

chapter 5



IMPLEMENTATION AND MONITORING

Chapter 5. Implementation and Monitoring

This chapter addresses a range of topics regarding the function and direction of the Refuge in future years. It discusses funding for personnel and equipment as well as opportunities to partner with local entities. Furthermore, the chapter outlines an adaptive process of management that unfolds through monitoring and evaluation. This process will be facilitated by future revisions to the CCP and by step-down management plans, which will provide specific guidance regarding management objectives and strategies.

5.1. FUNDING AND PERSONNEL

Refuge budgets generally include ongoing operations funds for staffing, maintenance and utility needs. Estimated staff is the minimum necessary to accomplish the goals. Appendix F provides a detailed list of this staff along with the costs. Maintenance expenses cover activities necessary to keep facilities and equipment in good working order. Utilities will include gas, electrical, phone and cleaning. In addition to ongoing operations costs, there will be one-time restoration and implementation costs associated with opening the Refuge. These expenses are for activities such as restoring habitat, building facilities and purchasing equipment. Fire management funds are administered from a different funding source and are listed separately.

Because the Refuge will be managed as part of a complex that includes the RMA and Two Ponds, there will be costs that could be shared between the facilities. Therefore, both operations and restoration and implementation costs have been broken out between items that would require new funding for the Refuge and items that would be covered from the complex's existing base funding. Furthermore, large equipment needed for restoration activities is assumed to be shared with the other refuges in the complex and is included with existing base funding.

Estimated costs for alternatives are summarized in Table 10. Costs are presented in 2003 dollars. Because the

Refuge will not be established for several years, these numbers will need to be adjusted for inflation when the Refuge's funding request is made.

The plan will require the equivalent of four employees with an annual funding target of \$543,000 for operations. Required restoration and implementation costs will total \$1.2 million, over a third of which is for maintenance equipment and related storage. Remaining funds requested are for habitat restoration supplies and visitor-related facilities. Fire management activities on the Refuge will require the equivalent of three employees (2 full-time and 2 seasonals) with annual funding of \$133,000, as well as an up-front expenditure of \$125,000 for equipment and supplies. Estimated costs in 2003 dollars over the 15-year period for this alternative are \$8.6 million.

5.2. STEP-DOWN MANAGEMENT PLANS

This CCP describes the desired future conditions of the Refuge and provides long-range guidance and management direction. Chapter 4 describes objectives and strategies that the Service will use to achieve the desired future conditions. During the 15-year life of this plan, the Service will prepare additional plans, called step-down management plans. A step-down management plan provides specific guidance for the Service to follow to achieve objectives or implement management strategies related to specific management topics such as habitat, fire and public use. Step-down plans will be developed as the need arises. The preparation of new step-down plans typically will require further compliance with Service planning policies and procedures, including opportunities for public review and comment. The Service anticipates the following plans will be needed at the Refuge:

- Vegetation and Wildlife Management Plan
- Integrated Pest Management Plan
- Fire Management Plan

Table 10. Estimated Costs

Cost over 15 Years (millions 2003\$)	Annual Operations (thousands)	Restoration and Implementation (millions)	Fire Management (millions)	Major Components of Costs
\$8.6	\$543	\$1.2	\$1.6	Balances public-use and restoration efforts.

- Visitor Services Plan
- Health and Safety Plan
- Historic Preservation Plan

A Visitor Services Plan would be an umbrella document that would include interpretation, environmental education, hunting management and research protocols.

5.3. PARTNERSHIP OPPORTUNITIES

The Service will pursue opportunities to work with federal, state and local agencies, conservation groups, adjacent landowners and other interested parties to advance the purpose of the Refuge and to benefit surrounding communities. Many natural resource management issues such as invasive weed control, wildfire management, wildlife corridors, recovery of declining species and impacts to resources caused by visitors will need to be coordinated across boundaries. Collaboration with surrounding open space and natural resource entities such as Jefferson County, City of Boulder, Boulder County, City and County of Broomfield, City of Westminster, City of Arvada and CDOW will be instrumental in achieving the Service's ecosystem management goals. The Service will also develop and maintain mutual aid agreements related to fire control with adjacent jurisdictions.

The Service will encourage and support research and management studies on Refuge lands that inform natural resource management decisions. Scientific research partnerships will give the Service opportunities to analyze independently collected data and use research results to develop adaptive management strategies. As data-sharing partners, university faculty, staff and students as well as independent scientists will be instrumental in helping the Service develop baseline biological data.

The Service will also collaborate with interested organizations such as the Cold War Museum to interpret the history of the Rocky Flats site and communicate its story to Refuge visitors. Other potential partnerships related to hunting, environmental education, trail use and interpretation may involve local universities, school districts, conservation and/or historical organizations, open space agencies, recreation user groups and the CDOW.

Volunteer partnerships will be cultivated with individuals interested in learning more about the Refuge and assisting staff with various aspects of Refuge operations. The Service also will support the development of a "Friends" group for the new Refuge. Such a group will

play an important role in leveraging private resources and public support for Refuge programming.

5.4. MONITORING AND EVALUATION

The Service will adopt an adaptive management approach to the implementation of the proposed management objectives. Adaptive management is "The rigorous application of management, research and monitoring to gain information and experience necessary to assess and modify management activities... A process that uses feedback from Refuge research and monitoring and evaluation of management actions to support or modify objectives and strategies at all planning levels" (U.S Fish & Wildlife Service 2000). Because the Refuge is new, ongoing monitoring of the effectiveness of habitat restoration and conservation and public use is essential for adapting and refining objectives and strategies to ensure management goals are achieved. Monitoring and evaluation has been integrated into many resource management and public use objectives.

The Service will establish biological monitoring programs to assess the effect of restoration and conservation measures on habitat condition. The Service will monitor certain habitat conditions to determine if the management strategies are serving the needs of native wildlife species. For example, periodic Preble's surveys will help determine the effects of riparian habitat protection and enhancement efforts. To assist in the control of invasive species such as Dalmatian toadflax and diffuse knapweed and to restore native plant communities, the Service will evaluate the use of different treatments and control mechanisms, including an IPM approach, prescribed fire, managed grazing, and a combination of these techniques, for the most efficient forms of weed suppression. The monitoring of vegetation transects will help gauge the long-term effects of weed management and restoration efforts in the xeric tallgrass community.

Visitor use surveys will measure the extent to which visitors feel welcome, safe and comfortable at the Refuge and the extent to which they learned about the Refuge system, safety issues and the Service's stewardship role during their visits. In addition to measuring visitor satisfaction, the surveys will indicate the effectiveness of public use programming in increasing visitors' understanding and appreciation of natural resources and promoting environmentally responsible behavior.

This CCP is designed to be effective for 15 years. It will undergo periodic review to evaluate whether the established strategies are being implemented. Throughout the life of the CCP, the Service will monitor Refuge

resources, assess whether the goals and objectives for the Refuge are being achieved and if necessary, adjust specific management prescriptions to better respond to the long-term needs of the Refuge.

5.5. PLAN AMENDMENT AND REVISION

The CCP will be adjusted to include new and improved information as it becomes available over the course of the CCP's 15-year duration. Implementation of the CCP will be monitored and reviewed regularly during inspections and programmatic evaluations. Budget requests and annual work plans will be tied directly to the CCP.

Fifteen years after the Refuge has been established, the CCP will be formally revised, following the process used on this CCP. Any substantive changes to the CCP before the 15-year period will involve a public process. However, under Title 50 CFR, the Refuge Manager has the authority to take immediate actions outside this plan as necessary to respond to emergencies and protect wildlife and public safety.

5.6. REFERENCES

U.S. Fish & Wildlife Service. 2000. Final Refuge Planning Policy. FWM 355. Part 602 National Wildlife Refuge System Planning.