

Implementation and Monitoring

Funding and Personnel

Current staffing at the Refuge consists of six permanent and four seasonal employees. Additional permanent and seasonal staff will be required to implement the strategies in the CCP and effectively monitor the flora and fauna to determine if the goals and objectives in the Plan are being met.

At this time, the Refuge has an annual base budget of \$381,700, based on fiscal year 2002 figures (fiscal year 2003 figures were not available due to continuing resolution) to maintain salaries for six permanent personnel and annual operating expenses for the Refuge Complex. The current budget represents the minimum needed to maintain current annual activities and does not adequately support Complex habitat management, biological monitoring, maintenance, public use, and education programs, and all Complex facilities and structures.

Table 5 shows the current staff and the proposed additional staff required to fully implement the CCP. If all positions are funded, the Refuge Complex staff will be able to carry out all aspects of this Plan. This would provide maximum benefits to wildlife, maximum efficiency, improve facilities and provide for increased public use. Projects that have adequate funding and staffing will receive priority for accomplishment. Staffing and funding are requested for the 15-year period of the Plan.

Table 5. Current and Proposed Staff		
	Current	Proposed
Management Staff	Project Leader, GS-12 Refuge Operations Specialist, GS-11	Complex Project Leader, GS-13 Supervisory Refuge Operations Specialist, GS-12 Refuge Operations Specialist, GS-9/11* Private Lands Refuge Operations Specialist, GS-9/11
Biological Staff	Wildlife Biologist, GS-9/11 Career Seasonal Wildlife Biological Technician, GS-6 Seasonal Biological Technicians, GS-4 to GS-5 (3-4)	Complex Wildlife Biologist, GS-11 Wildlife Biologist, GS-9* Career Seasonal Wildlife Biological Technician, GS-6 Seasonal Biological Technicians, GS-3 to GS-5 (4-5)* GIS Coordinator/Data Manager, GS-9/11*
Public Use Staff		Outdoor Recreation Planner, GS-9/11*
Administrative Staff	Administrative Assistant, GS-8	Administrative Officer, GS-9* Administrative Assistant, GS-5/6*
Maintenance Staff	Equipment Operator, WG-8	Equipment Operator, WG-10 Career Seasonal Maintenance Worker, WG-8 (Irrigator) Career Seasonal Maintenance Worker, WG-8*
*Shared with other stations in Wyoming under Arapaho's Complex Management		

Economic Impact Analysis

For Refuge CCP planning, an economic impact analysis describes how current (No Action Alternative) and proposed management activities (Alternatives B, C, and D) affect the local economy. This type of analysis provides two critical pieces of information: 1) it illustrates a refuge's true value to the local community; and 2) it can help in determining whether local economic effects are or are not a real concern in choosing among management alternatives. Economic impacts are typically measured in terms of number of jobs lost or gained, and the associated result on income. Economic input-output models are commonly used to determine how economic sectors will and will not be affected by demographic, economic, and policy changes. The economic impacts of the management alternatives for Arapaho NWR were estimated using IMPLAN, a regional input-output modeling system developed by the USDA Forest Service.

The Refuge management activities of economic concern in this analysis are Refuge personnel staffing and Refuge spending within the local community, livestock grazing activities on the Refuge, and spending in the local community by Refuge visitors. The detailed report is provided in Appendix G. Table 6 summarizes the direct and total economic impacts for all Refuge management activities by management alternative.

Current Refuge staffing and budgeting (Alternative A) generates 11.3 jobs and \$398,839 in personal income in Jackson County and accounts for 1 percent of total employment in Jackson County. Due to increased staffing levels, Alternatives B, C, and D would generate more jobs and income than Alternative A.

Total annual revenue of \$484,779 is associated with permittees that use the Refuge as part of their grazing operation. This accounts for an estimated 3.4 jobs and \$67,780 in labor income in the Range Fed Cattle Industry and a total of 6.9 jobs (0.61 percent of total county employment) and \$131,959 in labor income throughout the Jackson County economy. It is important to note that the permittees use the Refuge as part of their overall grazing operation, the economic values presented in this analysis represent the value of the overall operation not just the value of grazing on the Refuge. For reduced Refuge grazing below the levels identified in Alternative A, the key issue is to identify how permittees will respond to being able to graze fewer head on the Refuge. Several options are available including transferring to private land, purchasing additional hay, or reducing the number of animals in their operation. Because it is not known how each permittee will respond, this analysis encompassed the best (transferring to private land) and worst (cut in permittee operations by the associated reduction in Refuge AUMs) case scenarios to frame the possible impact range. For alternatives B, C, and D, the anticipated reduction in AUMs is 10 percent to 64 percent, the 64 percent reduction impacts are reported in Table 6 as one end of the impact range to represent the absolute worst case scenario. Total annual revenue associated with the worst case scenario is \$174,566. The sales associated with a 64 percent reduction from the current level would result in a decrease of 2.2 jobs and \$43,373 in labor income in the Range Fed Cattle Industry and would decrease countywide employment by 4.4 jobs (-0.39 percent of total county employment) and labor income by \$84,441. The other end of the impact range reported in Table 6 represents the best case scenario of transferring head to private land. Because no economic impacts are expected, the economic impacts for the best case scenario are the same as Alternative A. Which scenario (transfer to private land or cut production) a permittee chooses will depend on their level of dependence on the Refuge for their overall operation and the actual reduction in Refuge AUMs.

Current Refuge visitors spend about \$160,500 annually in the Jackson County economy which directly generates \$29,918 in personal income and 2.1 jobs for local businesses accommodating visitors (hotels, restaurants, supply stores, and gas stations) and generates a total of \$39,308 in personal income and 2.5 jobs (0.2 percent of total county employment) throughout the local economy. At this time no significant change is expected in current visitation levels for Alternatives B, C, and D. Therefore, the economic impacts reported in Table 6 are the same across all alternatives.

Under current Refuge management (Alternative A), total economic activity directly related to all Refuge operations generate an estimated 14.7 jobs and \$458,634 in Jackson County. Including direct, indirect, and induced effects, all Refuge activities account for 20.7 jobs (1.8 percent of total county employment) and \$570,106 in personal income in Jackson County. Due to the increased staffing levels for Alternatives B, C, and D, the associated economic effects generate more jobs and income than Alternative A.

Table 6. Summary of all Refuge Management Activities by Alternative

Jackson County	Alternative			
	A	B	C	D
Total Refuge Staffing and Budgeting Impacts				
Direct Effects				
Income (\$/year)	\$360,936	\$736,625	\$643,864	\$736,625
Jobs	9.2	18.2	16.1	18.2
Total Effects				
Income (\$/year)	\$398,839	\$811,883	\$710,274	\$811,883
Jobs	11.3	22.4	19.8	22.4
Refuge Grazing Activities				
<i>Range from a 64% reduction in AUMs (option 2) to no impact expected (Option 1)</i>				
Direct Effects				
Income (\$/year)	\$67,780	\$24,407 to \$67,780	\$24,407 to \$67,780	\$24,407 to \$67,780
Jobs	3.4	1.2 to 3.4	1.2 to 3.4	1.2 to 3.4
Total Effects				
Income (\$/year)	\$131,959	\$47,518 to \$131,959	\$47,518 to \$131,959	\$47,518 to \$131,959
Jobs	6.9	2.5 to 6.9	2.5 to 6.9	2.5 to 6.9
Recreation Activities				
<i>No change in visitation expected across alternatives</i>				
Direct Effects				
Income (\$/year)	\$29,918	\$29,918	\$29,918	\$29,918
Jobs	2.1	2.1	2.1	2.1
Total Effects				
Income (\$/year)	\$39,308	\$39,308	\$39,308	\$39,308
Jobs	2.5	2.5	2.5	2.5
Aggregate Impacts				
Direct Effects				
Income (\$/year)	\$458,634	\$790,950 to \$834,323	\$698,189 to \$741,562	\$790,950 to \$834,323
Jobs	14.7	21.5 to 23.7	19.4 to 21.6	21.5 to 23.7
Total Effects				
Income (\$/year)	\$570,106	\$898,709 to \$983,150	\$797,100 to \$881,541	\$898,709 to \$983,150
Jobs	20.7	27.4 to 31.8	24.8 to 29.2	27.4 to 31.8
<i>% of Total County Employment</i>	1.8%	2.4% to 2.8%	2.2% to 2.6%	2.4% to 2.8%

Funding Needed to Implement This Plan

Projects required to implement the Arapaho CCP are listed in Appendices D and E. These Appendices show the funding needed to implement the CCP through two different systems. The first system is the Refuge Operations Needs System (RONS). This document requests to Congress for funding and staffing needed to carry out projects above the existing base budget. Amounts shown include a start-up cost of implementing each program with actual yearly costs that are significantly less. The other system is the Maintenance Management System (MMS) which documents the equipment, buildings, and other existing property that require repair or replacement. All of the current RONS projects directly support the implementation of the CCP. Below is a summary of funding needed to fully implement the CCP based on the RONS Projects in Appendix D.

	Recurring	
	First Year	Annual Need
Personnel/Staffing	\$792,000	\$430,000
Facilities	\$541,000	\$ 000
Habitat Projects	\$192,000	\$ 36,000
Research/Studies	\$383,000	\$ 10,000

Other funding needs include the maintenance or replacement of existing equipment and facilities. In the past, the Complex has had a large backlog of these funding needs. However, in recent years, much of the funding has been provided to eliminate a large number of the backlog projects. Below is a list of remaining needs required to implement the CCP and maintain the structures and equipment to a safe and productive standard for the 15 years of the Plan.

Water Control Structures and Dikes	\$146,000
Road, Gates, and Fences	\$2,341,000
Buildings and Facilities	\$516,000
Public Use Facilities	\$276,000
Equipment	\$531,000
Vehicles	\$60,000

A list of the top 18 prioritized items are located in the MMS list in Appendix E. The remaining MMS projects do not directly impact the CCP implementation and were not included in this Plan. These were generally projects that were required to be included in MMS, such as equipment / vehicle replacement, etc., for an additional \$1,964,000 in funding.

Step-Down Management Plans

Service managers have traditionally used the Refuge Manual to guide field station management actions. The policy direction given through the manual has provided direction for developing a wide variety of plans which are used to prepare annual work schedules, budgets, public use, and land management actions. The CCP is intended as a broad umbrella plan which provides general concepts and specific wildlife, habitat, endangered species, public use and partnership objectives, and examples of strategies that might be used to complete the objectives. The purpose of step-down management plans is to provide greater detail to managers and employees who will implement the strategies described in the CCP.

Under the guidance provided within the CCP, the Refuge staff will revise or develop several step-down management plans to be implemented over the next 15 years. Step-down management plans to be revised or developed include:

Habitat Management Plan	Hunting Management Plan
Public Use Plan	Water Management Plan
Fisheries Management Plan	Fire Management Plan
Illinois River Rehabilitation Plan	Habitat Monitoring Plan
Integrated Pest Management Plan	Wildlife Monitoring Plan
Archaeological Resources Protection Plan	Station Safety Plan

Partnership Opportunities

Partnerships are an integral part of the existing Refuge management and are viewed as the key to successful management in the future. The staff recognize that the Refuge is not an ecosystem, rather it represents merely an island of wildlife habitat. The Refuge is dependent on wildlife and habitats provided by other land managers throughout North Park and throughout the Central Flyway. “The Refuge is not sustainable alone, in fact it is dependent on other habitats and lands that surround it to be functional, and by itself may serve little wildlife value” (quote, Dr. Richard Knight). The CCP strives to recognize this connection to, and dependence on, other lands. Past and current agricultural practices have provided benefits for wildlife in North Park. The livelihood of ranchers largely has been dependent on maintaining a healthy plant community. As a result, many plant and wildlife species have benefitted from these practices. Further, ranching has impeded urban development which adversely impacts natural communities. Ranchers are one of the land stewards that have protected and preserved wildlife habitats for the past 125 years. We believe sustainable ranching is one key to continued protection of North Park natural resources.

The message for new and existing partners is “we need you.” The Refuge will cooperate and partner with other land managers in North Park to improve wildlife habitats. The Refuge has identified a new Private Lands Coordinator position within the CCP to facilitate partnering. The CCP recommends that short-term variations in management be considered to accommodate other wildlife related projects within North Park. For example, the Refuge would consider allowing additional grazing AUMs to accommodate a 2-year rest following Dixie harrow treatment on adjacent BLM lands. The down-side to this approach is that the Refuge will achieve its habitat objects at a slower pace because resources are diverted away from Refuge lands. However, the benefits of combining Refuge resources with other land managers will result in improved land health for North Park and the Refuge. Additionally, the Plan will encourage other partners to come join Refuge habitat improvement efforts. Through partnering, we envision the Refuge serving as a demonstration site for sound land management practices.

Monitoring and Evaluation

Monitoring is essential to successful implementation of the CCP. The new habitat-based goals and objectives will change the past monitoring practices at the Refuge. Vegetative community function and structure will drive the management actions of the Refuge. Adaptive management will be used to incorporate new information into existing monitoring techniques. Periodic evaluations of vegetation community progress will be used to direct future management strategies.

Refuge goals, objectives, and strategies have been identified within the CCP. Monitoring strategies have also been evaluated and are included within this Plan. Required step-down management plans have been identified. Step-down management plans will further refine monitoring, methods, techniques, and locations. Additionally, the step-down plan will identify how, when, and who will conduct the monitoring.

All habitat management activities will be monitored to assess whether the desired effect of wildlife and habitat components has been achieved. Baseline surveys will continue for waterfowl, big game, and small game species. Baseline surveys will also be conducted for wildlife species for which existing or historical numbers and occurrence is not well known. It is also important to conduct studies to monitor wildlife responses to increased public use (multi-use trail, moose overlook) to assess impacts of these activities on Refuge wildlife.

Refuge habitat monitoring methods and frequency are currently being developed cooperatively with wildlife researchers within the U.S. Geological Survey. Evaluation of those methods will occur periodically, and the Refuge will consult with U.S. Geological Survey, Universities, and other professionals to ensure proper data collection and analysis.

Wildlife research will be encouraged at the Refuge. The Refuge staff will actively pursue research opportunities, especially those that advance, or answer questions, related to Refuge management. Research that enhances monitoring (techniques or data analysis) on the Refuge will also be encouraged. Refuge staff will work with researchers to ensure that the studies are applicable and compatible with Refuge objectives. Research that does not relate to Refuge goals and objectives will be discouraged.

This CCP is designed to be effective for a 15-year period. Periodic reviews (5 year minimum) of the CCP will ensure established goals and objectives are being met. Monitoring and evaluation will be an important part of this process.

Plan Amendment and Revision

The CCP will guide management on the Refuge for the next 15 years. CCPs are signed by the Regional Director, Mountain-Prairie Region 6, thus providing the regional direction to the station project leader. A project leader at the station will review the CCP every 5 years to determine if it needs revision. In the case of severe circumstances, the project leader has the authority to modify management actions to respond appropriately. The Plan will be revised no later than 2018.

Comprehensive Conservation Plan Preparers

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The Draft CCP and Environmental Assessment were written by Refuge staff and the Refuge planner with input from the above mentioned individuals. The documents were reviewed by Refuge Staff, Regional offices, other Service offices, U.S. Geological Survey, the Colorado Division of Wildlife, and the Bureau of Land Management. The Refuge staff recognizes and appreciates all input received from the individuals noted in the acknowledgments section and the input derived from public scoping meetings.