optimized (this may or may not include managing for pheasants, depending on the area)

Tactics

- **Continue** the WMA Early Successional Initiative, with the goal of resetting succession (through herbicide treatment, disking, or other managed disturbance) to the annual weed stage on 25% of the tillable acres available on WMAs each year (more than 37,000 acres were so treated in 2014)
- **Continue** to conduct more intensive management (e.g., creation of early successional habitats, improving grasslands through invasive tree and cool-season grass removal, etc.) for pheasant habitat on the 17 WMAs selected as part of our Focus on Pheasants and Focus on Quail programs (more than 11,000 acres were so managed in 2014)
- **Continue** the Habitat Share program in cooperation with Pheasants Forever and other conservation partners (nearly 2,000 acres on 28 WMAs were managed through Habitat Share in 2014), and grow the program to its financial and logistical limits
- **Continue** to develop agreements with non-NGPC entities owning WMA lands to more efficiently manage those lands for pheasants and other grassland wildlife
- **Continue** our partnership with Pheasants Forever to manage several WMAs in central Nebraska, and look for other potential opportunities to expand that model elsewhere
- **Continue** to identify additional NGPC-owned lands (State Parks, State Recreation Areas, and trails) where pheasant habitat could be created or improved
- **Begin** to secure Nebraska Environmental Trust and other outside funding for key habitat work (e.g., a project focusing on providing pheasant, quail, and pollinator habitat on public and private lands)
- **Begin** construction of a spatial assessment tool capable of more reliably identifying areas where additional habitat management is likely to yield the greatest results
- **Begin** discontinuing use of food plot seed treated with neonicotinoid insecticides where untreated seed can be obtained, such that risks to pheasants and the food supply for their chicks (i.e., insects) are minimized
- **Begin** discontinuing the planting of Canada wild rye due to its potential to cause nocardia and similar infections in dogs
- **Assess** the feasibility of alternative approaches to expanding our capacity to accomplish work on WMAs (traveling work crews, "Adopt a WMA" programs, etc.)
- **Assess** the apparent suitability of current and additional WMAs to be included in the Focus on Pheasants and Focus on Quail programs based on WMA size, surrounding landscape condition, and available staff and funding, and adjust priorities accordingly
- **Assess** the feasibility of an upland game focus area spanning public and private lands in the Platte River valley

B5) NGPC Land Acquisitions

Strategies

- Acquire land with or having the potential for pheasant habitat consistent with hunter demand and agency acquisition priorities
- Investigate new funding sources and enhance existing funding sources to acquire land for pheasant management and public hunting consistent with agency acquisition priorities

Tactics

- **Continue** to analyze the costs and benefits of lands offered to us for sale, and acquire lands in accordance with budget constraints and the agency's acquisition priorities
- **Continue** to surplus WMAs that are of low recreational and ecological value so that more resources can be devoted to WMAs with higher values
- **Continue** to re-examine the agency's acquisition priorities and produce a new acquisition plan to guide future purchases
- **Assess** the feasibility of pursuing conservation and/or public access easements in lieu of acquisitions to conserve habitat and hunting opportunities
- **Assess** the estimated number and spatial distribution of pheasant hunting acres needed to satisfy a target level of demand, and determine the most cost efficient blend of acquisitions, easements, and access agreements necessary to meet that demand

B6) Pheasant Releases

Strategies

- Use releases of pen-raised pheasants to improve youth and family hunting opportunities in landscapes where production of wild pheasants is not practical
- Use the most efficient methods of releasing pen-raised pheasants such that the cost of birds returned to the bag is minimized
- Reduce barriers for others to release pen-raised pheasants while minimizing associated risks to wild populations

Tactics

- **Continue** releasing roosters on 10 WMAs prior to the youth pheasant season and Thanksgiving
- **Begin** to identify and seek funding for four additional release sites near population centers
- **Assess** the biological and law enforcement ramifications of reducing or eliminating Captive Wildlife Permit requirements to raise and release pheasants, and minimize requirements accordingly

B7) Programs Affecting Genetic Potential

Strategies

- Expand existing knowledge of pheasant genetic profiles and ascertain if interventions are necessary and feasible to improve pheasant survival and reproduction

Tactics

- **Begin** working with University of Nebraska-Lincoln experts to develop a research proposal to measure the genetic diversity and structure of pheasants in Nebraska and to identify their potential links with population performance, and conduct research if return-on-investment is deemed favorable relative to other information needs
- **Assess** the current state of knowledge concerning potential impacts of pen-raised pheasant releases on the genetics of wild populations

B8) Statutes and Regulations Affecting Hunting

Strategies

- Set hunting regulations such that hunting opportunities are maximized while minimizing impacts on pheasant population dynamics

Tactics

- **Continue** to provide a long open season (last Saturday in October through the end of January, plus youth season the weekend prior to the general season), a three bird daily bag limit, a possession limit four times the daily bag, and shooting hours one-half hour before sunrise until sunset
- **Continue** research on potential indirect negative effects of hunting and hunting regulations on pheasant populations, and use results to propose regulation and/or policy changes if necessary
- **Begin** to assess the potential social benefits of changing hunting regulations such as modifying shooting hours to a mid-morning start time.

B9) Statutes, Regulations, and Programs Affecting Predation

Strategies

- Pursue statute and regulation changes that are predicted to have the most success in reducing impacts of pheasant predators on pheasant populations
- Initiate or expand partnerships to optimize opportunities for improved pheasant predator reduction programs and activities

Tactics

- **Continue** to provide liberal fur harvest seasons and allowances for the take of nuisance predators
- **Begin** the regulation-setting process to allow dog-proof traps on any WMAs that currently prohibit dryland trapping
- **Begin** the regulation-setting process to reduce the price of nonresident fur harvest permits
- **Begin** contacting counties that have banned trapping road right-of-ways to propose exempting dog-proof traps from those prohibitions
- **Begin** communicating with trapping organizations to identify ways to more effectively promote fur harvesting and to update our trapping education materials
- **Begin** development of a research project to assess the costs and benefits of a focused predator removal operation and to determine areas of the state where such an operation would have the highest return on investment.

B10) Childhood Experiences and Education Affecting Landowner Values

Strategies

- Provide information to children and their parents and teachers promoting the importance, conservation, and appreciation of Nebraska’s fish, wildlife, and outdoor recreation resources

Tactics

- **Continue** our delivery of Outdoor Skills Afterschool Program, Outdoor Discovery Program (“Expo School Days”), Growing Up WILD Program, Project WILD Program, and Trail Tales publication
- **Assess** the feasibility of adding delivery of the Leopold Education Project
- **Assess** our current programs to ensure they are reaching the desired audiences and having the desired effects

B11) Adult Experiences and Education Affecting Landowner Values

Strategies

- Use the best available information about pheasant-habitat relations, landscape effects on pheasant population potential, and social science on landowner attitudes to provide technical assistance to private landowners and partners on pheasant friendly practices and focus areas
- Provide outreach and education opportunities to landowners and other partners on how to create and maintain high quality pheasant habitat, and intensify those efforts within focus areas
- Seek ways to work collaboratively with partners to get our messages out to the public and landowners

Tactics

- **Continue** to emphasize one-on-one meetings between private lands biologists and landowners on visits to their land
- **Continue** working with our conservation partners to organize habitat tours, CRP workshops, prescribed burn workshops, and other similar field days open to small groups of landowners
- **Assess** the best ways to engage other farmer-trusted partners (UNL Extension, CO-OPs, crop consultants, farm managers, etc.) in delivering positive messages about the direct and indirect values of wildlife habitat in protecting other resources (soil, water, etc.)

C. Manageable Factors Affecting Hunter Access to Land:

Access to quality hunting lands is critical to retaining and recruiting hunters. Since 97% of Nebraska is in private ownership, publicly owned land, though important, is not sufficient to satisfy the demand for quality pheasant hunting across the state. Further, an increasingly urban populace has found it difficult to maintain the family contacts and friendships with rural landowners often necessary to gain permission to hunt private lands. Since the late 1990s, our response to this problem has been to pay landowners a per-acre fee to open their lands to public hunting through what is now known as the Open Fields and Waters Program (OFW), which has more than doubled the number of acres openly to hunting. OFW has been one of our most popular programs with hunters and landowners alike.

Twenty one percent of the hunters surveyed in 2012 (Lisa Pennisi and Namyun Kil, University of Nebraska-Lincoln, unpublished data) stated that they would not continue to hunt without public access lands, and 66% of those surveyed were primarily pursuing upland game, so we believe OFW and similar programs are critical to maintaining or increasing current rates of pheasant hunter participation. Maintaining hunter participation is vital, because communities in which pheasant hunting continues to be a viable tradition attract part of the \$848 million economic impact across Nebraska due to hunting. This tie to economic development provides a natural nexus for conservation interests to work with local communities within our focus and opportunity areas in providing more access to quality hunting.

Controlled Shooting Areas (CSA's) provide an alternative means of providing pheasant hunting opportunities to hunters as well as providing a business opportunity to those who vend these services. CSA's operate throughout a longer season than the state's established upland gamebird seasons and with more liberal bag limits to allow hunters to extend their seasons and harvest opportunities. Care will be taken to provide these opportunities and yet protect wildlife resources and hunter interests.

Future assessments of the biological, economic and legal ramifications of liberalizing CSA rules and policies will be undertaken to determine if regulatory oversight can be lessened to the benefit of both CSA operators and their customers alike.

C1) Public and Non-governmental Organization Lands Open to Hunting

Strategies

- Maximize hunting access opportunities on NGPC lands commensurate with hunter satisfaction objectives
- Foster partnerships and provide incentives to maximize the number of non-NGPC acres that are open to public hunting access
- Utilize research and available information to identify priority access sites, and incentivize landowner enrollment accordingly

Tactics

- **Continue** to maintain hunting access on all NGPC Wildlife Management Areas and selected State Recreation Areas, State Parks, and State Historical Parks
- **Continue** to identify additional NGPC-owned lands (including trails) where pheasant habitat and hunting opportunities could be created or improved
- **Continue** to communicate with other land-holding state agencies regarding additional hunter access possibilities
- **Continue** to promote access incentives and options to land-holding non-governmental organizations
- **Continue** research in partnership with UNL on the relations among hunting pressure, hunter satisfaction, and game abundance and behavior to ascertain potential benefits of unlimited versus restricted access on areas open to public hunting
- **Assess** the current portfolio of federal lands in Nebraska currently closed to hunting, identify those that potentially could be opened, and begin a dialogue with the appropriate federal agencies to ascertain their future access status

C2) Open Fields and Waters (OFW) Program Increasing Hunter Access to Private Lands

Strategies

- Use the best information available to place the right type and amount of access acres in the right places across the state
- Increase access acres in pheasant focus areas
- Ensure access sites in pheasant focus areas are the highest quality possible

Tactics

- **Continue** to promote and operate the Open Fields and Waters Program (OFW) and the Passing Along the Heritage (PATH) youth hunting access program to maintain at least the current number of enrolled acres offering public access to private lands (>275,000 acres), and expand both programs as resources allow
- **Continue** research in partnership with UNL on hunter use, success, and satisfaction on OFW lands to better deliver the program
- **Begin** updating the OFW application scoring mechanism and payment scales to account for quality and placement of access based on the recent OFW Human Dimensions study
- **Begin** offering habitat upgrades in exchange for OFW access enrollment within pheasant focus areas

C3) Statutes and Regulations Affecting Controlled Shooting Areas (CSAs)

Strategies

- Create a statutory and regulatory environment that allows CSAs to profitably meet hunter demand for their services while protecting wildlife and hunter interests

Tactics

- **Continue** to regulate CSA under current rules and policies
- **Assess** the biological, economic, and legal ramifications of liberalizing CSA rules and policies, and recommend changes accordingly such that regulatory burden is minimized

D. Manageable Factors Affecting Potential Pheasant Hunter Numbers:

The tradition of pheasant hunting is an important part of Nebraska's culture and heritage. Although pheasant abundance and hunting access certainly affect this tradition, there are other deliberate steps we can take to ensure the ranks of pheasant hunters do not diminish over time.

The Commission has made a long-term commitment to recruit, develop, and retain hunters, anglers, and other outdoor recreationists through a variety of related policies, programs, and permit offerings. These "RDR" efforts (also known as "R3", for recruitment, retention, and reactivation) are part of a larger movement across the country by states, conservation organizations, and outdoor industries to encourage participation in outdoor activities.

Based on nationwide research and experience with R3 programs, those working in this arena have developed a "recreation adoption model" that illustrates the process a person goes through to become and remain a pheasant hunter or other outdoor enthusiast. The steps between and among recruitment, retention, and reactivation phases of this process are illustrated in the Pheasant Plan Conceptual Model,

and the strategies and tactics recommended below are designed to influence one or more of those phases.

D1) RDR Programs and Partnerships Affecting the Number of Potential Pheasant Hunters

Strategies

- Given nationwide hunter declines, assess current programs and develop new or expand effective R3/RDR programs and activities
- Strengthen and expand partnerships within the conservation community to capitalize on the shared goals of increasing hunter numbers through R3 programs and activities

Tactics

- **Continue** support for Pheasants Forever's Youth Mentored Pheasant Hunting Program
- **Continue** releasing pen-raised rooster pheasants on 10 Wildlife Management Areas ahead of the youth pheasant season and Thanksgiving
- **Continue** delivery of the Staff Conservation Leadership Program, Becoming an Outdoors-Woman Program (BOW), Conservation Leaders for Tomorrow, Nebraska Outdoors Radio Show, After School Outdoor Skills Program, Outdoor Expos, Becoming an Outdoor Family (BOF), Passing Along the Heritage (PATH) youth hunting access program, and OutdoorU! Program
- **Begin** creating a shared position to promote R3 activities and programs in partnership with our conservation partners
- **Begin** to identify and seek funding for four additional pheasant release sites on WMAs near population centers
- **Assess** the effectiveness of our current suite of programs in moving potential hunters through to the adoption phase, and propose improvements based on the results
- **Assess** our budgetary capacity to support current and future pheasant release programs while concurrently supporting other programs benefiting pheasant hunters

D2) Statutes and Regulations Affecting the Number of Potential Pheasant Hunters

Strategies

- Given nationwide hunter declines, evaluate and initiate potential changes to reduce statutory and regulatory barriers to hunter participation

Tactics

- **Continue** to provide a long open season (last Saturday in October through the end of January, plus youth season the weekend prior to the general season), a three bird daily bag limit, a possession limit four times the daily bag, and shooting hours one-half hour before sunrise until sunset
- **Continue** to allow resident youth under the age of 16 to hunt without a small game permit, and non-resident youth to hunt for the price of a resident permit
- **Assess** the types and price points of our small game permits and habitat stamps to ensure a proper balance between lowering barriers to participation and providing the services necessary to encourage continued participation, including assessment of a \$5 nonresident youth small game permit

E. Manageable Factors Affecting Hunter Expectations:

Multiple factors can play a role in shaping hunter satisfaction. Often measures of satisfaction involve success-related factors (i.e., harvesting or seeing target species; Decker et al. 1980); but, satisfaction can also be influenced by non-success aspects of the hunt (spending time outdoors or recreating with friends and family; Gigliotti 2000). Thus, hunter satisfaction is viewed as a multifaceted concept, depending on the participant and recreational setting. In addition, hunters may formulate expectations about the desired outcomes before their hunting experience, which, in turn plays a role in hunter satisfaction (Hammit et al. 1990).

The link between expectation and satisfaction has been studied in consumer market research (and other disciplines; Niedrich et al. 2005), but is largely unknown in the outdoor recreation setting. Hunters are inundated with information from external sources (retailers, hunting outfitters, message boards and media) as well as information from NGPC (hunting forecasts, NGPC marketing and advertising, hunting regulations). Thus, managing expectations of hunters requires a better understanding of which factors most effectively reach and impact hunter perceptions about their hunting opportunities.

The plan addresses current and new approaches to communicating pheasant hunting opportunities. An important component is in providing timely and accurate information about pheasant populations, habitat, access, and opportunities. While there is still much more to learn about managing hunter expectations, the use of social media and direct communication with current and potential pheasant hunters is emphasized throughout the plan.

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Gigliotti, L. M. 2000. A classification scheme to better understand satisfaction of Black Hills deer hunters: The role of harvest success. *Human Dimensions of Wildlife* 5:32-51.

Hammit, W. E., McDonald, C. D., & Patterson, M. E. 1990. Determinants of multiple satisfaction for deer hunting. *Wildlife Society Bulletin* 18:331-337.

Niedrich, R. W., Kiryanova, E., & Black, W. C. 2005. The dimensional stability of the standards used in the disconfirmation paradigm. *Journal of Retailing* 81:49-57.

E1) NGPC Hunting Forecasts Affecting Hunter Expectations

Strategies

- Provide a factual, timely annual forecast to pheasant hunters about predicted hunting conditions across the state that highlights the best regions and uses language that neither undersells nor oversells what the average hunter is likely to experience

Tactics

- **Continue** to produce the upland game forecast based on Rural Mail Carrier Survey results and fine-tuned with input from field staff on significant weather events, ease of public access, and observed abundance of pheasants
- **Continue** to distribute the forecast to hunters through all available media
- **Assess** the relative roles of agency forecasts, word-of-mouth, online social fora, and personal experience in setting hunter expectations, and shift outreach resources accordingly
- **Assess** alternative survey methods for estimating pheasant abundance to ensure we are using the most reliable and cost effective approach
- **Assess** the state of knowledge concerning how hunter expectations are formed and how they influence hunter satisfaction, and propose additional research as warranted

E2) Message Boards and Media Affecting Hunter Expectations

Strategies

- Provide timely, accurate information throughout the spring, summer and fall to pheasant hunters detailing habitat and predicted hunting conditions for the year
- Solicit coverage of pheasant forecast information by reporters, bloggers and other channels, taking care to emphasize the factors that affect bird numbers and highlighting factual information

Tactics

- **Continue** promoting pheasant hunting information (especially near the start of the season) via social media, newsletter, Public Information Officers (Ralph Wall, Greg Wagner, Julie Geiser, Justin Haag); through these channels, we also promote pheasant hunting opportunities across the state
- **Continue** sponsoring Pheasant Forever's Rooster Road Trip, an annual multi-state hunt organized by Pheasants Forever that receives a lot of play on their website and social media channels
- **Continue** promoting upland game outlook at pre-hunting season events including the Nebraska State Fair, Husker Harvest Days, and Missouri River Expo
- **Continue** heavily promoting the public access atlas each year, giving extra attention to the grain stubble program and the pheasant opportunities enrolled those fields provide
- **Begin** being more aggressive with news releases, email blasts and promotion of pheasant opportunities in house media, sending multiple news release leading up to each season (touting forecast, start of season, increased opportunities on public land, etc.)
- **Begin** more aggressively pitching stories about pheasant hunting and our desire to increase opportunities to the Omaha World Herald, Lincoln Journal Star, Outdoor Life, Field and Stream and other publications

E3) NGPC Marketing and Advertising Affecting Hunter Expectations

Strategies

- Build a dedicated email list of pheasant hunters to which timely, accurate information can be sent in summer and early fall informing about habitat and predicted hunting conditions for the year
- Build a cooperating group of invested partners (Pheasants Forever, state, regional and community-based tourism groups) within Nebraska to help promote messages on pheasant hunting opportunities
- Maintain internal communication to facilitate an accurate marketing plan; revise this plan as needed in late spring and late summer as the outlook for the season becomes clearer

Tactics

- **Continue** sending a general email blast to all hunting permit buyers encouraging them to buy permits, and providing links to public access atlas, permits page, outlooks, etc.
- **Continue** targeting non-resident hunters with special campaigns and promotions well in advance of the fall season
- **Continue** development of a paid media campaign promoting upland game hunting to Nebraska residents with Swanson-Russell
- **Begin** using paid social media effort encouraging pheasant hunting; this effort would be intended to build excitement for the season the week before the season begins
- **Assess** the feasibility of partnering with the Nebraska Travel Advisory group, the Nebraska Tourism Commission, and/or community visitors bureaus to more effectively promote pheasant hunting opportunities
- **Assess** the utility of purchasing email lists for direct marketing campaigns to non-resident hunters

Figure 1. Pheasant Plan Conceptual Model

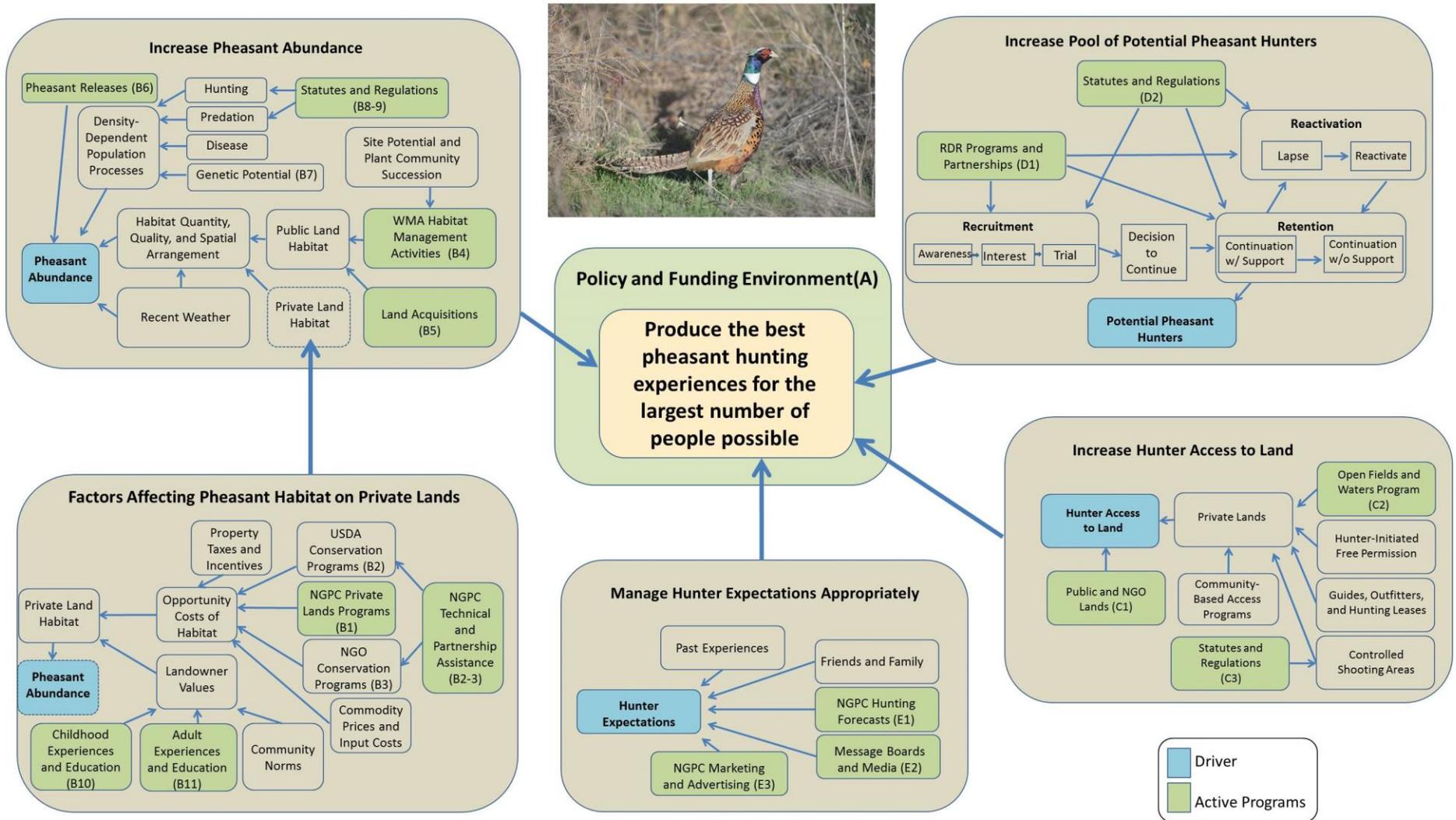
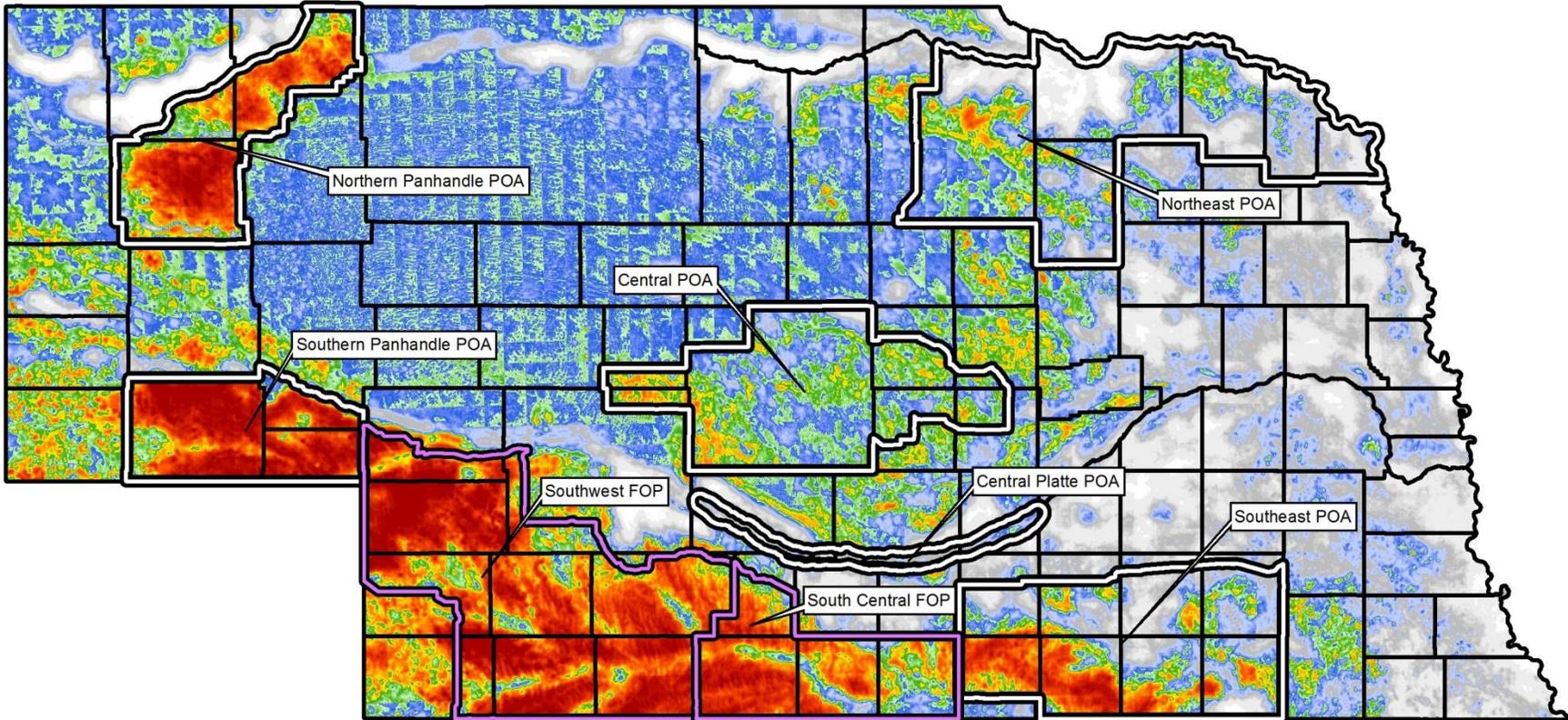


Figure 2. Nebraska Pheasant Habitat Suitability Model and New Focus and Opportunity Areas



Citation: Adapted from Jorgensen et al. 2014

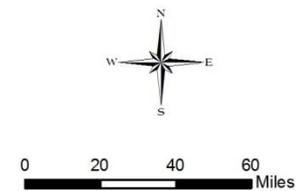


NEBRASKA
- GAME PARKS -

Date: 2/3/2016

Proposed Pheasant Boundaries (Type)

-  Focus on Pheasant Area (FOP)
-  Pheasant Opportunity Area (POA)



Appendix A. Habitat and Hunter Access Goals for Focus Areas and Pheasant Opportunity Areas

Eight regions in the state were picked to focus efforts for habitat management and hunter access, based on concentrating work where it will be most effective based on sound science. Two areas will carry the designation of Focus on Pheasant (FOP) areas and six will be designated as Pheasant Opportunity Areas (POA). The FOP areas are cornerstones of efforts and provide both excellent habitat and hunter access. The POA's were each picked with specific targets in mind. Each area was evaluated for future desired conditions (long term goals) and realistic goals (shorter term goals) that could get the areas to the best condition for pheasants or pheasant hunting. Two of the opportunity areas carry the title "Pheasant and Quail Opportunity Area" to reflect the favorability of their landscapes to manage simultaneously for the two species most popular with our upland game hunters.

Future desired conditions represent what it would take to make the whole region the most suitable for pheasants and hunters if money, manpower, the Farm Bill, and Mother Nature were all cooperating. The Realistic goals represent a more scaled down or focused effort. These goals are based on what the research is telling us we need, our knowledge of the areas, and past experience with the acceptance of various practices and initiatives within these areas.

Acreage goals listed in Tables A1-A9 were formulated based on various sources of information available to us including land cover data (from 2010), priority areas for CRP, existing public access contracts, and habitat suitability models (Jorgensen et al. 2014). Acreage goals for the United States Department of Agriculture's (USDA) Conservation Reserve Program (CRP) retention and mid-contract management were based on actual acres of CRP in each FOP or POA. New CRP acre goals were projected based on need, but will depend on Federal acreage caps and sign up opportunities.

The NGPC Five Year Cost was based on the acreage goals multiplied by an average cost per acre for each practice. Costs illustrate projected needs but do not represent agency budgetary commitments; funds will be committed based on resources available each annual budget cycle. The cost per acre is based on USDA County Average Cost Share rates or incentive rates that have been utilized in the past. The average per year cost assumes that habitat and access will be spread evenly throughout the five year plan. It is more likely that some years will need more dollars than others, especially when a large amount of CRP acres will be expiring, or during a new CRP sign up (general or continuous).

Area Descriptions and Objectives

The Southwest (Table A1) and South Central (Table A2) Focus on Pheasant areas will continue to be the cornerstones of our pheasant habitat efforts. Both of these areas have the right combination of small grains, grasslands, including CRP, and lack of tree cover to create suitable pheasant habitat (Jorgenson et al. 2014). In addition to pheasant habitat, the South Central FOP area has provided optimal habitat for bobwhite quail. Our main objective in these two FOP areas is to maintain the high quality of habitat and continue to provide more access opportunities.

The Northern (Table A3) and Southern Panhandle (Table A4) Pheasant Opportunity Areas also have very suitable habitat according to the Pheasant Suitability model (Jorgenson et al. 2014), but are lacking access opportunities. Our main objective for these areas is to maintain good habitat and provide additional access opportunities. The Commission has had limited success in the Northern Panhandle (north of Alliance) gaining access to small grain and CRP fields, we hope to develop a partnership with

the local economic development group and look for ways to open up more land to hunting. The Southern Panhandle has traditionally provided access opportunities, we will be focusing more energy on gaining access to CRP fields where we are providing financial assistance for upgrades and on small grain stubble fields.

The Northeast Pheasant Opportunity Area (Table A5) was the location of the first private lands Focus on Pheasants effort in 2002 within Stanton and Dixon Counties. The rise in commodity prices in the 2010-2011 changed the landscape significantly, with many of the fields originally in the FOP program being turned back into production. We are starting to hear and see more interest in CRP and shorter term set aside options. Our main objective in this area is to get as much CRP and grass back on the landscape as possible, and tie the financial incentives to providing access. The Realistic Goals are based on working in smaller focal areas where we can tie existing habitat together into a more scaled approach.

The Central Pheasant Opportunity Area (Table A6) is most notable for the long term local community support for habitat work through the One Box Pheasant Hunt group. The Realistic Goals of this area focus on two regions within the opportunity area. The southwest part of Custer County is eligible for CRP Wildlife Priority points, and will likely be one of the focused areas. We will also be focusing on providing a corridor of suitable habitat between the two Wildlife Management Areas (WMA's) of Davis Creek and Sherman Reservoir in the eastern part of the opportunity area. Two big objectives in this area is provide more early successional habitat and to enhance the diversity and structure of existing grasslands.

The Central Platte Pheasant and Quail Opportunity Area (Table A7) includes approximately 5% of its area in conservation partner properties (owned by organizations like the Audubon Society, The Nature Conservancy, the Crane Trust, and Platte River Recovery and Implementation Program). We will continue to work with these groups and especially on our state owned lands to provide quality pheasant and quail habitat opportunities.

The Southeast Pheasant and Quail Opportunity Area (Table A8) is a crossroads of multiple initiatives, with the Meridian Quail Focus area, Rainwater Basin wetlands, and the Sandstone Prairie biologically unique landscape of the Nebraska Natural Legacy Program falling within its boundaries. All of these initiatives are able to enhance the grasslands, wetlands and provide more financial and technical assistance in the area. We will also try to tie some of the financial assistance to hunting access where possible.

In an effort to summarize the detailed information in each area, the totals have been rolled up into some generalized habitat practices (Table A9). The CRP practice includes retaining expiring CRP acres, conducting mid-contract management on existing CRP acres, and enrolling new CRP acres into the continuous or general CRP practices. Small grain stubble is the practice of encouraging farmers to leave their small grain stubble at 14" tall or taller through April 1st. Grassland management is a variety of practices being used on existing grassland stands. The management could be prescribed fire, invasive tree removal, grazing management, shrub establishment, or other practices to help maintain the diversity and structure needed for upland game habitat on existing grasslands. The Central Platte POA will be focusing efforts on Conservation Partner Lands, which will mostly include grassland management on existing (or planted) grasslands. Short Term Set Aside (STSA) involves seeding a low cost small grain seed mix on small acres and then leaving the acres untouched for the next two growing seasons. The sites provide winter cover the first year, and brood cover the next two years. The wetland practice is a

combination of supporting management of new and existing wetlands and the potential of purchasing wetlands from willing sellers in the Rainwater Basin wetland area.

DRAFT

Table A1. Desired future conditions and realistic goals for the Southwest Focus on Pheasants Area (2016-2020).

Desired Future Condition Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	132,000	\$6,750,000	\$36,000,000	\$42,750,000
Small Grain Stubble^a	166,894	\$1,668,942	\$0	\$1,668,942
Grassland Management	167,250	\$10,460,000	\$12,802,500	\$23,262,500
Short Term Set Aside	2,000	\$140,000	\$0	\$140,000
Total Habitat	468,144	\$19,018,942	\$48,802,500	\$67,821,442
Access^a	148,007	\$1,177,337	\$0	\$1,177,337
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 108,124 acres/year Additional CRP 10,000 total acres				

Realistic Goals Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	111,500	\$6,500,000	\$26,775,000	\$33,275,000
Small Grain Stubble^a	83,447	\$100,000	\$0	\$100,000
Grassland Management	34,100	\$947,500	\$1,700,000	\$2,647,500
Short Term Set Aside	500	\$35,000	\$0	\$35,000
Total Habitat	229,547	\$7,582,500	\$28,475,000	\$36,057,500
Access^a	58,500	\$1,752,500	\$0	\$1,752,500
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 18,617 acres/year Additional CRP 5,000 total acres				

Table A2. Desired future conditions and realistic goals for the Southcentral Focus on Pheasants Area (2016-2020).

Desired Future Condition				
Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	42,000	\$3,150,000	\$19,740,000	\$22,890,000
Small Grain Stubble^a	52,758	\$659,478	\$0	\$659,478
Grassland Management	125,400	\$6,545,000	\$8,110,000	\$14,655,000
Short Term Set Aside	12,500	\$1,187,500	\$0	\$1,187,500
Total Habitat	232,658	\$11,541,978	\$27,850,000	\$39,391,978
Access^a	43,995	\$534,595	\$0	\$534,595
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 34,012 acres/year Additional CRP 10,000 total acres				

Realistic Goals				
Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	32,100	\$2,773,000	\$13,057,500	\$15,830,500
Small Grain Stubble^a	17,000	\$100,000	\$0	\$100,000
Grassland Management	32,700	\$1,367,500	\$1,570,000	\$2,937,500
Short Term Set Aside	2,500	\$237,500	\$0	\$237,500
Total Habitat	84,300	\$4,478,000	\$14,627,500	\$19,105,500
Access^a	13,150	\$409,750	\$0	\$409,750
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 3,166 acres/year Additional CRP 4,600 total acres				

Table A3. Desired future conditions and realistic goals for the Northern Panhandle Pheasant Opportunity Area (2016-2020).

Desired Future Condition Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	43,381	\$260,286	\$12,501,450	\$12,761,736
Small Grain Stubble^a	41,762	\$522,019	\$0	\$522,019
Total Habitat	85,143	\$782,305	\$12,501,450	\$13,283,755
Access^a	60,566	\$83,000	\$0	\$83,000
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 56,142 acres/year Additional CRP 2,500 total acres				

Realistic Goals Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	35,661	\$214,965	\$9,027,338	\$9,242,302
Small Grain Stubble^a	16,705	\$0	\$0	\$0
Total Habitat	52,365	\$214,965	\$9,027,338	\$9,242,302
Access^a	24,400	\$392,600	\$0	\$392,600
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 19,977 acres/year Additional CRP 500 total acres				

Table A4. Desired future conditions and realistic goals for the Southern Panhandle Pheasant Opportunity Area (2016-2020).

Desired Future Condition				
Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	84,586	\$507,516	\$19,889,050	\$20,396,566
Small Grain Stubble^a	99,209	\$1,240,113	\$0	\$1,240,113
Grassland Management	1,000	\$150,000	\$150,000	\$300,000
Total Habitat	184,795	\$1,897,629	\$20,039,050	\$21,936,679
Access^a	135,682	\$543,455	\$0	\$543,455
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 127,373 acres/year Additional CRP 0 total acres				

Realistic Goals				
Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	84,587	\$376,000	\$19,889,475	\$20,265,475
Small Grain Stubble^a	39,683	\$0	\$0	\$0
Grassland Management	100	\$30,000	\$15,000	\$45,000
Total Habitat	124,370	\$406,000	\$19,904,475	\$20,310,475
Access^a	10,000	\$155,000	\$0	\$155,000
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 1,691 acres/year Additional CRP 0 total acres				

Table A5. Desired future conditions and realistic goals for the Northeast Pheasant Opportunity Area (2016-2020).

Desired Future Condition				
Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	134,000	\$1,339,996	\$155,599,415	\$156,939,411
Grassland Management	12,500	\$937,500	\$1,500,000	\$2,437,500
Short Term Set Aside	2,000	\$1,620,000	\$0	\$1,620,000
Total Habitat	148,500	\$3,897,496	\$157,099,415	\$160,996,911
Access^a	76,000	\$900,000	\$0	\$900,000
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 68,687 acres/year Additional CRP 70,857 total acres				

Realistic Goals				
Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	88,514	\$885,140	\$96,468,252	\$97,353,392
Grassland Management	750	\$56,250	\$90,000	\$146,250
Short Term Set Aside	300	\$243,000	\$0	\$243,000
Total Habitat	89,564	\$1,184,390	\$96,558,252	\$97,742,642
Access^a	11,000	\$570,000	\$0	\$570,000
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 6,577 acres/year Additional CRP 35,000 total acres				

Table A6. Desired future conditions and realistic goals for the Central Pheasant Opportunity Area (2016-2020).

Desired Future Condition Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	39,087	\$4,186,485	\$29,857,680	\$34,044,165
Small Grain Stubble ^a	45,118	\$187,500	\$0	\$187,500
Grassland Management	110,250	\$2,170,313	\$3,782,500	\$5,952,813
Short Term Set Aside	2,500	\$1,375,000	\$0	\$1,375,000
Total Habitat	196,955	\$7,919,298	\$33,640,180	\$41,559,478
Access ^a	45,318	\$60,000	\$0	\$60,000
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 44,848 acres/year Additional CRP 30,464 total acres				

Realistic Goals Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	9,748	\$805,313	\$5,388,005	\$6,193,318
Small Grain Stubble ^a	500	\$37,500	\$0	\$37,500
Grassland Management	20,750	\$743,750	\$907,500	\$1,651,250
Short Term Set Aside	75	\$41,250	\$0	\$41,250
Total Habitat	31,073	\$1,627,813	\$6,295,505	\$7,923,318
Access ^a	750	\$26,250	\$0	\$26,250
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 280 acres/year Additional CRP 2,500 total acres				

Table A7. Desired future conditions and realistic goals for the Central Platte Pheasant and Quail Opportunity Area (2016-2020).

Desired Future Condition				
Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
Grassland Management	10,000	\$250,000	\$260,000	\$510,000
Conservation Partner Land	15,000	\$4,420,900	\$4,435,900	\$8,856,800
Total Habitat	25,000	\$4,670,900	\$4,695,900	\$9,366,800
Access^a	10,000	\$250,000	\$0	\$250,000
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 9,148 acres/year				

Realistic Goals				
Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
Grassland Management	1,000	\$25,000	\$36,000	\$61,000
Conservation Partner Land	9,450	\$2,058,700	\$0	\$2,058,700
Total Habitat	10,450	\$2,083,700	\$36,000	\$2,119,700
Access^a	1,500	\$37,500	\$0	\$37,500
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 648 acres/year				

Table A8. Desired future conditions and realistic goals for the Southeast Pheasant and Quail Opportunity Area (2016-2020).

Desired Future Condition Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	76,121	\$1,137,936	\$41,607,120	\$42,745,056
Small Grain Stubble ^a	185,333	\$2,316,656	\$0	\$2,316,656
Grassland Management	798,450	\$14,691,500	\$40,214,000	\$54,905,500
Wetlands	3,000	\$12,050,025	\$13,635,000	\$25,685,025
Total Habitat	1,062,904	\$30,196,117	\$95,456,120	\$125,652,237
Access^a	56,599	\$447,048	\$0	\$447,048
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 55,568 acres/year Additional CRP 24,721 total acres				

Realistic Goals Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	28,000	\$1,040,000	\$6,960,000	\$8,000,000
Small Grain Stubble ^a	95,250	\$0	\$0	\$0
Grassland Management	54,000	\$5,275,000	\$2,600,000	\$7,875,000
Wetlands	1,700	\$1,650,025	\$13,635,000	\$15,285,025
Total Habitat	178,950	\$7,965,025	\$23,195,000	\$31,160,025
Access^a	3,630	\$140,200	\$0	\$140,200
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 2,599 acres/year Additional CRP 5,000 total acres				

Table A9. Desired future conditions and realistic goals for all Focus and Opportunity Areas combined (2016-2020).

Desired Future Condition				
Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	551,175	\$17,332,219	\$315,194,715	\$332,526,934
Small Grain Stubble ^a	591,073	\$6,594,708	\$0	\$6,594,708
Grassland Management	1,224,850	\$35,204,313	\$66,819,000	\$102,023,313
Conservation Partner Land	15,000	\$4,420,900	\$4,435,900	\$8,856,800
Short Term Set Aside	19,000	\$4,322,500	\$0	\$4,322,500
Wetlands	3,000	\$12,050,025	\$13,635,000	\$25,685,025
Total Habitat	2,404,098	\$79,924,664	\$400,084,615	\$480,009,279
Access^a	576,166	\$3,995,436	\$0	\$3,995,436
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 503,905 acres/year Additional CRP 148,542 total acres				

Realistic Goals				
Practice	Acres	NGPC Five-Year Cost	USDA Five-Year Cost	Total Cost
CRP	390,110	\$12,594,417	\$177,565,570	\$190,159,987
Small Grain Stubble ^a	252,585	\$237,500	\$0	\$237,500
Grassland Management	143,400	\$8,445,000	\$6,918,500	\$15,363,500
Conservation Partner Lands	9,450	\$2,058,700	\$0	\$2,058,700
Short Term Set Aside	3,375	\$556,750	\$0	\$556,750
Wetlands	1,700	\$1,650,025	\$13,635,000	\$15,285,025
Total Habitat	800,619	\$25,542,392	\$198,119,070	\$223,661,462
Access^a	122,930	\$3,483,800	\$0	\$3,483,800
^a This represents a per-year acreage goal but the cost is equal to a five-year total Additional Access 53,558 acres/year Additional CRP 52,600 total acres				

Table A10. Estimated average annual cost to the NGPC for desired future conditions and realistic goals for all Focus and Opportunity Areas combined (2016-2020).

Desired Future Conditions	Average Annual Cost
Private Land Habitat	\$15,984,933
Hunter Access	\$799,087
Total	\$16,784,020
Realistic Goals	
Habitat	\$5,108,478
WMA Enhancements ^a	\$141,288
Hunter Access	\$696,760
Total	\$5,946,526

^aRepresents work that is over and above baseline management activities for select Wildlife Management Areas (WMA). For more details, See Appendix B.

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Appendix B. Pheasant Habitat Goals for Selected Wildlife Management Areas

Eight regions in the state (Figure 2) were picked to focus efforts for habitat management and hunter access, based on concentrating work where it will be most effective. Within those eight regions, 17 wildlife management areas (WMA's) were selected to implement intensive management for pheasant and quail habitat (Figure B1). Selection of these WMA's was based on favorable landscapes in which they are located, their relatively large size, and their potential for enhancing existing upland game bird populations.

Management plans for these 17 WMA's will consist of an evaluation of the current habitat conditions and determination of future desired conditions. Future desired conditions are what the land managers would like the areas to look like within a 5-year period, to contain the optimum amounts and juxtaposition of habitat types to maximize pheasant and quail production. Realistic goals were established to attain these desired habitat conditions.

Acreage goals, current habitat conditions and annual work plans for each 17 areas are listed in Table B1-B17 and represent current conditions, future desired conditions and the time period needed to reach those desired conditions. Current conditions were obtained from land manager evaluations of current habitat conditions and future desired conditions were based on the best available research and information about pheasant-habitat relationships. Annual work plans provide details on how land managers will attain habitat goals.

Cost figures (see Table B18) were determined by calculating the average cost of vendor contracted work multiplied by the increase in acres treated over a five year time period. Average costs were derived from recent projects costs of these habitat manipulations. Approximately one half of the habitat work will be accomplished by Commission staff and one half will be contracted to private vendors.

Area Descriptions and Objectives

WMA's located within the Southwest and Southcentral Focus on Pheasant areas are Clear Creek WMA (6,118 acres; Table B1), Medicine Creek WMA (8,044 acres; Table B2) and Sacramento-Wilcox WMA (2,313 acres; Table B3). These areas are large in size and contain good interspersions of habitat types required by upland game birds.

There are no designated focus WMA's in the Northern Panhandle and Southern Panhandle Pheasant Opportunity Areas.

WMA's in the Northeast Pheasant Opportunity Area include Elk Point Bend WMA (660 acres; Table B4) and Grove Lake WMA (1,985 acres; Table B5). Grove Lake WMA contains a combination of grassland and woodland cover supporting both quail and pheasant populations. Elk Point Bend is primarily grassland/forb cover supporting pheasant management.

WMA's in the Central Pheasant Opportunity Area include Davis Creek WMA (2,450 acres; Table B6), Pressey WMA (1,579 acres; Table B7) and Sherman WMA (3,180 acres; Table B8). Sherman WMA and Davis Creek WMA are predominantly grassland areas supporting pheasant populations. Pressey WMA contains a combination of grassland, cropland and woody cover to support both pheasant and quail management.

WMA's in the Central Platte Pheasant and Quail Opportunity Area include Pintail WMA (480 acres; Table B9), Bassway Strip WMA (884 acres; Table B10), Cozad WMA (198 acres; Table B11), Darr Strip WMA (981 acres; Table B12), Dogwood WMA (407 acres; Table B13) and North River WMA (681 acres; Table B14). Pintail WMA and North River WMA are technically outside the Central Platte Opportunity Area boundaries, but are included because enhanced management is also desired on these areas. The majority of these areas are long linear areas bounded on the north by Interstate 80 and on the south by the Platte River, which presents some management challenges. Management will focus primarily on quail, which were historically present on these areas.

WMA's in the Southeast Pheasant and Quail Opportunity Area include Alexandria WMA (670 acres; Table B15), Alexandria Southwest WMA (535 acres; Table B15) and Meridian WMA (400 acres; Table B17). These three areas are part of the Meridian Bobwhite Quail Focus Area, which is part of the National Bobwhite Conservation Initiative (NBCI). NBCI seeks to restore bobwhite quail across their North American range and locally through state initiatives where habitat practices are implemented on public and private lands.

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Figure B1. Featured Wildlife Management Areas within Pheasant Focus and Opportunity Areas

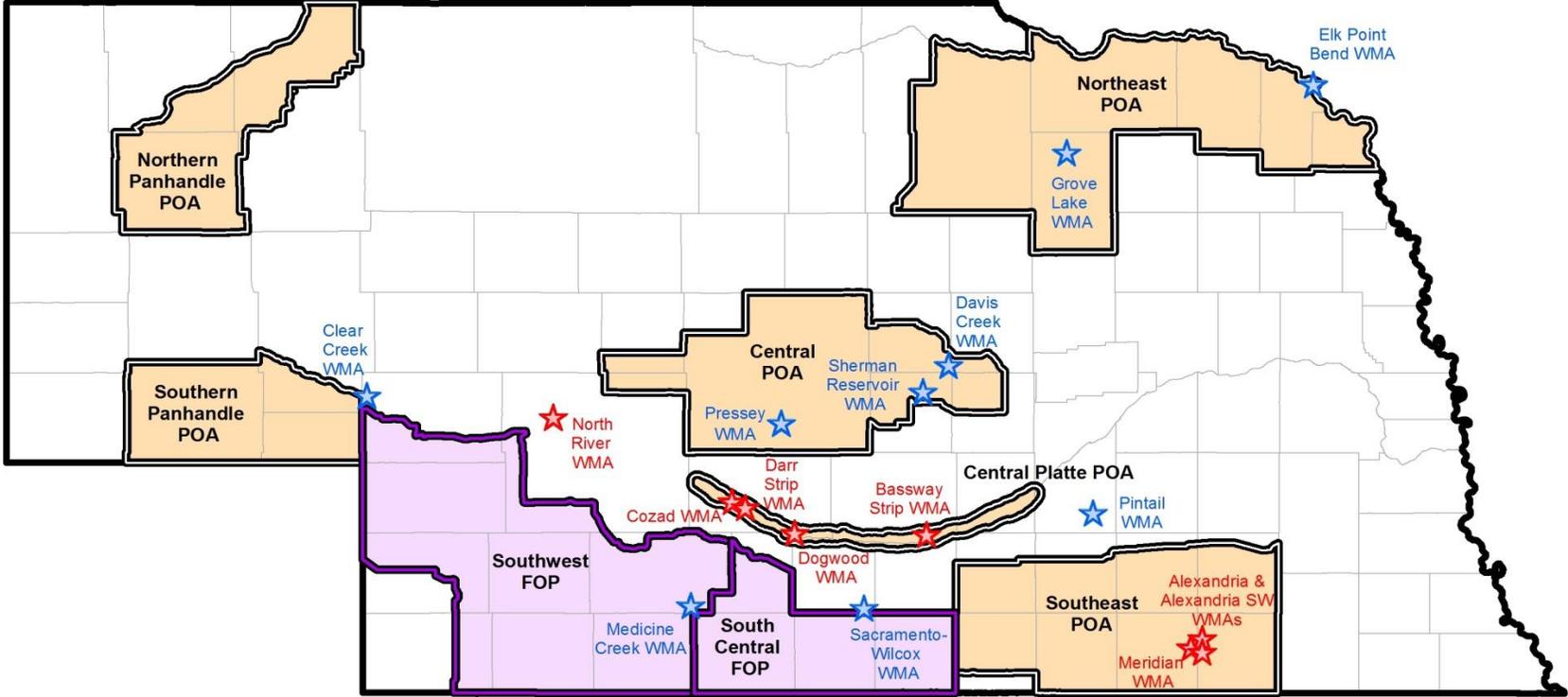


TABLE B1. PHEASANT HABITAT MANAGEMENT- CLEAR CREEK WMA

	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage/Winter cover	Food Plots/Crops Early Succession Rotation	Woodland	Wetland	Misc.
Clear Creek WMA - 6118 acres							
Future Desired Condition	500 ac (28%)	500 ac (28%)	800 ac (44%)	500.0	1,000.0	3,000.0	
Current Condition	273 ac (16%)	465 ac (27%)	1150 ac (57%)	320.0	1,000.0	3,000.0	

DEFINITIONS

Early Seral Stage: The disturbance year and 1 -3 years following disturbance, i.e. burning, grazing, spraying, disking, tilling. Cover is also provided by second year idle crop ground and forb/legume interseeding. Dominated by early successional forbs/legumes.

Mid Seral Stage: 4 - 6 years following disturbance. Not dominated by one vegetation type. Reduced early successional forbs/legumes are present.

Late Seral Stage: > 6 years following disturbance. Dominated by grass or later succession plants. Few forbs/legumes in the stand. Cool season grasses dominate. Includes hay ground for goose browse.

FUTURE DESIRED CONDITION

Major decreases in areas managed for goose browse/late seral stage grass are needed to increase pheasant management. Reduce from a current of 900 acres down to 500 acres (44% or 400 acre decrease) or to a point above where goose use on Clear Creek is not affected. This conversion will increase the number of Early Seral grassland and food/crop/early successional acres (brood rearing cover) acres by 70% (400 acres). This will also allow a transition to some Mid Seral grassland (nesting cover) acres to food and early successional habitat where that habitat is sparse and while still allowing a small increase in nesting cover (8% or 35 acres) where currently there is limited or poor quality nesting habitat (historic goose browse). An additional 250 acres of winter cover (or Late Seral stage) is present in shrub plantings and wetlands and will be increased by 20% (50 acres) over the next 5 years.

ANNUAL WORK PLAN

Vegetation Control – Currently spraying and disking 100+ acres annually, and will increase that to 150+ acres, an annual increase of 33% (50 acres). Desired condition is a variety of habitats in successive stages of treatment to maintain the goal of 500+ acres in the early seral stage.

Prescribed burning will be a major tool in treating retired goose browse areas. Once converted, grasslands will be treated on a 5 year rotation. Fire will be used to treat difficult to burn woodland areas while the lake is high. This is consistent with historic burning on Clear Creek, but will strive to increase annual burning by 500% (220 acres) over recent years.

Grazing – Grazing has been used with limited success on the area in the past. Lack of infrastructure is the main limiting factor. Plan to increase the use of grazing in the future (140 acres per year), but this is contingent on infrastructure.

Food Plots/crops – Currently present are 287 acres of food plots/crops. Attempt to increase 16% annually (50 acres) to a total 500 acres over the next 5 years. Food plots will consist of milo, milo/sunflowers and corn. Crops will be corn, alfalfa and milo.

Haying – Haying has been the main treatment for creating goose browse on the seasonal refuge. Currently 900 acres are hayed annually. Plan to reduce this by nearly 50% to 500 acres over the next 4 years to maintain goose use while increasing habitat for upland species.

Tree Management – Annually maintain about 10 acres of invasive trees control (eastern red cedar and Russian olive) in the river bottom. This level of treatment has kept invasive tree issues at bay. Continue this work plan. Woodlands along the lake will be affected by prescribed fire when/where possible. Fire in the riparian area along the lake has often resulted in a mosaic of openings and an increase in shrubs. Schedule plantings of about 600 American plums in spring of 2016.

Grass/Forb/Legume Planting – Planted acres will be maintained, at 50 acres, in retired goose browse sites that are of limited diversity or have undesirable species. This will be consistent with recent treatments.

<u>WMA</u>	<u>Veg. Control Spraying-Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing-Management</u>	<u>Burn</u>	<u>Haying</u>	<u>Grass/Forb/Legume Planting</u>	<u>Grazing</u>
Clear Creek WMA - 6118 acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	750	350	50	1400	500	250	700.0
- Current Annual	100	300	10	50	900	50	0.0
- Future Annual	150	350	10	270	800	50	140.0
- Years to Accomplish	5	4	5	5	4	5	5.0

TABLE B2. PHEASANT HABITAT MANAGEMENT – MEDICINE CREEK WMA

WMA	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage	Food Plots/Crop Early Succession Rotation	Woodland	Wetland	Misc.
Medicine Creek WMA - 8044 acres							
Future Desired Condition	1526 ac. (35%)	1744 ac. (40%)	1010 ac. (25%)	850 ac.	890 ac.	1865 ac.	0.0
Current Condition	160 ac. (4%)	3400 ac. (78%)	800 ac. (18%)	850 ac.	890 ac.	1865 ac.	0.0

DEFINITIONS

Early Seral Stage: the disturbance year and 1 -3 years following disturbance i.e. burning, grazing, spraying, disking, tilling. Cover is also provided by second year idle crop ground, forb/legume interseeding. Land is dominated by early successional forbs/legumes.

Mid Seral Stage: 4 - 6 years following disturbance. Not dominated by one vegetation type. Reduced early successional forbs/legumes in the stands.

Late Seral Stage: > 6 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes in the stand.

FUTURE DESIRED CONDITION

Increase the amount of grassland functioning primarily as brood rearing cover from 4% to 35% (increase of 1,336 ac.). Brood rearing cover is defined as early seral stage vegetation, especially forbs/legumes, cropland, idle cropland. Decrease the amount of grassland functioning primarily as nesting cover from 78% to 40% (decrease of 1,656 ac.). Nesting cover defined as mid seral stage grass and forb/legumes, as well as alfalfa and winter wheat. Increase the amount of cover primarily functioning as winter cover from 18% to 25% (increase of 290 ac.) over the entire area. Winter cover is provided by late seral stage vegetation such as warm season grasses, tree claims and wetlands. Maintain winter food sources at current levels (890 ac.). Food sources include small grain food plots and agricultural row crops

ANNUAL WORK PLAN

Spraying of cool season exotic grasses will be maintained at 150 acres annually. A prohibition on prescribed burning on this area has resulted in a set-back in controlling smooth brome grass on the area. With the expected re-occurrence of burning and the maintenance spraying, control of invasive plant species should be realized.

Prescribed burning will be implemented on a 5-year rotation to treat 4,360 acres. Ideally it will be coupled with grazing in a patch-burn system.

Grazing will be maintained at approximately 880 acres annually (5-year rotation). Ideally it will be coupled with prescribed burning in a patch-burn system.

Food plots will be maintained at 850 acres annually. Most of these acres (710 acres) are sharecropped in a "milo-winter wheat-fallow-early succession rotation" and 40 acres are maintained in alfalfa. Another 100 acres will be maintained by NGPC as ragweed, milo and millet plots.

Tree clearing will consist of approximately 1,000 acres of grasslands will have invasive exotic trees removed in 2016. Another 200 acres are slated for 2017.

Approximately 16 acres of alfalfa and legumes will be planted in 2016.

<u>WMA</u>	<u>Veg. Control Spraying-Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing-Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/Legume Planting</u>	<u>Grass Seeding</u>
Medicine Creek WMA – 8044 acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	150	850	1200	880	800	16	0.0
- Current Annual	150	850	1000	0.0	800	0.0	0.0
- Future Annual	150	850	200	880	800	16	0.0
- Years to Accomplish	5	5	2	5	5	1	0.0

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TABLE B3. PHEASANT HABITAT MANAGEMENT- SACRAMENTO-WILCOX WMA

	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage	Food Plots/Crops Early Succession Rotation	Woodland	Wetland	Misc.
Sac-Wilcox WMA - 2313 Acres							
Future Desired Condition	243 (38%)	255 (40%)	140 (22%)	425.0	110.0	1,100.0	40.0
Current Condition	325 (52%)	163 (22%)	140 (26%)	400.0	145.0	1,100.0	40.0

DEFINITIONS

Early Seral Stage: The disturbance year and 1 -2 years following disturbance, i.e. burning, grazing, spraying, disking, tilling. Cover is also provided by second year idle crop ground, forb/legume interseeding. Dominated by early succession forbs/legumes.

Mid Seral Stage: 3 - 4 years following disturbance. Not dominated by one vegetation type. Reduced early successional forbs/legumes in the stand.

Late Seral Stage: > 4 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes in the stand.

FUTURE DESIRED CONDITION

Increase the amount of grassland functioning primarily as nesting cover from 22% to 40% (increase of 92 acres). Nesting cover is defined as mid seral stage grass and forb/legumes, as well as legumes and idle small grains. Decrease the amount of grassland functioning primarily as brood rearing cover from 52% to 38% (decrease of 62 acres). Brood rearing is cover defined as early seral stage vegetation, especially forbs/legumes, crop ground, idle crop ground. The amount of cover primarily functioning as winter cover will remain essentially the same. Winter cover is provided by: late seral stage vegetation such as warm season grasses, woodlands and wetlands.

ANNUAL WORK PLAN

Grasslands with severe infestations of smooth brome have been treated with glyphosate for the last 3 years (450 acres) and have responded with increased vigor and diversity of warm season grasses and forbs. Maintenance spraying of brome will be continued, but acreages will be decreased by 50% (decrease of 75 acres) from previous years as these treated areas are in excellent condition.

Prescribed burning will be maintained on approximately 75 acres/year on a 5-year rotation, about the same as is done currently.

Interseeding of legumes will be increased from 15 acres/year to 20 (33% increase). Thirty-one acres of new high-diversity plantings will be planted in retired cropland. This is new management as no new grassland has been planted for several years.

Grazing will be implemented on approximately 80 acres/year, focused on locations where burning and glyphosate treatment are not possible or are not effective. Grazing has not been done for the last few

years as we have been getting excellent early successional results with burning and spraying. The results will be evaluated, and if favorable, a 5-year rotation will be implemented.

The food plot and cropping rotation plan will be continued, with winter wheat being followed with soybeans, then 2 years of milo followed by 1 or 2 years of being idle (annual forbs). Some adjustments to this plan may occur, depending on rainfall, proximity to other fields, etc. There will be an increase of winter food sources by 6% (increase of 25 acres). Food sources include small grain food plots and agricultural row crops.

Approximately 35 acres of tree clearing will be done (a portion of this will be used as edge-feathering for quail habitat) along with maintenance tree clearing in grasslands, an increase of 10 acres annually (40%).

<u>WMA</u>	<u>Veg. Control Spraying- Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing- Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/ Legume Planting</u>	<u>Grass Seeding</u>
Sac-Wilcox WMA - 2313 Acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	375.0	425.0	175.0	375.0	400.0	100.0	31.0
- Current Annual	150.0	400.0	25.0	80.0	0.0	15.0	0.0
- Future Annual	75.0	425.0	35.0	75.0	80.0	20.0	10.0
- Years to Accomplish	5.0	5.0	5.0	5.0	5.0	5.0	3.0

TABLE B4. PHEASANT HABITAT MANAGEMENT- ELK POINT BEND WMA

	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage	Food Plots/Crops Early Succession Rotation	Woodland	Wetland	Misc.
Elk Point Bend WMA - 660 ac.							
Future Desired Condition	70 ac. (20%)	200 ac. (60%)	70 ac. (20%)	150ac.	130 ac	0 ac.	40 ac
Current Condition	70 ac. (20%)	200 ac. (60%)	70 ac. (20%)	200 ac.	80 ac	0 ac.	40 ac

DEFINITIONS

Early Seral Stage: The disturbance year and 1 -3 years following disturbance, i.e. burning, grazing, spraying, disking, tilling. Cover is also provided by second year idle crop ground, forb/legume interseeding. Dominated by early successional forbs/legumes.

Mid Seral Stage: 4 - 6 years following disturbance. Not dominated by one vegetation type. Reduced early successional forbs/legumes in the stand.

Late Seral Stage: > 6 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes in the stand.

FUTURE DESIRED CONDITION

At this time Elk Point Bend WMA is functioning very well for grassland birds. Prior to Game Commission ownership a cropping history was present on over 90% of this property. This cropping history allowed managers to start with a blank slate. Few exotic species were present and desirable vegetation quickly established. 340 acres of highly diverse grasslands have been established with annual weeds and perennial forbs well represented. What is unique about this tract is how heterogeneity has helped each acre meet the life needs of grassland birds. Approximately 60% of this habitat will be maintained in mid seral stage of succession and function very well as both nesting and brood rearing cover. The remaining 40% will fluctuate between early and late seral stage habitat as disturbances are incorporated. Early and Late seral stages work to accommodate nesting, roosting, and brood rearing requirements of grassland species. Food plots have been established and are included in the early succession rotation. This rotation should provide a large food source with the abundant annual weeds and high volume of small grains. It will also function much like early seral stage grassland providing nesting, brood rearing, and roosting covers for grassland species. The Missouri River borders this property and maintains a high flow volume. In the last 15 years the river has already taken approximately 20 acres off of the east boundary. Allowing a cottonwood riparian buffer to establish will help prevent further bank degradation. An additional 50 acres of early succession habitat will be allowed to revert back to late seral stage to fully establish the riparian woodland corridor. The remaining 40 acres includes parking lots and sand bar habitat. This sand bar is periodically sprayed by the Corps of Engineers to prevent vegetation from establishing and to provide nesting habitat for interior least tern and piping plover.

ANNUAL WORK PLAN

Annual work plans will focus on maintaining the existing percentages. Smooth brome grass and exotic tree species will be the main focus for management actions as they are starting to cause habitat degradation.

Fall vegetation spraying with glyphosate will be initiated as brome grass starts to encroach on grassland habitats. Two herbicide applications, one spring and one fall, are planned for 10 acres annually. A third pass may be scheduled in year 4 or 5 of this rotation. At this time disking will not be used in the grassland tract as diversity remains high and exotic species remain isolated.

Tree and shrub control will be accomplished with the initiation of summer herbicide applications to the foliage and basal bark. The herbicide treatments will increase 50% to 30 acres in 2016 and maintained for the next 5 years. The prescribed burn rotation will help keep the trees in check.

A prescribed burning rotation will be initiated in 2016. This burn rotation should be completed within 5 years and cover 630 acres. On average staff will burn approximately 126 acres annually with the initial focus occurring where trees are becoming a problem. The largest percentages of trees are in the sapling to four foot stage.

Grass seeding will emulate vegetation spraying management practices. A native mix of grasses and forbs will be seeded once the second application of herbicide has been completed.

Grazing will not be used in a specific annual rotation but in conjunction with prescribe burning to help set back late seral stage and exotic cool season grasses. This management activity will be ready for implementation by spring 2017. Short duration high intensity grazing will be used on a maximum of 400 acres and implemented every three years.

Establishment of food plots, legumes and early successional fields will be maintained. Food plots included in the early succession rotation will involve 50 acres. Annually 50 acres of this tract will be disturbed and planted to a milo, sunflower, and clover mix. Each year a different portion of the tract will be disturbed with the rotation being repeated after the third year.

<u>WMA</u>	<u>Veg. Control Spraying-Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing-Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/Legume Planting</u>	<u>Grass Seeding</u>
Elk Point Bend WMA - 660 acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	50.0	50.0	120.0	630.0	400.0	0.0	50.0
- Current Annual	0.0	50.0	20.0	126.0	0.0	0.0	0.0
- Future Annual	10.0	50.0	30.0	126.0	400.0	0.0	10.0
- Years to Accomplish	5.0	3.0	4.0	5.0	every 3 yr		5.0

TABLE B5. PHEASANT HABITAT MANAGEMENT- GROVE LAKE WMA

	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage	Food Plots/Crops Early Succession Rotation	Woodland	Wetland	Misc.
Grove Lake WMA - 1985 ac.							
Future Desired Condition	570 ac. (57%)	240 ac. (24%)	50 ac. (5%)	140 ac	900.0	0 ac.	108.0
Current Condition	270 ac. (27%)	500 ac. (50%)	100 ac. (10%)	130 ac.	900.0	0 ac.	108.0

DEFINITIONS

Early Seral Stage: The disturbance year and 1 -3 years following disturbance, i.e. burning, grazing, spraying, disking, tilling. Cover is also provided by second year idle crop ground, forb/legume interseeding. Dominated by early successional forbs/legumes.

Mid Seral Stage: 4 - 6 years following disturbance. Not dominated by one vegetation type. Reduced early successional forbs/legumes in the stand.

Late Seral Stage: > 6 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes in the stand.

FUTURE DESIRED CONDITION

Increase the amount of early seral stage grassland functioning primarily as nesting/brood rearing cover from 27% to 57% (increase of 300 acres). Decrease the amount of mid seral stage grassland functioning as nesting/brood rearing cover as well as winter/escape cover from 50% to 24% (decrease of 260 acres). Decrease in these acres is due to disturbance that will shift to early seral stage. Reduce the amount of cover primarily functioning as winter cover from 10% to 5% (decrease of 50 acres) over the entire area. Winter cover is provided by late seral stage vegetation such as warm season grasses. Adequate winter cover is available in the form of renovated shelter belts, food plots and un-renovated shelter belts, which are adequately distributed throughout the area.

ANNUAL WORK PLAN

There are 360 acres of converted successional grassland and 500 acres of native grassland on the area. Over the next 5 years, all 360 acres (70 acres per year will be treated vs the current 50 acres, a 40% or 20 acre increase) of converted successional will be treated with herbicide and disking if needed to set back smooth brome and crown vetch encroachment.

Prescribed burning will be implemented on a 3-4 year rotation on converted successional grasslands (360 acres) and 5 year rotation on native grasslands (500 acres) On average, 200 acres per year will be burned vs the 150 acres burned annually currently, an annual increase of 33% (50 acres). The native grassland areas will each be burned once over the next 5 years, with 260 acres of it being grazed immediately after burning.

Grazing will be initiated on the east side of the lake immediately following a burn once over the next 5 years to treat 260 acres.

There are currently 130 acres of food plots, idle crops and crops on the area; of which 90 acres is a corn soybean rotation to accommodate a high deer population. It is desired to go to a corn, soybean, and milo rotation on these 90 acres to add a small grain. 10 acres of converted successional grassland will be converted to alfalfa to provide nesting/brood rearing cover.

Tree removal will continue on the area to open up grassland habitat. 150 acres of trees will be removed over the next 2 years (75 acres per year compared to 25 acres currently, a 300% increase).

Of the 360 acres of converted grasslands, 300 of those acres will be inter-seeded with forbs (60 acres per year treated vs the current 40 acres, a 50% increase) to increase forb diversity.

<u>WMA</u>	<u>Veg. Control Spraying- Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing- Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/ Legume Planting</u>	<u>Grass Seeding</u>
Grove Lake WMA – 1985 acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	350.0	140.0	150.0	750.0	260.0	300.0	0.0
- Current Annual	50.0	130.0	25.0	150.0	0.0	40.0	0.0
- Future Annual	70.0	140.0	75.0	200.0	260.0	60.0	0.0
- Years to Accomplish	5.0	5.0	2.0	4.0	5.0	5.0	0.0

TABLE B6. PHEASANT HABITAT MANAGEMENT- DAVIS CREEK WMA

	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage	Food Plots/Crops Early Succession Rotation	Woodland	Wetland	Misc.
Davis Creek WMA - 2450 ac.							
Future Desired Condition	831 ac. (35%)	950 ac. (40%)	594 ac. (25%)	50 ac.	23 ac.	0 ac.	2.0 ac
Current Condition	335 ac. (14%)	562 ac. (23%)	1512 ac. (63%)	16 ac.	23 ac.	0 ac.	2.0 ac

DEFINITIONS

Early Seral Stage: The disturbance year and 1 -3 years following disturbance, i.e. burning, grazing, spraying, disking, tilling. Cover is also provided by second year idle crop ground, forb/legume interseeding. Dominated by early successional forbs/legumes.

Mid Seral Stage: 4 - 6 years following disturbance. Not dominated by one vegetation type. Reduced early successional forbs/legumes in the stand.

Late Seral Stage: > 6 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes in the stand.

FUTURE DESIRED CONDITION

Increase the amount of grassland functioning primarily as nesting cover from 23% to 40% (increase of 388 acres). Nesting cover defined as mid seral stage grass and forb/legumes, as well as legumes and idle small grains. Increase the amount of grassland functioning primarily as brood rearing cover from 14% to 35% (increase of 496 acres). Brood rearing is cover defined as early seral stage vegetation, especially forbs/legumes, crop ground, idle crop ground. Reduce the amount of cover primarily functioning as winter cover from 63% to 25% (decrease of 918 acres) over the entire area. Winter cover is provided by: late seral stage vegetation such as warm season grasses, woodlands and wetlands. Increase winter food sources by 300% (increase of 34 acres). Food sources include small grain food plots and agricultural row crops.

ANNUAL WORK PLAN

Some grassland has become dominated by smooth brome grass, partly due to a prohibition on prescribed burning. Vegetation spraying with glyphosate will be increased by 100% at the current annual rate (increase of 230 acres) using ground application or by 200% (increase of 460 acres) if aerial application can be utilized. Disking grassland to create early successional habitat is not practical because disturbing soil results in noxious weed infestations.

Prescribed burning, if authorized by BOR, will be implemented on a 5 year rotation to treat 1512 acres.

There is approximately 1,160 acres being grazed on the east side of the area. There are 8 paddocks in a 4 year rotation creating early seral stage and idle acres creating mid seral stage each year. Grazing will

be increased annually by 100% (260 acres) by implementing a rotation on the west side of the area. Water sources will be needed to be developed to expand grazing to this area, by expanding an existing water pipeline or installing new solar wells. If grazing is not an option then early and mid-seral stage requirements can be met by using prescribed fire and glyphosate treatments as an alternative option.

Establishment of food plots, legumes and early successional fields will increase by 300 % (increase of 35 acres). Establishment of food plots or crops are limited due to large amounts of native prairie that will not be cultivated, as well as steep slopes and rocky soil which limits cultivation.

Tree clearing will be conducted on 50 acres annually in the next 2 years. Future invasive cedar trees will be controlled by mechanical removal and prescribe fire.

Grass/Forb Plantings will increase annually by approximately 100% (increase of 35 acres) to help establish a higher diversity of species and help with noxious weed competition. These planting will be in conjunction with another practice such as prescribe fire or a glyphosate application.

<u>WMA</u>	<u>Veg. Control Spraying-Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing-Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/Legume Planting</u>	<u>Grass Seeding</u>
Davis Creek WMA - 2450 acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	2,000.0	50.0	100.0	1,512.0	1,160.0	300.0	0.0
- Current Annual	170.0	16.0	40.0	0.0	260.0	40.0	0.0
- Future Annual	400.0	20.0	50.0	302.0	520.0	75.0	0.0
- Years to Accomplish	5.0	3.0	2.0	5.0	3.0	4.0	0.0

TABLE B7. PHEASANT HABITAT MANAGEMENT- PRESSEY WMA

	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage	Food Plots/Crops Early Succession Rotation	Woodland	Wetland	Misc.
Pressey WMA - 1579 acres							
Future Desired Condition	570 (35%)	650 (40%)	272 (17%)	140 (7.5%)	75.0	25(.5%)	
Current Condition	900 (55%)	300 (18%)	260 (16%)	140 (7.5%)	75.0	25 (.5%)	

DEFINITIONS

Early Seral Stage: the disturbance year and 1 -3 years following disturbance i.e. burning, grazing, spraying, disking, tilling. Cover is also provided by second year idle crop ground, forb/legume interseeding. Dominated by early successional forbs/legumes.

Mid Seral Stage: 4 - 6 years following disturbance. Not dominated by one vegetation type. Reduced early successional forbs/legumes in the stand.

Late Seral Stage: > 6 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes in the stand. Maintain ratio of 35% brood rearing cover, 40% nesting cover & 25% winter cover (grassland late seral, food plots, wetlands, brushy draws).

FUTURE DESIRED CONDITION

Increase the amount of grassland functioning primarily as nesting cover from 18% to 40% (increase of 350 ac.). Nesting cover defined as mid seral stage grasses/ forb/legumes, with adequate residual cover (12" more in height). Decrease the amount of grassland functioning primarily as brood rearing cover from 55% to 35% (reduction of 330 ac.). Brood rearing is cover defined as early seral stage vegetation, diversity of native grasses, annuals, and especially forbs/legumes (introduced & native). Maintain the amount of cover primarily functioning as winter cover at 25% over the entire area. Winter cover is provided by: late seral stage vegetation such as warm season grasses, mixed grass prairie, brushy draws, wetlands and food plots. Maintain winter food sources at 140 acres. Food sources include: agricultural row-crops (milo), small grain food plots, and annual weeds.

ANNUAL WORK PLAN

Since 2008, there has been an aggressive program of habitat treatments on some grassland with a high component of smooth brome grass and Kentucky bluegrass. Habitat management techniques utilized include: disking and inter-seeding, prescribed fire, patch-burn grazing, and herbicide treatments and grazing management. The increase of nesting cover in mid seral grasslands will be accomplished by adding a year or two of rest within the current graze rotation reduction of 200 acres annually, modest reduction (38%) of vegetation control by 50 acres and small reduction of prescribe fire by 50 acres annually. Within a relatively short period of time this reduction in acres will meet the 40% nesting cover goal. It is important to maintain a pro-active vegetation disturbance regime due to the aggressive nature of brome grass encroachment into grasslands. This decrease in acres of disking and spraying is to settle in a maintenance control program.

Prescribed burning will continue with a 5 year rotation to treat 750 acres. This is an annual decrease of 50 ac. (decrease of 25%).

Tree clearing will be increased by 17 acres (32%) annually for 3 years. The majority of grasslands have had cedars removed from grasslands after this treatment.

Grazing will be decreased annually by 200 acres (decrease of 31%) by implementing an extra year or two of rest within the current rotation Patch-Burn Grazing will occur in a two pasture rotation - grazed two years & rested two years. Patch-burn graze rotation is a system that involves burning in patches within the grazed area. The burn sites attract and concentrate livestock to these areas. By concentrating cattle at these sites it will create vegetation structure and composition that will be suitable habitat for grassland birds.

Food plots/agricultural acres (140 acres) will be maintained at current levels. Expansion of food plots is limited due to topography, equipment access, soil conditions and native mixed grass prairie. Rotation is milo; one year annual weeds & two year annual weeds.

Grass/forb/legume planting of 50 acres will be completed in one year. The majority of the grassland currently has high diversity plant species.

Woodland acres are not included in total pheasant acres due to species composition and structure of this habitat type. These acres serve as deer & turkey habitat.

WMA	<u>Veg. Control</u> <u>Spraying-</u> <u>Disking</u>	<u>Food plot</u> <u>Ag</u> <u>Crop</u>	<u>Tree</u> <u>Clearing-</u> <u>Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/</u> <u>Legume</u> <u>Planting</u>	<u>Grass</u> <u>Seeding</u>
Pressey WMA – 1579 acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	400.0	140.0	210.0	750.0	2,275.0	50.0	0.0
- Current Annual	130.0	140.0	53.0	200.0	655.0	5.0	0.0
- Future Annual	80.0	140.0	70.0	150.0	455.0	50.0	0.0
- Years to Accomplish	5.0	5.0	3.0	5.0	5.0	1.0	0.0

TABLE B8. PHEASANT HABITAT MANAGEMENT- SHERMAN RESERVOIR WMA

	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage	Food Plots/Crops Early Succession Rotation	Woodland	Wetland	Misc.
Sherman Reservoir - 3180 acres							
Future Desired Condition	1390 (35%)	1590 (40%)	600 (17%)	315 (7%)	150 (3%)	5.0	
Current Condition	2200 (55%)	655 (16%)	650 (17%)	315 (7%)	150 (3%)	5.0	

DEFINITIONS

Early Seral Stage: The disturbance year and 1 -3 years following disturbance, i.e. burning, grazing, spraying, disking, tilling. Cover is also provided by second year idle crop ground, forb/legume interseeding. Dominated by early successional forbs/legumes.

Mid Seral Stage: 4 - 6 years following disturbance. Not dominated by one vegetation type. Reduced early successional forbs/legumes in the stand.

Late Seral Stage: > 6 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes in the stand. Maintain ratio of 35% brood rearing cover, 40% nesting cover & 25% winter cover (grassland late seral, food plots & woodlands/brushy draws).

FUTURE DESIRED CONDITION

Increase the amount of grassland functioning primarily as nesting cover from 16% to 40% (increase of 935 ac.). Nesting cover defined as mid seral stage grasses/ forb/legumes, with adequate residual cover (12" more in height). Decrease the amount of grassland functioning primarily as brood rearing cover from 55% to 35% (reduction of 810 acres). Brood rearing is cover defined as early seral stage vegetation, diversity of native grasses, annuals, and especially forbs/legumes (introduced & native) and idle crop ground. Maintain the amount of cover primarily functioning as winter cover at 25% over the entire area. Winter cover is provided by: late seral stage vegetation such as warm season grasses, woodlands/brushy draws, wetlands and food plots. Maintain winter food sources at 315 acres. Food sources include: agricultural row-crops (corn, soybeans), small grain food plots, food plots (milo) and annual weeds.

ANNUAL WORK PLAN

Since 2003 there has been an aggressive treatment on grasslands with a high component of smooth brome grass and Kentucky bluegrass. Habitat management techniques utilized include disking, disking & inter-seeding, prescribe fire, herbicide treatments, inter-seeding grasslands and grazing management. The increase of nesting cover in mid seral grasslands will be accomplished by adding a year or two of rest within the current graze rotation reduction of 100 acres annually and a reduction of prescribed fire by 100 acres annually and reduction of vegetation control 100 acres annually. Within a three year time period the reduction of acres of vegetation control, fire and grazing will increase mid seral grasslands by 850 acres. Due to the aggressive nature of smooth brome encroachment in grasslands it is important to maintain an adequate vegetative disturbance program.

Prescribed burning will continue on a 5 year rotation to treat 1625 acres. This is a reduction of 100 acres annually (decrease of 33%).

Vegetation Control - decrease of 100 acres annually, 33% decrease; decrease will be combination of disking & spraying acres.

Grazing will be decreased 33% annually (decrease of 100 acres) by implementing a rotation with an increase of a one to two year rest period within the existing rotation. Current graze rotations; 3 pastures 3 year grazed once in 3 year; two pastures grazed two years & rested two years.

Food plots/ agriculture acres will be maintained at current levels. Expansion of food plots is limited due to topography, equipment access, soil conditions and native prairie. Food plots/agriculture land rotated crop/weeds maintain at least 25% early succession.

Grass/forb/plantings, planting 40 acres annually in order to maintain previously planted acres in high diversity, high quality vegetation acres as plantings age vegetation disturbance (disking, burning, graze etc.) can rejuvenate plantings. However sometime it comes to a point where plantings don't respond to disturbance very well by increasing plant species diversity and sometimes starting over if more feasible.

Tree clearing will encompass 150 acres, by an increase of 25 acres annually, increase 20%; within a two year period. The majority of acres have been treated, and maintenance clearing will be undertaken in future.

<u>WMA</u>	<u>Veg. Control Spraying- Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing- Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/ Legume Planting</u>	<u>Grass Seeding</u>
Sherman Reservoir – 3180 acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	1,500.0	315.0	300.0	1,625.0	1,250.0	200.0	0.0
- Current Annual	400.0	315.0	125.0	425.0	350.0	40.0	0.0
- Future Annual	300.0	315.0	150.0	325.0	250.0	40.0	0.0
- Years to Accomplish	5.0	5.0	2.0	5.0	5.0	5.0	0.0

TABLE B9. PHEASANT HABITAT MANAGEMENT – PINTAIL WMA

WMA	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage	Food Plots/Crops Early Succession Rotation	Woodland	Wetland	Misc.
Pintail WMA - 480 ac.							
Future Desired Condition	45 ac. (35%)	52 ac. (40%)	33 ac. (25%)	20.0	0.0	330.0	
Current Condition	30 ac. (22%)	46 ac. (33%)	62 ac. (45%)	12.0	0.0	330.0	

DEFINITIONS

Early Seral Stage: the disturbance year and 1 -3 years following disturbance i.e. burning, grazing, spraying, disking, tilling. Cover is also provided by second year idle crop ground, forb/legume interseeding. Land is dominated by early successional forbs/legumes.

Mid Seral Stage: 4 - 6 years following disturbance. Not dominated by one vegetation type. Reduced early successional forbs/legumes in the stand.

Late Seral Stage: > 6 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes in the stand.

FUTURE DESIRED CONDITION

Increase the amount of grassland functioning primarily as nesting cover from 33% to 40% (increase of 6 ac.). Nesting cover defined as mid seral stage grass and forb/legumes, as well as legumes and idle small grains. Increase the amount of grassland functioning primarily as brood rearing cover from 22% to 35% (increase of 15 acres). Brood rearing is cover defined as early seral stage vegetation, especially forbs/legumes, crop ground, idle crop ground. Reduce the amount of cover primarily functioning as winter cover from 45% to 25% (decrease of 29 acres) over the entire area. Winter cover is provided by: late seral stage vegetation such as warm season grasses, woodlands and wetlands. Increase winter food sources by 40% (increase of 8 acres). Food sources include small grain food plots and agricultural row crops.

ANNUAL WORK PLAN

Some grassland has been invaded by smooth brome grass. Approximately 80 acres of grassland were treated with glyphosate in 2015. Grassland will be maintained with continued spraying of 30 acres per year to control brome. Disking of grassland will be a new management tool used on the area. Approximately 20 acres will be disked annually. Vegetation management, utilizing spraying and disking will increase annually by 60% (increase of 20 acres).

Prescribed burning will be maintained on a 5 year rotation to treat 120 acres.

Grazing will include 330 acres of wetland habitat split in 2 sections with 165 acres grazed for 2 years and then rotating to the other half of the wetland, grazing the other 165 acres for 2 years. Approximately 30 acres of upland grassland will be included in each rotation. Grazing will increase annually by 15% (increase of 30 acres).

Milo food plots are annually planted on the area and will be increased annually, for the next two years, by 40% (increase of 8 acres).

Trees do not constitute a problem on the area. A 13 acre tree clearing project is planned on the north edge of the wetland in 2016. The equivalent of 1 acre of trees will be removed annually to maintain condition of grasslands.

A total of 14 acres of forb/legume plantings will be added to the area over a two year period.

<u>WMA</u>	<u>Veg. Control Spraying-Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing-Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/Legume Planting</u>	<u>Grass Seeding</u>
Pintail WMA - 480 acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	100.0	20.0	13.0	120.0	390.0	28.0	0.0
- Current Annual	30.0	12.0	1.0	40.0	165.0	0.0	0.0
- Future Annual	50.0	20.0	13.0	40.0	195.0	14.0	0.0
- Years to Accomplish	2.0	2.0	1.0	3.0	4.0	2.0	0.0

TABLE B10. PHEASANT & QUAIL HABITAT MANAGEMENT- BASSWAY STRIP WMA

	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage	Food Plots/Crops Early Succession Rotation	Woodland	Wetland	Misc.
Bassway Strip WMA - 884 ac.							
Future Desired Condition	75 ac. (50%)	75 ac. (50%)	0 ac. (0%)	83 ac.	432 ac.	190 ac.	6 ac.
Current Condition	133 ac. (89%)	13 ac. (9%)	4 ac. (2%)	151 ac.	432 ac.	190 ac.	6 ac.

DEFINITIONS

Early Seral Stage: The disturbance year and 1 -3 years following disturbance, i.e. burning, grazing, spraying, disking, tilling. Cover is also provided by second year idle crop ground, forb/legume interseeding. Dominated by early successional forbs/legumes.

Mid Seral Stage: 4 - 6 years following disturbance. Not dominated by one vegetation type. Reduced early successional forbs/legumes in stand.

Late Seral Stage: > 6 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes are present.

FUTURE DESIRED CONDITION

Increase the amount of grassland functioning primarily as nesting cover from 9% to 50% (increase of 62 acres). Nesting cover defined as mid seral stage grass and forb/legumes, as well as legumes and idle small grains. Decrease the amount of grassland functioning primarily as brood rearing cover from 89% to 50% (decrease of 58 acres). Brood rearing is cover defined as early seral stage vegetation, especially forbs/legumes, crop ground, idle crop ground. Reduce the amount of grassland primarily functioning as winter cover from 4% to 0% (decrease of 4 acres). Woodland vegetation will be managed at 25% (108 acres) early seral stage, 50% (266 acres) mid seral stage, and 25% (108 acres) at late seral stage. Woodland vegetation will add another 30% (108 ac.) of winter food sources across the entire area and will also add 254% (266 acres) of nesting and winter cover. Winter cover for quail is provided by mid seral stage vegetation and idle food plots. Food sources include early successional vegetation, small grain food plots and to a lesser extent mid seral stage vegetation. Total provided nesting and brood rearing cover for bobwhite quail will be 341 acres and 191 acres, respectfully, encompasses 89% of the WMA.

ANNUAL WORK PLAN

Grasslands have been dominated by smooth brome grass in the past and all acres have recently been sprayed and/or disking within the last two years and converted to early successional habitat, which is why the percentage of early seral stage is currently high. Large cedar tree clearing projects have also recently taken place within the last 2 years and so the majority of woodland vegetation is currently classified as early seral stage. Sprayed and/or disking grassland acres will be increased annually by 50% (10 acres) by using a 4-6 year rotation depending on how quickly smooth brome infestation occurs as well as how fast the forb component in the grassland decreases.

Prescribed burning will be increased annually by 116% (35 acres) by using a 4-5 year rotation to treat 150 acres of grassland and 175 acres of woodland acres. Woodland acres are contingent on firebreak construction and additional cedar tree removal projects. As always, burning is weather dependent and especially important on this WMA because of its proximity to Interstate 80.

Grazing will be increased annually by 21% (14 acres) by implementing a 4-5 year rotation throughout the area where grazing is feasible (i.e. fencing issue with the river and water sources). Fence infrastructure will be needed to be developed to expand grazing.

Establishment of food plots will be maintained at 8 acres because a large amount of the area consists of sandy soil that is not productive for crop production.

Large scale cedar removal projects have taken place in 2015 and will continue into 2016 and 2017 to remove approximately 58 acres of cedar trees annually. Removal of grey dogwood and planting of shrubs will take place to enhance quail brood rearing cover.

Legumes and early successional fields will increase annually by 87% (increase of 26 acres) over a period of 5 years. Majority of additional sites that will be inter-seeded with legumes or managed as Early Successional habitat are contingent on cedar tree clearing projects.

<u>WMA</u>	<u>Veg. Control Spraying- Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing- Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/ Legume Planting</u>	<u>Grass Seeding</u>
Bassway Strip WMA - 884 ac.	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	150.0	8.0	115.0	325.0	400.0	130.0	15.0
- Current Annual	20.0	8.0	150.0	30.0	66.0	10.0	0.0
- Future Annual	30.0	8.0	58.0	65.0	80.0	26.0	5.0
- Years to Accomplish	5.0	5.0	2.0	5.0	5.0	5.0	3.0

TABLE B11. PHEASANT & QUAIL HABITAT MANAGEMENT- COZAD WMA

	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage	Food Plots/Crops Early Succession Rotation	Woodland	Wetland	Misc.
Cozad WMA - 198 ac.							
Future Desired Condition	17.5 ac. (50%)	17.5 ac. (50%)	0 ac. (0%)	39 ac.	100 ac.	59 ac.	2 ac.
Current Condition	27 ac. (77%)	8 ac. (23%)	0 ac. (0%)	37 ac.	100 ac.	59 ac.	2 ac.

DEFINITIONS

Early Seral Stage: The disturbance year and 1 -3 years following disturbance, i.e. burning, grazing, spraying, disking, tilling. This cover is also provided by second year idle crop ground, forb/legume interseeding. Dominated by early successional forbs/legumes.

Mid Seral Stage: 4 - 6 years following disturbance. Not dominated by one vegetation type. Reduced early successional forbs/legumes in the stand.

Late Seral Stage: > 6 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes in the stand.

FUTURE DESIRED CONDITION

Increase the amount of grassland functioning primarily as nesting cover from 23% to 50% (increase of 9.5 acres). Nesting cover defined as mid seral stage grass and forb/legumes, as well as legumes and idle small grains. Decrease the amount of grassland functioning primarily as brood rearing cover from 77% to 50% (decrease of 9.5 acres). Brood rearing is cover defined as early seral stage vegetation, especially forbs/legumes, crop ground, idle crop ground. Maintain the amount of grassland primarily functioning as winter cover at 0%. Woodland vegetation will be managed at 35% (35 acres) early seral stage, 50% (50 acres) mid seral stage, and 15% (15 acres) at late seral stage. Woodland vegetation will add 35 acres of winter food sources across the entire area and will also add 50 acres of nesting and winter cover. Winter cover for quail is provided by mid seral stage vegetation and idle food plots. Food sources include early successional vegetation, small grain food plots and to a lesser extent mid seral stage vegetation.

ANNUAL WORK PLAN

Grasslands have been dominated by smooth brome grass in the past and all acres have recently been sprayed and/or disking within the last 2 years and converted to early successional habitat, which is why the percentage of early seral stage is currently high. Large cedar tree clearing projects have also recently taken place within the last 3 years and so the majority of woodland vegetation is currently classified as early seral stage. Sprayed and/or disking grassland acres will be increased annually by 75% (7.5 acres) using a 4-6 year rotation depending on how quickly smooth brome infestation occurs as well as how fast the forb component in the grassland decreases.

Prescribed burning will be initiated to burn 24 acres annually using a 4-5 year rotation to treat 35 acres of grassland and 85 acres of woodland acres. Burning woodland acres are contingent on firebreak

construction and additional cedar tree removal projects. As always, burning is weather dependent and especially important on this WMA because of its proximity to Interstate 80.

Grazing will be initiated to burn 40 acres annually by implementing a 4-5 year rotation throughout the area where grazing is feasible (i.e. fencing issue with the river and water sources). Fence infrastructure will be needed to be developed to expand grazing.

Establishment of food plots will be increased annually by 100% (1 acre) over 3 years. A large amount of the area consists of sandy soil that is not productive for crop production, so more food plots is not feasible on the WMA.

Tree clearing in recent years has removed most invading species. Maintenance operations will take place on approximately 5 acres annually to keep invading species off the area.

Legumes and early successional fields will increase annually by 137% (increase of 20.5 acres) over a period of 2 years. Majority of additional sites that will be inter-seeded with legumes or managed as Early Successional habitat are contingent on cedar tree clearing projects.

<u>WMA</u>	<u>Veg. Control Spraying- Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing- Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/ Legume Planting</u>	<u>Grass Seeding</u>
Cozad WMA - 198 acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	35.0	4.0	10.0	120.0	120.0	35.0	0.0
- Current Annual	10.0	2.0	60.0	0.0	0.0	5.0	0.0
- Future Annual	17.5	1.0	5.0	24.0	40.0	18.0	0.0
- Years to Accomplish	2.0	3.0	2.0	5.0	3.0	2.0	0.0

TABLE B12. PHEASANT & QUAIL HABITAT MANAGEMENT- DARR STRIP WMA

	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage	Food Plots/Crops Early Succession Rotation	Woodland	Wetland	Misc.
Darr Strip WMA - 981 ac.							
Future Desired Condition	76.5 ac. (50%)	76.5 ac. (50%)	0 ac. (0%)	81 ac.	552 ac.	270 ac.	0 ac.
Current Condition	36 ac. (24%)	117 ac. (76%)	0 ac. (0%)	36 ac.	552 ac.	270 ac.	0 ac.

DEFINITIONS

Early Seral Stage: The disturbance year and 1 -3 years following disturbance, i.e. burning, grazing, spraying, disking, tilling. Cover is also provided by second year idle crop ground, forb/legume interseeding. Dominated by early successional forbs/legumes.

Mid Seral Stage: 4 - 6 years following disturbance. Not dominated by one vegetation type. Reduced early successional forbs/legumes in the stand.

Late Seral Stage: > 6 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes in the stand.

FUTURE DESIRED CONDITION

Increase the amount of grassland functioning primarily as nesting cover from 24% to 50% (increase of 40.5 acres). Nesting cover defined as mid seral stage grass and forb/legumes, as well as legumes and idle small grains. Decrease the amount of grassland functioning primarily as brood rearing cover from 76% to 50% (decrease of 40.5 acres). Brood rearing is cover defined as early seral stage vegetation, especially forbs/legumes, crop ground, idle crop ground. Maintain the amount of grassland primarily functioning as winter cover at 0%. Woodland vegetation will be managed at 25% (138 ac.) early seral stage, 50% (276 acres) mid seral stage, and 25% (138 acres) at late seral stage. Woodland vegetation will add another 138 acres of winter food sources across the entire area and will also add 276 acres of nesting and winter cover. Winter cover for quail is provided by mid seral stage vegetation and idle food plots. Food sources include Early Successional vegetation, small grain food plots and to a lesser extent mid seral stage vegetation.

ANNUAL WORK PLAN

Grasslands have been dominated by smooth brome grass in the past and 36 acres have been grazed and converted to Early Successional habitat 4 years ago and flooded last year, which set back the vegetation succession. Grazing also took place on 117 acres 6 years ago and vegetation is now classified as mid seral stage. Large cedar tree clearing projects are proposed to occur within 2 years, so majority of woodland vegetation will be classified as Early Seral Stage. Sprayed and/or disked grassland acres will be initiated to treat 40 acres annually using a 4-6 year rotation depending on how quickly smooth brome infestation occurs as well as how fast the forb component in the grassland decreases.

Prescribed burning will be initiated to 12 acres annually by using a 4-5 year rotation to treat 60 acres of grassland. Woodland acres are within the riparian area and too difficult to burn safely. Grassland burning is contingent on firebreak construction and additional cedar tree removal projects. As always, burning is weather dependent and especially important on this WMA because of its proximity to Interstate 80.

Grazing will be increased annually by 70% (28 acres) by implementing a 4-5 year rotation throughout the area where grazing is feasible (i.e. fencing issue with the river and water sources). Fence infrastructure will be needed to be developed to expand grazing. Majority of the woodland vegetation will be managed by grazing and will take advantage of any flooding as it occurs on the Platte River.

Establishment of food plots will be initiated by planting 2 acres annually over 2 years. A large amount of the area consists of sandy soil that is not productive for crop production, so more food plots is not feasible on the WMA.

Cedar and Russian olive trees will be removed from the area over a 2 year period, treating 75 acres each year. After these operations are concluded, maintenance tree management will continue into the future.

Legumes and early successional fields will be established, planting 25 acres annually over a period of 2 years. Majority of additional sites that will be inter-seeded with legumes or managed as Early Successional habitat are contingent on cedar tree clearing projects.

<u>WMA</u>	<u>Veg. Control Spraying- Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing- Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/ Legume Planting</u>	<u>Grass Seeding</u>
Darr Strip WMA - 981 acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	117.0	5.0	150.0	60.0	340.0	50.0	0.0
- Current Annual	0.0	0.0	5.0	0.0	40.0	0.0	0.0
- Future Annual	40.0	2.0	75.0	12.0	68.0	25.0	0.0
- Years to Accomplish	3.0	2.0	2.0	5.0	5.0	2.0	0.0

TABLE B13. PHEASANT & QUAIL HABITAT MANAGEMENT- DOGWOOD WMA

	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage	Food Plots/Crops Early Succession Rotation	Woodland	Wetland	Misc.
Dogwood WMA - 407 ac.							
Future Desired Condition	50 ac. (50%)	50 ac. (50%)	0 ac. (0%)	55 ac.	270 ac.	30 ac.	2 ac.
Current Condition	35 ac. (49%)	27 ac. (38%)	9 ac. (13%)	37 ac.	326 ac.	30 ac.	2 ac.

DEFINITIONS

Early Seral Stage: The disturbance year and 1 -3 years following disturbance, i.e. burning, grazing, spraying, disking, tilling. Cover is also provided by second year idle crop ground, forb/legume interseeding. Dominated by early successional forbs/legumes.

Mid Seral Stage: 4 - 6 years following disturbance. Not dominated by one vegetation type. Reduced early successional forbs/legumes in the stand.

Late Seral Stage: > 6 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes in the stand.

FUTURE DESIRED CONDITION

Increase the amount of grassland by 41% (increase of 29 acres) by clearing trees from portions of the woodland. Once grasslands are established, increase the amount of grasslands functioning primarily as nesting cover by 43% (increase of 15 acres). Nesting cover defined as mid seral stage grass and forb/legumes, as well as legumes and idle small grains. Increase the amount of grassland functioning primarily as brood rearing cover by 64% (increase of 41 acres). Brood rearing is cover defined as early seral stage vegetation, especially forbs/legumes, crop ground, idle crop ground. Reduce the amount of grassland primarily functioning as winter cover from 13% to 0% (decrease of 9 acres). Woodland vegetation will be managed at 25% (67.5 acres) early seral stage, 50% (135 acres) mid seral stage, and 25% (67.5 acres) at late seral stage. Woodland vegetation will add another 67.5 acres of winter food sources across the entire area and will also add 135 ac. of nesting and winter cover. Winter cover for quail is provided by mid seral stage vegetation and idle food plots. Food sources include early successional vegetation, small grain food plots and to a lesser extent mid seral stage vegetation.

ANNUAL WORK PLAN

Grasslands have been dominated by smooth brome grass in the past and all acres have recently been sprayed and/or disked within the last two years and converted to early successional habitat, which is why the percentage of early seral stage is currently high. Large cedar tree clearing projects have also recently taken place within the last 3 years and so the majority of woodland vegetation is currently classified as early seral stage. Sprayed and/or disked grassland acres will be increased annually by 67% (20 acres) using a 4-6 year rotation depending on how quickly smooth brome infestation occurs as well as how fast the forb component in the grassland decreases.

Prescribed burning will be increased annually by 40% (10 acres) by using a 4-5 year rotation to treat 100 acres of grassland and 75 acres of woodland acres. Woodland acres are contingent on firebreak

construction and additional cedar tree removal projects. As always, burning is weather dependent and especially important on this WMA because of its proximity to Interstate 80.

Grazing will be increased annually by 100% (30 acres) by implementing a 4-5 year rotation throughout the area where grazing is feasible (i.e. fencing issue with the river and water sources). Fence infrastructure will be needed to be developed to expand grazing.

Establishment of food plots will be increased annually by 100% (1 acre) over 2 years. A large amount of the area consists of sandy soil that is not productive for crop production, so more food plots is not feasible on the WMA.

Cedar and Russian olive tree removal will take place on 50 acres annually for the next 2 years. After that time, maintenance timber work will continue into the future.

Legumes and early successional fields will increase annually by 100% (increase of 25 acres) over a period of 2-5 years. Majority of additional sites that will be inter-seeded with legumes or managed as Early Successional habitat are contingent on cedar tree clearing projects.

<u>WMA</u>	<u>Veg. Control Spraying- Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing- Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/ Legume Planting</u>	<u>Grass Seeding</u>
Dogwood WMA - 407 acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	100.0	5.0	100.0	175.0	300.0	50.0	15.0
- Current Annual	20.0	2.0	10.0	25.0	30.0	10.0	0.0
- Future Annual	50.0	1.0	50.0	35.0	60.0	10.0	15.0
- Years to Accomplish	2.0	2.0	2.0	5.0	5.0	5.0	1.0

TABLE B14. PHEASANT & QUAIL HABITAT MANAGEMENT- NORTH RIVER WMA

WMA	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage/Winter Cover	Food Plots/Crops Early Succession Rotation	Woodland	Wetland	Misc.
North River WMA - 681 acres							
- Future Desired Condition	95 ac (50%)	95 ac (50%)	20	25	450	15	
- Current Condition	55 ac (28%)	145 ac (72%)	25	15	450	15	

DEFINITIONS

Early Seral Stage: The disturbance year and 1-3 years following disturbance i.e. burning, spraying, disking, tilling. Cover is also provided by second year idle crop ground, forb/legume interseeding. Dominated by early successional forbs/legumes.

Mid Seral Stage: 4-6 years following major disturbance. Not dominated by one vegetation type. Reduced early successional forbs/legumes in the stand. Half of the area is grazed 2 out of 3 years. Grazed only sites are considered mid-seral stage.

Late Seral Stage/Winter Cover: > 6 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes in the stand. Wetlands and shrub plantings function as winter cover on North River.

FUTURE DESIRED CONDITION

Currently, due to grazing rotation there is no late seral stage (winter cover) grassland, however there are 15 acres of wetland and 5 acres of shrub plantings serving as winter cover. Increase the winter cover by 25% via shrub plantings (5 acres over the next 5 years). The amount of mid seral stage (nesting cover) grassland will be reduced 30% by about 50 acres, however given the current haying and grazing practices on surrounding lands there will still be adequate nesting cover. Those acres lost to mid seral stage will be transitioned to early seral and food plots (brood rearing cover), increasing the early seral stage 70% by 40 acres. Most grassland will be treated with fire, disking or spraying over the next 5 years ensuring that half of our grassland acres are early seral stage (brood rearing cover) at any point in time. Food plots will increase by 67% from 15 to 25 acres. Current levels of deer use limit the amount of food that remains through winter. This increase should mediate that. Increases/changes in treatments should provide that at least ¼ of the WMA will be in early successional habitat, doubling (or tripling) the current level. Increased burning of the woodland will cause some cottonwood mortality, but it will also allow for cottonwood regeneration. Effects of grazing on regeneration will be evaluated and corrected with fencing if needed. Fire will be primary tool for ERC and ROL control in both grasslands and timber. Woodland acres won't change, however composition and structure will change to a younger, more open riparian forest.

ANNUAL WORK PLAN

Vegetation Control – Currently spraying and disking 20+ acres annually, and will increase that maintenance work to 30+, an increase of 50% (increase of 10 acres). Plan for a variety of habitats in successive stages of treatment and maintain the goal of 90+ acres in the early seral stage.

Burn – The west half of the area was last burned in 2008 and the east half in 1988. The east half will be burned in the next 5 years. The west half may not be burned in the next 5 years, but will be in the next 10, keeping that rotation under 15 years. Most grassland will be treated with fire over the next 5 years regardless of their location. Overall burning will increase approximately 170%, by about 86 acres annually. Our goal is to burn all 681 acres of the WMA.

Grazing – The area is currently on a 3 year grazing rotation. Half of the area gets grazed 2 out of 3 years. Currently, we are exploring the option of splitting the area into 4 grazing units and rotating through each unit annually for a 4 year rotation across the 681 acre WMA. The primary reason for this change is to double the grazing pressure on the units. Currently, the units are too large to treat effectively. Annually the acreage will decrease 25% by 57 acres; however the intensity and effect will increase.

Food Plots – Currently amount of have 15 acres of food plots, an increase from 0 acres in 2013. Attempt to increase another 67% (10 acres) to 25 acres this next year.

Tree Management – Annually treat about 2 acres with edge feathering. Some of this is accomplished with cutting undesirable trees and cottonwoods. Schedule tree clearing to create a firebreak on the east side of the property in preparation for future burns. Most tree management will be done with fire. Schedule plantings of about 600 American Plums in the spring of 2016.

Grass/Forb/Legume Planting – Recently planted about 6 acres of alfalfa and plan to add more alfalfa acres as well as other legumes and forbs in heavy treatment sites (disking, spraying, etc.) where diversity is currently lacking (brome dominated sites). Plantings on these sites will increase 300% (7 acres) over past treatments.

<u>WMA</u>	<u>Veg. Control Spraying-Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree - Management</u>	<u>Burn</u>	<u>Grazing</u>	<u>Grass/Forb/Legume Planting</u>	<u>Grass Seeding</u>
North River WMA - 681 acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	150.0	25.0	10.0	681.0	681.0	20.0	
- Current Annual	20.0	15.0	2.0	50.0	227.0	3.0	
- Future Annual	30.0	25.0	2.0	136.0	170.0	10.0	
- Years to Accomplish	5.0	1.0	5.0	5.0	4.0	2.0	

TABLE B15. PHEASANT & QUAIL HABITAT MANAGEMENT- ALEXANDRIA WMA

	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage	Food Plots/Crops Early Succession Rotation	Woodland	Wetland	Misc.
Alexandria - 670 acres							
Future Desired Condition	400 ac. (65%)	46 ac. (8%)	178 ac. (27%)	116 ac.	75 ac.	2 ac.	3.0
Current Condition	406 ac. (69%)	46 ac. (8%)	136 ac. (23%)	138 ac.	75 ac.	2 ac.	3.0

DEFINITIONS

Early Seral Stage: The disturbance year and 1 -3 years following disturbance, i.e. burning, grazing, spraying, disking, tilling. Cover is also provided by second year idle crop ground, forb/legume interseeding. Dominated by early successional forbs/legumes.

Mid Seral Stage: 4 - 6 years following disturbance. Not dominated by one vegetation type. Reduced amount of early successional forbs/legumes.

Late Seral Stage: > 6 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes present.

FUTURE DESIRED CONDITION

Maintain the current 400 acres (65%) in grassland and 2nd year idle crop ground functioning primarily as brood rearing cover which will also include nesting cover, especially for quail. Brood rearing cover is defined as early seral stage vegetation, especially forbs/legumes, crop ground, idle crop ground. The 46 acres (8%) in nesting cover will be maintained around edges of native pastures, woodland and crop fields where edge feathering has been established. Nesting cover will also include 16 acres of alfalfa/clover fields which will be rotated through the crop acres in the future. Nesting cover is defined as mid seral stage grass and forb/legumes, as well as legumes and idle small grains. Increase the amount of cover primarily functioning as winter cover from 23% to 27% (increase of 42 acres- edge/feathering) totaling 178 acres over the entire area. Winter cover is provided by: late seral stage vegetation such as warm season grasses, woodlands, shelterbelts, edge-feathering and wetlands. Winter food sources will be maintained at approximately 65 acres. Food sources include small grain food plots, agricultural row crops and sunflower plantings. Target 3-4 acres of standing milo for winter food.

ANNUAL WORK PLAN

A total of 55 acres of smooth brome and reed canary grass were sprayed in fall of 2015 and annual spraying of 14 acres of smooth brome and reed’s canary grass will take place as these invaders encroach into the grasslands. This will be a maintenance activity. There is 11.0 acre grassland that will be disked in 2016 to initiate early succession habitat. There will be a 75% (31 acres) reduction in vegetation control (spraying and disking combined).

Prescribed fire will be maintained on a 5 year rotation to treat 660 acres.

Grazing infrastructure has been in place for over a decade and will be maintained throughout the area on 425 acres. Grazing is currently on a 3 year rotation but will move to a 4 year rotation beginning in 2016 to graze a pasture for 2 yrs. and then rest for 2 years. Continue to use burning in the grazing rotations through the patch/burn system where applicable.

In 2017 crop ground acres will be reduced by 22 acres (16%) and this former crop ground will be planted to a high diversity planting consisting of various forbs, legumes, and grasses for pollinator enhancement. The current system uses corn/soybeans/milo in a share crop rotation system, consisting of corn the first year, soybeans the next year using glyphosate resistant varieties to control shattercane that is prevalent throughout the crop ground. In 2015 the area tenant planted 38 acres of soybeans and 14 acres of milo and 10 acres of sunflower. There were 16 acres of alfalfa and clover with remaining 58 acres in idle crop ground. Maintain or slightly increase milo to 15 acres each year for winter food source for quail/pheasant (even w/shattercane issues). Maintain a minimum of 3-4 acres of standing milo throughout the area for winter food source. Maintain approximately 9 - 10 acres of corn or soybeans to remain in the field as food plots but with severe snow storms like the February 2016 storm, these crops may not be very useable for quail/pheasant (specifically quail).

The amount of tree work activities will be maintained at approximately 174 acres for two years to include: edge-feathering/hinge-cutting/tree shearing which will be accomplished in the next 2 years with funding tentatively through the quail focus project grant.

In 2017, plantings of grass/forb/legumes will take place on 22 acres of former crop ground to increase early successional vegetation for nesting and brood rearing.

<u>WMA</u>	<u>Veg. Control Spraying- Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing- Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/ Legume Planting</u>	<u>Grass Seeding</u>
Alexandria WMA – 670 acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	66.0	116.0	360.0	660.0	425.0	22.0	0.0
- Current Annual	55.0	138.0	186.0	195.0	291.0	0.0	0.0
- Future Annual	14.0	116.0	174.0	195.0	291.0	22.0	0.0
- Years to Accomplish	5.0	3.0	2.0	5.0	4.0	2.0	0.0

TABLE B16. PHEASANT & QUAIL HABITAT MANAGEMENT- ALEXANDRIA SW

	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage	Food Plots/Crops Early Succession Rotation	Woodland	Wetland - Big Sandy Creek	Misc.
Alexandria SW- 535 acres							
Future Desired Condition	371 ac. (54%)	82 ac. (12%)	234 ac. (34%)	88 ac.	191 ac.	26 ac.	0.0
Current Condition	382 ac. (57%)	73 ac. (11%)	224 ac. (32%)	114 ac.	191 ac.	26 ac.	0.0

DEFINITIONS

Early Seral Stage: The disturbance year and 1 -3 years following disturbance, i.e. burning, grazing, spraying, disking, tilling. This cover is also provided by second year idle crop ground, forb/legume interseeding. Dominated by early successional forbs/legumes.

Mid Seral Stage: 4 - 6 years following disturbance. Not dominated by one vegetation type. Reduced amount of early successional forbs/legumes.

Late Seral Stage: > 6 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes present.

FUTURE DESIRED CONDITION

Maintain approximately 371 acres (54%) in grassland and 2nd year idle crop ground functioning primarily as brood rearing cover which will also include nesting cover especially for quail. Brood rearing is cover defined as early seral stage vegetation, especially forbs/legumes, crop ground, idle crop ground. There will be an increase from 73 acres (11%) to 82 acres (12%) that will be maintained as nesting cover around edges of native pastures, woodland and crop fields where edge feathering has been established. It will also include 19 acres of alfalfa/clover fields which will be rotated through the crop acres in the future. Nesting cover is defined as mid seral stage grass and forb/legumes, as well as legumes and idle small grains. Increase the amount of cover primarily functioning as winter cover from 32% to 34% (increase of 10 acres- edge/feathering) over the entire area. Winter cover is provided by: late seral stage vegetation such as warm season grasses, woodlands, shelterbelts, edge-feathering and wetlands (did not include creek as winter cover). Winter food sources will be maintained at approximately 52 acres which is 10% of the area. Food sources include small grain food plots, agricultural row crops and sunflower plantings. Annually provide 3-5 acres of standing milo for winter food.

ANNUAL WORK PLAN

Approximately 36 acres of smooth brome and reed canary grass were sprayed in fall of 2015 and will annually treat approximately 13 acres, a reduction of 63%, as the smooth brome grass and reeds canary grass encroaches into the grasslands. This will be a maintenance activity. There are 27.0 acres of grassland that will be disked in 2016 to initiate early succession habitat.

Prescribed fire will be on a 5 year rotation to treat 339 acres.

Grazing infrastructure has been in place for over a decade and will continue to be maintained throughout the area on 260 acres. Currently a 3 year rotation is being used but will transition to a 4 year

rotation beginning in 2016 where paddocks will be grazed for 2 years and then rest for 2 years. This system will continue to use burning in our grazing rotations through the patch/burn system when possible.

In 2017 crop ground will be reduced by 26 acres (14%) and this former crop ground will be planted to a high diversity mixture consisting of various forbs, legumes and grasses for pollinator enhancement. Currently, corn/soybeans/milo are being used in a share crop system. The rotation consists of corn one year, soybeans the next using glyphosate resistant varieties to control shattercane that is prevalent throughout the crop ground. In 2015 the area tenant planted 24 acres of corn, 22 acres of milo and 5.3 acres of sunflower. There were 19 acres of alfalfa and clover, with remaining 44 acres in idle crop ground. Plans are to maintain milo at 20 acres each year for winter food source for quail/pheasant (even w/shattercane issues). Need a minimum of 3-5 acres of standing milo throughout the area for winter food source. Approximately 6-8 acres of corn or soybeans remain in field but with severe winter storms, some of these crops may not be very available for quail and pheasant (specifically quail).

There will be an annual increase of 45 acres (21%) of tree work activities: edge-feathering/hinge-cutting/tree shearing which will be accomplished in the next 2 years with funding tentatively through the quail focus project grant.

In 2017 plantings of grass/forb/legumes on 26 acres of former crop ground will be accomplished to increase early successional vegetation for nesting and brood rearing.

<u>WMA</u>	<u>Veg. Control Spraying-Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing-Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/Legume Planting</u>	<u>Grass Seeding</u>
Alexandria SW WMA - 535 acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	63.0	88.0	90.0	339.0	260.0	26.0	0.0
- Current Annual	36.0	114.0	174.0	50.0	131.0	0.0	0.0
- Future Annual	13.0	88.0	45.0	68.0	131.0	26.0	0.0
- Years to Accomplish	5.0	3.0	2.0	5.0	4.0	2.0	0.0

TABLE B17. PHEASANT & QUAIL HABITAT MANAGEMENT- MERIDIAN WMA

	Grassland Early Seral Stage	Grassland Mid Seral Stage	Grassland Late Seral Stage	Food Plots/Crops Early Succession Rotation	Woodland	Wetland	Misc.
Meridian WMA - 400 acres							
Future Desired Condition	325ac. (62%)	49 ac. (9%)	156 ac. (29%)	55 ac.	83 ac.	15 ac.	4 ac.
Current Condition	283 ac. (70%)	20 ac. (5%)	100 ac. (25%)	63 ac.	83 ac.	15 ac.	4 ac.

DEFINITIONS

Early Seral Stage: The disturbance year and 1 -3 years following disturbance, i.e. burning, grazing, spraying, disking, tilling. Cover is also provided by second year idle crop ground, forb/legume interseeding. Dominated by early successional forbs/legumes.

Mid Seral Stage: 4 - 6 years following disturbance. Not dominated by one vegetation type. Reduced early successional forbs/legumes in the stand.

Late Seral Stage: > 6 years following disturbance. Dominated by grass or later successional plants. Few forbs/legumes in the stand.

FUTURE DESIRED CONDITION

Maintain approximately 325 acres (68%) in grassland and 2nd year idle crop ground functioning primarily as brood rearing cover which will also include nesting cover especially for quail. Brood rearing is cover defined as early seral stage vegetation, especially forbs/legumes, crop ground, idle crop ground. There are 49 acres (11%) that will be maintained as nesting cover around edges of native pastures, woodland and crop fields where edge feathering has been established. Nesting cover will also include 8 acres of alfalfa/clover fields which will be rotated through the crop acres in the future. Nesting cover defined as mid seral stage grass and forb/legumes, as well as legumes and idle small grains. Increase the amount of cover primarily functioning as winter cover from 25% to 29% (increase of 56 acres of edge/feathering) over the entire area for a total of 156 acres. Winter cover is provided by: late seral stage vegetation such as warm season grasses, woodlands, shelterbelts, edge-feathering and wetlands. Winter food sources will be maintained at approximately 55 acres which is 14% of the area. Food sources include small grain food plots, agricultural row crops and sunflower plantings. Maintain 4-5 acres of standing milo for winter food.

ANNUAL WORK PLAN

Approximately 36 acres of smooth brome and reed canary grass were sprayed in fall of 2015 and this will be reduced to annually spray approximately 8 acres, as the smooth brome and reed's canary grass encroaches into the grasslands. This will be a maintenance activity. There are 20.0 acres of grassland that will be disked in 2016 to initiate early succession habitat.

Prescribed fire will be on a 5 year rotation to treat 380 acres.

Grazing infrastructure has been in place for over a decade and grazing will be implemented throughout the area on 225 acres. This will occur on a 4 year rotation where paddocks will be grazed for 2 years and

then rest for 2 years. Burning will be used in these grazing rotations through the patch/burn system when possible.

In 2017 crop ground will be reduced by 8 acres (13%) and this former crop ground will be planted to a high diversity planting consisting of various forbs, legumes and grasses for pollinator enhancement. There will also be 2, 1.0 acre plots that will be planted to milkweed for monarch butterfly habitat in 2016. Currently a corn/soybeans/milo rotation is used in a share crop system: corn one year - soybeans the next using glyphosate resistant varieties to control shattercane and Johnson grass that is prevalent throughout the crop ground. In 2015 the area tenant planted 23 acres of corn and 13 acres of milo. There were 8 acres of alfalfa and clover with the remaining 19 acres in idle crop ground. Plans are to maintain 8-10 acres of milo each year for winter food source for quail/pheasant (even w/Johnson grass/shattercane issues). Require a minimum of 3-4 acres of standing milo throughout the area for winter food source specifically for quail.

There will be an increase of 185 acres of tree work activities: edge-feathering/hinge-cutting/tree shearing which will be accomplished in the next 2 years with funding tentatively through the quail focus project grant.

In 2017, plantings of grass/forb/legumes will be established on 8 acres of former crop ground to increase early successional vegetation for nesting and brood rearing.

<u>WMA</u>	<u>Veg. Control Spraying- Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing- Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/ Legume Planting</u>	<u>Grass Seeding</u>
Meridian WMA - 400 acres	acres	acres	acres	acres	acres	acres	acres
Future Desired Condition	56.0	55.0	192.0	347.0	225.0	8.0	0.0
- Current Annual	36.0	63.0	7.0	142.0	112.0	0.0	0.0
- Future Annual	8.0	55.0	185.0	142.0	112.0	8.0	0.0
- Years to Accomplish	5.0	3.0	2.0	5.0	4.0	2.0	0.0

TABLE B18. PHEASANT & QUAIL HABITAT MANAGEMENT- ENHANCED TREATMENT ACRES AND COSTS FOR ALL WMAs COMBINED

<u>All WMAs Combined</u>	<u>Veg. Control Spraying- Disking</u>	<u>Food plot Ag Crop</u>	<u>Tree Clearing- Management</u>	<u>Burn</u>	<u>Graze</u>	<u>Grass/Forb/ Legume Planting</u>	<u>Grass Planting</u>
Acres treated*	2502 ac.	120 ac.	845 ac.	**	**	584 ac.	110 ac.
Cost per acre	\$60	\$200	\$400	-	-	\$280	\$280
Total cost***	\$150,120	\$24,000	\$338,000	-	-	\$163,520	\$30,800

*Acres treated represent acres in excess of current treatments.

**Acres treated to be accomplished by Commission staff; no outside contractors.

***Sum of costs for all treatments = \$706,440.

DRAFT

Appendix C. Research & Priority Information Needs for the Comprehensive Pheasant Plan for Nebraska

The following items are tactics identified in the plan involving research or information needs. Those that have already begun are listed under “Ongoing Research” and are high priorities for completion. Estimates of costs and duration of tactics are also provided, but final figures will likely vary. Results from ongoing studies, input from stakeholders, and availability of funds will help determine priorities over the duration of the plan.

Ongoing Research

- Continue research on potential indirect negative effects of hunting on pheasant populations, and use results to propose regulation and/or policy changes if necessary. (§B.7)
- Continue research in partnership with UNL on the relations among hunting pressure, hunter satisfaction, and game abundance and behavior to ascertain potential benefits of unlimited versus restricted access on areas open to public hunting. (§C.1)
- Continue research in partnership with UNL on hunter use, success, and satisfaction on OFW lands to better deliver the program. (C.2)
- Assess the effectiveness of our current suite of programs in moving potential hunters through to the adoption phase, and propose improvements based on the results. (§D.1)
- Assess the location of current focus areas to assure that staff and resources are being efficiently directed. (§B.1)

Biological/Ecological Research Studies

- Begin working with leading experts to develop a research proposal to measure the genetic diversity and structure of pheasants in Nebraska and to identify their potential links with population performance, and conduct research if return-on-investment is deemed favorable relative to other information needs. (§B.7) \$200k-\$250k; 3 years
- Assess the current state of knowledge concerning potential impacts of pen-raised pheasant releases on the genetics of wild populations. (§B.7) \$100k-\$150k; 2 years
- Begin construction of a spatial assessment tool capable of more reliably identifying areas where additional habitat management is likely to yield the greatest results. (§B.1 & §B.4) \$100k-\$150k; 2 years
- Assess the feasibility of developing corridor habitat projects connecting large public lands (e.g., Sherman and Davis Creek WMAs). (§B.1) <\$10k; <1 year
- Assess alternative survey methods for estimating pheasant abundance to ensure we are using the most reliable and cost effective approach. (§E.1) <\$10k; <1 year

Human Dimensions/Sociological Research Studies

- Begin landowner survey work to assess the efficacy of the Wheat Stubble Management Program. (§B.1) \$50k-\$100k; <1 year
- Assess the relative roles of agency forecasts, word-of-mouth, online social for a, and personal experience in setting hunter expectations, and shift outreach resources accordingly. (§E.1) \$50k-\$100k; 1 year
- Assess the state of knowledge concerning how hunter expectations are formed and how they influence hunter satisfaction, and propose additional research as warranted. (§E.1) \$50k-\$100k; 1 year

- Assess the potential social benefits of changing shooting hours to a mid-morning start time (§B.8). <\$10k; <1 year

Economic Research: Feasibility & Cost-Benefits Studies

- Begin development of a research project to assess the costs and benefits of a focused predator removal operation and to determine areas of the state where such an operation would have the highest return on investment. (§B.9) \$250k-\$350k; 3 years
- Continue to analyze the costs and benefits of lands offered to us for sale, and acquire lands in accordance with budget constraints and agency's acquisition priorities. (§B.5) <\$10k; <1 year
- Assess the feasibility of pursuing conservation and/or public access easements in lieu of acquisitions to conserve habitat and hunting opportunities. (§B.5) <\$10k; <1 year
- Assess the estimated number and spatial distribution of pheasant hunting acres needed to satisfy a target level of demand, and determine the most cost efficient blend of acquisitions, easements, and access arrangements necessary to meet that demand. (§B.5) \$100k-\$150k; 2 years
- Assess the feasibility of leasing a large block (>5,000 acres) of private land to research pheasant responses to landscape-level habitat changes. (§B.1) <\$10k; <1 year
- Assess the feasibility of employing at least one partnership biologist in each county within our Focus on Pheasants focus areas to promote beneficial habitat practices and more fully take advantage of habitat improvement opportunities. (§B.2) <\$10k; <1 year
- Assess our budgetary capacity to support current and future pheasant release programs while concurrently supporting other programs benefiting pheasant hunters. (§D.1) <\$10k; <1 year
- Assess the types and price points of our small game permits and habitat stamps to ensure a proper balance between lowering barriers to participation and providing the services necessary to encourage continued participation, including assessment of a \$5.00 non-resident youth small game permit. (§D.2) <\$50k-\$100k; 1 year
- Assess the utility of purchasing email lists for direct marketing campaigns to non-resident hunters. (§E.3) <\$10k; <1 year

Habitat Studies: Private and Public Land Management

- Assess the feasibility of alternative approaches to expand our capacity to accomplish work on WMAs (e.g., traveling work crews, "Adopt a WMA" programs, &c.) (§B.4) <\$10k; <1 year
- Assess the apparent suitability of current and additional WMAs to be included in the Focus on Pheasants and Focus on Quail programs based on WMA size, surrounding landscape condition, and available staff and funding, and adjust priorities accordingly. (§B.4) <\$50k; 1 year
- Assess the feasibility of an Upland Game Focus Area spanning public and private lands in the Platte River Valley. (§B.1 & §B.4) <\$10k; 1 year
- Assess the feasibility of a state- and/or federally-funded short-term set-aside program directed toward focus areas. (§B.1) <\$10k; 1 year
- Assess the feasibility of mobile work crews to accomplish better mid-contract management on Conservation Reserve Program acres (§B.1) <\$10k; 1 year

Policy Studies: Legislative/Regulation Changes & Feasibility

- Assess the feasibility of pursuing alternative funding sources (e.g., a dedicated state sales tax, a special appropriation from the legislature, a non-wasting trust fund for pheasant conservation, &c.) in collaboration with our conservation partners. (§A) <\$10k; < 1 year

- Assess the feasibility of pursuing legislative actions that would promote pheasant habitat and hunting (e.g., a property tax reduction, freeze, or similar incentive on cropland converted to grassland or stream buffers, promotion of prescribed fire, &c.) in collaboration with our conservation partners. (§A) <\$10k; <1 year
- Assess the biological and law enforcement ramifications of reducing or eliminating Captive Wildlife Permit requirements to raise and release pheasants, and minimize requirements accordingly. (§B.6) <\$10k; <1 year
- Assess the biological, economic, and legal ramifications of liberalizing CSA rules and policies, and recommend changes accordingly such that the regulatory burden is minimized. (§C.3) <\$10k; <1 year

Partnerships and Technical Assistance

- Assess the most effective ways of using precision farming technology to illustrate the potential cost-effectiveness of USDA conservation program options, with particular attention to potentially providing information at crop consultant meetings and conventions where available. (§B.2) <\$10k; 1 year
- Assess the feasibility of also partnering with agricultural groups and outdoors retailers to increase funding or effectiveness of technical assistance delivery. (§B.3) <\$10k; <1 year
- Assess the feasibility of adding delivery of Leopold Education Project. (§B.10) <\$10k; <1 year
- Assess our current programs to ensure they are reaching the desired audiences and having the desired effects. (§B.10) \$100k-\$150k; 2 years
- Assess the best ways to engage other farmer-trusted partners (e.g., UNL Extension, CO-Ops, crop consultants, farm managers, &c.) in delivering positive messages about the direct and indirect values of wildlife habitat in protecting other resources (soils, water, etc.). (§B.11) <\$50k; <1 year
- Assess the current portfolio of federal lands in Nebraska currently closed to hunting, identify those that potentially could be opened, and begin a dialogue with the appropriate federal agencies to ascertain their future access status. (§C.1) <\$10k; <1 year
- Assess the feasibility of partnering with the Nebraska Travel Advisory group, the Nebraska Tourism Commission, and/or community visitors bureaus to more effectively promote pheasant hunting opportunities. (§E.3) <\$10k; <1 year