

# CHAPTER 6. PLAN IMPLEMENTATION AND MONITORING

## Introduction

Following approval of this CCP and public notification of the decision, the Service will begin implementing the strategies identified in the plan. We will revise the CCP every 15 years thereafter, or earlier, if monitoring and evaluation determine that changes are needed to achieve Refuge purposes, vision, goals or objectives. In this chapter, the projects described in Chapter 3 for the Proposed Action (Alternative B) are briefly reviewed and the costs to implement this alternative are estimated. Current base funding and any additional unfunded costs are identified. The projects are ranked to indicate priority funding and staffing needs. This chapter also explains the step-down plans and partnerships that would be needed to accomplish many of the stated goals and objectives. Lastly, we explain the monitoring and evaluation that would occur and the process for amending, if necessary, and revising the plan.

## Annual Funding

The Gorge Refuges are part of the Ridgefield Refuge Complex, which also includes Ridgefield Refuge and Conboy Lake Refuge. At the beginning of every year, staff from the Ridgefield Refuge Complex meet to identify project needs for all five Refuges. Because the number of projects usually exceeds what can be feasibly accomplished in a year, each project is ranked high, medium or low priority for the Refuge and for the Complex. Throughout the year, the list is updated to

reflect unanticipated needs and project extensions. Because the Gorge Refuges are not fully staffed, it must rely upon staff from Ridgefield Refuge to help accomplish its priority projects. Competing priorities can delay or postpone many of the projects identified for the Gorge Refuges.

Operational expenses for the Gorge Refuges are funded through an annual allocation to the Complex. During 1999-2003, average annual funding to the Complex was \$1,156,000 for refuge operations and maintenance and \$393,000 for other programs such as private lands, migratory birds, fire, hunting, and three donated funds accounts. During the same period, total expenses for the Gorge Refuges, as reported in the Refuge Comprehensive Accomplishment Report (RCAR), averaged \$263,000, including \$129,000 for work accomplished at Steigerwald Lake Refuge, \$42,000 at Franz Lake Refuge, and \$93,000 at Pierce Refuge. These expenses reflect time spent by Complex staff on various Gorge Refuge projects, utilities and operational expenses, and one-time maintenance expenses. Included in the annual total for Pierce Refuge was \$50,000 from an annual disbursement from the Pierce Trust Fund. This annual donation was specified in the will of Lena Pierce when she donated Pierce Refuge land to the Service.

Full implementation of the CCP would require an increase in funding; however, additional funds are not guaranteed. The Service would implement projects as funds become available. The primary funding

source would be additional allocations from Congress to the Complex (with subsequent allocations to the Gorge Refuges). The Service would seek additional sources of funding through partnerships and grants. As habitat restoration projects are completed, additional funds would be needed to maintain the habitat improvements, as well as all necessary equipment and facilities. New projects proposed in this CCP would be entered into the Refuge Management Information System, in either the Refuge Operating Needs System (RONS) or the Maintenance Management System (MMS). The Service would use this database to request funding from Congress. The Service would strive to reduce the backlog of maintenance projects while implementing the CCP.

### **Costs to Implement CCP**

The Service proposes many new projects in the CCP for the next 15 years. Total costs to fully implement it is the sum of project costs, staffing costs, and maintenance costs. The following section lumps the major projects into five categories and summarizes the primary features of each. Project categories include fisheries, wildlife habitat management, inventory and monitoring, water quality, and public use. The project costs, priority ranking for each project, and implementation schedule are presented in Table 6-1. Following the explanation of project costs, staffing needs are summarized, including essential staff and additional staff needed to fully implement the CCP. Next, maintenance costs are explained, and finally, a budget summary shows all costs.

### ***Project Summaries and Costs***

#### Fisheries Projects.

The Service's Columbia River Fisheries Program Office (CRFPO) would continue monitoring chum salmon abundance in Hardy Creek (Pierce Refuge) and investigate management activities that provide quality spawning habitat for chum salmon. The CRFPO would continue to seek funding for this work from the Bonneville Power Administration. In addition, the CRFPO would request funds to make modifications to the existing auxiliary spawning channel at Pierce Refuge. There are no anticipated costs to the Refuges for this work, other than staff time to coordinate the monitoring and research projects with the Service's CRFPO.

The focus of Objective 2.2 in this CCP is the removal or modification of in-stream barriers to fish migration. We would pursue the modification of culverts blocking fish passage beneath State Route 14 and the railroad at Pierce Refuge and Franz Lake Refuge in partnership with the Washington Department of Transportation, the Burlington-Northern Railroad, and any other possible partners. Removal or modification of other barriers upstream of the Gorge Refuges would be pursued in cooperation with other agencies, watershed landowners, and Service partners.

Gibbons Creek enters Steigerwald Lake Refuge through a water diversion structure and flows through the Refuge in an elevated channel which terminates at a fish ladder on the Columbia River. The fish ladder and control structure are partial blockages to certain species of native fish. The U.S. Army Corps of Engineers (COE) is

conducting a feasibility study to replace these features and to restore connections between Gibbons Creek, Steigerwald Lake and the Columbia River. The Service would coordinate with the study sponsor, Washington Department of Fish and Wildlife (WDFW), and with other agencies to complete the study and to obtain funding to implement the selected alternative. At a minimum, the fish ladder would be modified and vegetation would be enhanced along Gibbons Creek.

Wildlife Habitat Management Projects.

Riparian bottomland forest would be enhanced or restored at Pierce Refuge (76 acres) and Steigerwald Lake Refuge (122 acres). Planting riparian vegetation along Hardy Creek and Gibbons Creek would provide shade and cover for salmon using these creeks. Ground preparation would include killing reed canarygrass with herbicide, discing, planting native grasses, trees and shrubs, and protection of young plants from rodents. Follow up treatments may include watering, weed control, and additional planting for at least five years or until the plants are well established.

At Steigerwald Lake Refuge, five study plots (total of 5 acres) would be established to evaluate restoration of native wet meadow communities in areas dominated by reed canarygrass, with a goal of restoring an additional 20 acres with the most successful methods. We would also restore wetlands at Steigerwald Lake (237 acres) and Pierce (11 acres) through habitat manipulation and/or planting native emergent wetland vegetation. Wetland management at Franz Lake Refuge would include replacing a water control structure and recontouring 5

acres of wetlands east of the Franz Lake dike. West of the dike and along the south shoreline of Franz Lake, we would implement various techniques to restore an additional 37 acres of wetlands.

A newly constructed or improved dike at Steigerwald Lake Refuge, west of the Washougal sewage treatment plant, would enable the Refuge to expand riparian scrub-shrub there from 31 acres to 101 acres. Riparian scrub-shrub habitat would be enhanced or restored at Franz Lake Refuge (up to 95 acres) and Pierce Refuge (22 acres).

Maintenance of oak woodland habitat at Steigerwald Lake Refuge (41 acres) would support a recent initiative launched by the Washington Department of Natural Resources (WDNR) to protect one of the two best occurrences of the Oregon oak/oval-leaf viburnum/poison oak community remaining in Washington. Management would include replacing lost oaks with seedlings and saplings, invasive plant control, and thinning conifers. Similar actions would occur on 28 acres of oaks at Pierce Refuge.

At Steigerwald Lake and Pierce Refuges, nonnative grassland adjacent to existing oak stands would be restored to oak savanna. Restoration would include replacing the nonnative blackberry and grass understory with native grasses, oaks, and shrubs. Restored oak communities would be maintained with controlled burns, herbicides, and selective girdling of competitive conifers. Plans are to work toward a total of 106 acres of oak savanna.

The Service would gradually reduce the amount of grassland managed to provide browse for wintering Canada geese at Pierce Refuge and Steigerwald Lake Refuge to 23 and 168 acres, respectively. Former managed fields would be maintained as old field (approximately 115 acres) or eventually restored to oak savanna. Monitoring at these Refuges would delineate high use areas by wintering Canada geese and further refine the demand for this habitat type.

All of the wildlife habitat management projects in this CCP would require some level of control of noxious weeds and invasive plants. In areas accessible to heavy equipment, herbicides would be applied over several years to reduce the dominance of nonnative plants. In other, less accessible areas, a hydroax would be used in combination with herbicide spraying. In areas inaccessible to heavy equipment, biological controls would be used. In addition to adding seasonal maintenance workers to the Gorge staff, invasive species control would require additional annual funding for fuel, herbicides, and biological controls. These costs are reflected in Table 6-1 as recurring costs. Annual total costs would increase each year as additional habitat is restored, until native vegetation cover is sufficient to suppress invasive plants to acceptable levels.

#### Inventory, Monitoring and Research Projects.

The primary cost for this set of projects consists of additional staff (i.e., biologists), whose duties are described in the Personnel Costs section of this chapter.

#### Water Quality Monitoring and Improvement Projects.

Water quality monitoring would occur on the Refuges as needed to evaluate water quality and to determine sources of contamination. Refuge staff would work with other agencies and landowners in the watersheds to reduce or eliminate the contamination. A water quality monitoring plan would be developed for each Refuge. Basic water quality data, such as pH, temperature, nitrate/nitrites, total solids, and macro invertebrates, would be collected annually by Refuge staff or volunteers.

At Steigerwald Lake Refuge, sediments are required to be cleaned from in front of the diversion structure in Gibbons Creek in two out of every three years. As part of the Steigerwald Lake Refuge feasibility study, the COE would be investigating the feasibility of constructing meanders to trap sediment in Gibbons Creek before it enters the diversion structure.

#### Public Use.

The CCP contains a variety of actions designed to expand and enhance educational and interpretive opportunities and public outreach for Refuge visitors and local communities. The following are among the major activities described under Goal 5.

- Construct vehicle access, parking, signs and comfort station at the interpretive trailhead site on Steigerwald Lake Refuge.
- Construct and operate Gateway to the Gorge visitor's center at Steigerwald Lake Refuge.
- Coordinate construction of an interpretive trail from the Steigerwald

- Lake Refuge Gateway Center.
- Design or update interpretive signs for overlooks at Franz Lake Refuge and Steigerwald Lake Refuge.
- Develop interpretive materials (Refuge brochure, Columbia River Dike Trail information, water quality, website, etc.).
- Cooperate with Port of Camas-Washougal to develop an information kiosk on the Dike Trail at the west entrance to Steigerwald Lake Refuge.
- Develop and implement a site plan for interpretive and environmental education activities at Pierce Refuge.
- Install and maintain railroad crossing at Pierce Refuge to provide safe access to visitors.
- Plan and implement up to eight outreach events at Pierce and Steigerwald Lake Refuges, and a guided kayak and canoe tour into Franz Lake Refuge.
- Develop and maintain a Friends of the Gorge Refuges group and staff of volunteers.

Table 6-1. Estimated costs (excluding Service personnel costs) and priority rank of projects proposed in Alternative B of the Gorge Refuges CCP. (SLR: Steigerwald Refuge; FLR: Franz Lake Refuge; PR: Pierce Refuge).

| Project                                      | Rank | Length<br>(Years) | Costs (x \$1,000) |                             |                | RONS or<br>MMS Code <sup>1</sup>    |
|--|------|-------------------|-------------------|-----------------------------|----------------|-------------------------------------|
|  |      |                   | First<br>Year     | Recurring<br>\$ (years)     | 15-yr<br>Total |                                     |
| <b>Wildlife Habitat Projects</b>             |      |                   |                   |                             |                |                                     |
| Wet meadow restoration at SLR                |      |                   |                   |                             |                |                                     |
| - study plots (5 acres)                      | M    | 6                 | 40                | 1 (5)                       | 45             | New R                               |
| - restoration (20 acres)                     | L    | 15                | 80                | 1 (14)                      | 94             | New R                               |
| Wetland management at FLR                    | M    | 15                | 30                | 3 (14)                      | 72             | New R                               |
| Wetland management at SLR and PR             | H    | 15                | 75                | 75 (first 4)<br>3 (next 10) | 405            | 98005/98007<br>97006<br>All R       |
| Riparian forest restoration at SLR<br>and PR | H    | 15                | 56                | 31 (14)                     | 490            | 98003/98007<br>01001/97004<br>All R |
| Construct interior dike at SLR               | M    | 1                 | 30                |                             | 30             | New R                               |
| Riparian scrub-shrub management:             |      |                   |                   |                             |                |                                     |
| - SLR  | M    | 5                 | 20                | 20 (4)                      | 100            | New R                               |
| - FLR and PR                                 | H    | 19                | 18                | 18 (9)                      | 180            | 01001                               |
| Oak woodland management                      | L    | 11                | 5                 | 1 (10)                      | 15             | N/A                                 |
| Oak savanna restoration                      | M    | 15                | 21                | 26 (4)<br>5 (14)            | 195            | 01001 R                             |
| Maintain goose browse                        | H    | 15                | 5                 | 5 (14)                      | 75             | 00004 R                             |
| Weed control in old fields                   | M    | 15                | 55                | 10 (14)                     | 195            | 98001 R                             |
| Control invasive fish and wildlife           | H    | 15                | 1                 | 1 (14)                      | 15             | N/A                                 |
| Survey and assess invasive species           | H    | 15                | 5                 | 1 (14)                      | 19             | N/A                                 |
| Rehabilitate roads at PR                     | M    | 5                 | 5                 | 1 (5)                       | 10             | N/A                                 |
| Conduct prescribed burning                   | M    | 15                | 5                 | 5 (every 3)                 | 30             | N/A                                 |

| Project   | Rank | Length<br>(Years) | Costs (x \$1,000) |                         |                | RONS or<br>MMS Code <sup>1</sup> |
|---|------|-------------------|-------------------|-------------------------|----------------|----------------------------------|
|   |      |                   | First<br>Year     | Recurring<br>\$ (years) | 15-yr<br>Total |                                  |
| <b>Inventory, Monitoring and Research Projects</b>                      |      |                   |                   |                         |                |                                  |
| Inventory and monitor (separate from monitoring response to management) | H    | 15                | 10                | 2 (14)                  | 38             | 98001 R<br>New R                 |
| Identify, coordinate, and conduct priority research projects            | M    | 15                | 5                 | 5 (14)                  | 75             | 98001 R<br>New R                 |
| <b>Water Quality Monitoring and Improvement Projects</b>                |      |                   |                   |                         |                |                                  |
| Water quality sampling/testing  | H    | 15                | 5                 | every 5<br>years        | 20             | N/A                              |
| <b>Public Use Projects</b>  |      |                   |                   |                         |                |                                  |
| Construct vehicle parking, signs and comfort station at SLR             | H    | 15                | 144               | 2 (14)                  | 172            | 99100971 M                       |
| Construct Visitor Center at SLR   | M    | 2                 | 5,148             |                         | 5,148          | 99110464 M                       |
| Setup and operate Gateway Center  | M    | 15                | 74                | 35 (14)                 | 564            | 99002 R                          |
| Construct and maintain Steigerwald Interpretive Trail                   | H    | 15                | 150               | 3 (every 5)             | 159            | 99122403 M                       |
| Refuge Friends Group  | M    | 15                | 5                 | 1 (14)                  | 19             | 00001 R                          |
| Public outreach events  | H    | 15                | 5                 | 5 (14)                  | 75             | 00001/00002<br>Both R            |
| Design or update overlooks  | M    | 1                 | 25                |                         | 25             | 00001/00002<br>Both R            |
| EE and interpretive materials   | H    | 15                | 15                | 5 (every 5)             | 30             | 00001 R<br>00002 R               |
| Media materials developed with adjoining public lands                   | L    | 15                | 10                | 5 (14)                  | 80             | 00001 R<br>00002 R               |
| Coordinate w/Port to develop information kiosk at SLR                   | H    | 1                 | 15                | 1 (every 5)             | 18             | N/A                              |
| Facility improvements at PR   | M    | 15                | 25                | 2 (14)                  | 53             | New R                            |
| Upgrade/ maintain RR-crossing at PR                                     | M    | 15                | 175               | 10 (14)                 | 315            | New R                            |
| Develop Site Design Plan for PR   | H    | 2                 | 25                |                         | 25             | New R                            |

| Project  | Rank | Length (Years) | Costs (x \$1,000) |                      |                | RONS or MMS Code <sup>1</sup> |
|--|------|----------------|-------------------|----------------------|----------------|-------------------------------|
|  |      |                | First Year        | Recurring \$ (years) | 15-yr Total    |                               |
| Environmental education programs and partnerships with local schools | H    | 15             | 10                | 8 (14)               | 122            | 00001/00002<br>98009 All R    |
| Construct dog-proof fence at toe of Columbia River Dike Trail at SLR | M    | 1              | 45                | 1 (every 5)          | 48             | 04001 M                       |
| <b>Resource Protection Projects</b>                                  |      |                |                   |                      |                |                               |
| Law enforcement supplies/equipment                                   | H    | 15             | 65                | 5 (14)               | 135            | 98009 R                       |
| Cultural resources inventory   | M    | 1              | 80                | 6 (14)               | 164            | 98011 R<br>97013 R            |
| <b>TOTAL of All Projects</b>   |      |                | <b>\$6,487</b>    | <b>\$2,768</b>       | <b>\$9,255</b> |                               |
| <b>TOTAL of High Priority Projects</b>                               |      |                | <b>\$604</b>      | <b>\$1,379</b>       | <b>\$1,983</b> |                               |

<sup>1</sup> RONS (Refuge Operating Needs System) and MMS (Maintenance Management System) are national databases of unfunded operational and maintenance needs for refuges. RONS projects are designated “R,” and MMS projects are designated “M.” If the proposed project is not in the database, the project is “new.” If total project cost is ≤\$20,000, the project is not applicable (N/A).

**Personnel Summaries and Costs**

Currently, the Gorge Refuges are staffed with a permanent Refuge Manager. The minimum level of staffing needed for the Gorge Refuges to provide only the most essential services (i.e., “essential staff”) includes four additional permanent full time staff and one full-time term person (Table 6-2). These positions are in the RONS database and have been approved by the Service’s Washington Office. However, none of these positions are currently funded.

Essential staff alone would not be sufficient for the Refuges to completely fulfill their purposes. Full implementation of the CCP would require the Gorge Refuges to increase staff above the currently unfunded essential staff. Over the next 15 years, the Service would need to add three permanent full-time

staff, one permanent part-time position, and three temporary-seasonal positions to the essential staff (Table 6-2). The rate at which the CCP is implemented is dependent upon receiving adequate funding and staffing. The following additional positions are considered necessary to provide the staffing needed to accomplish proposed projects and normal Refuge operations. Table 6-3 displays the proportion of a full-time equivalent (FTE) employee for 13 staff positions needed to fully implement the major projects described in the CCP.

Refuge Operations Specialist (one permanent full-time).

Implementation of the more than 38 major projects described in the CCP would require the coordinated effort of a staff of 12 people. A greatly expanded public use program at Steigerwald Lake Refuge would include

operation of an interpretive center and trail. Additional opportunities for environmental education would be provided, as would special events and other outreach activities. The Refuge Manager would need the assistance of a Refuge Operations Specialist to oversee project implementation and to coordinate the staff activities.

Biological Technician (one permanent full-time; one temporary three-quarter time).

Two Biological Technicians are needed to assist the Refuge Biologist to implement Goals 1, 2, 3 and 4. A major component of their job would be to inventory and monitor trust species, as well as the conservation targets identified in the CCP. They would also assist with evaluating the response of wildlife and vegetation to habitat management on the Gorge Refuges. The Biological Technicians would support a greatly enhanced invasive species monitoring and control program. Their assistance would also be needed to study water quality in Refuge streams. While this level of inventory and monitoring can be time consuming, it is essential for determining if the Refuges are achieving the objectives set forth in the CCP, or if adaptive management is needed. The Refuges would be assisted in this endeavor by the development of a standardized inventory and monitoring protocol which the Service is currently developing for National

Wildlife Refuge System. The Biological Technicians are needed to meet this evolving requirement.

Maintenance Workers (two temporaries–6-months per year).

These positions would work with the permanent full-time maintenance worker to complete restoration on approximately 850 acres of wetland, riparian, grassland, and oak habitat. This work would entail removal of nonnative plants, applying herbicides, discing, cultipacking, fertilizing, and seeding. Follow up weed control and occasional replanting would be required. Maintenance Workers would also be involved in managing the 115 acres of old fields, specifically to control noxious weeds. In addition, there are many other maintenance and other operations tasks which would be required as Refuge habitats are restored, enhanced and maintained.

Administrative Support Assistant (one permanent full-time).

This position would provide administrative assistance to the 12-person Gorge Refuges staff. The Administrative Assistant would respond to the anticipated increase in telephone and mail contacts, bill paying, reports, filing, and other administrative tasks.

Table 6-2. Annual salary and benefits for current and proposed staff to accomplish the projects identified in the Gorge Refuge CCP. All positions are permanent unless otherwise noted.

| Position Title  | Funding Status        | Proportion of FTE <sup>a</sup> | Series /Grade | Annual Cost (x1000) |
|---|-----------------------|--------------------------------|---------------|---------------------|
| <b>Essential Staff</b>                                |                       |                                |               |                     |
| Refuge Manager  | funded at GS-11 level | 1.0                            | GS-485-12     | \$ 90               |
| Wildlife Biologist <sup>b</sup>                       | unfunded              | 1.0                            | GS-486- 9     | \$ 60               |
| Outdoor Recreation Planner <sup>b</sup>               | unfunded              | 1.0                            | GS-0023-9     | \$ 60               |
| Maintenance Worker (full-time term)                   | unfunded              | 1.0                            | WG-4749-8     | \$ 60               |
| Maintenance Worker <sup>b</sup>                       | unfunded              | 1.0                            | WG-4949-8     | \$ 60               |
| Park Ranger/LEO <sup>b</sup>                          | unfunded              | 1.0                            | GS-025-7      | \$ 35               |
| <b>Additional Staff Needed to Fully Implement CCP</b> |                       |                                |               |                     |
| Refuge Operations Specialist                          | unfunded              | 1.0                            | GS-485-11     | \$ 75               |
| Information & Education Specialist <sup>b</sup> (PPT) | unfunded              | 0.5                            | GS-1001-5/7   | \$ 25               |
| Biological Technician                                 | unfunded              | 1.0                            | GS-0404-6     | \$ 40               |
| Biological Technician (temporary-seasonal)            | unfunded              | 0.75                           | GS-0404-5/6   | \$ 30               |
| Maintenance Worker (temporary-seasonal)               | unfunded              | 0.5                            | WG-4749-08    | \$ 30               |
| Maintenance Worker (temporary-seasonal)               | unfunded              | 0.5                            | WG-4749-08    | \$ 30               |
| Administrative Support Assistant                      | unfunded              | 1.0                            | GS-0303-5/6   | \$ 55               |
| <b>TOTAL COSTS</b>                                    |                       |                                |               | <b>\$650</b>        |

<sup>a</sup> FTE = Full Time Equivalent

<sup>b</sup> This position is in the RONS database

Table 6-3. Estimated fraction of a full-time equivalent (FTE) Service employee for 13 staff positions (11.5 FTEs) to complete projects proposed in the Gorge CCP.

| Proposed Project             | Fraction of FTE for Staff Position <sup>1</sup> |            |            |            |            |            |            |            |            |            |             |            |
|------------------------------|---|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|------------|
|                              | RM  | ROS        | BIO        | BIO<br>TEC | BIO<br>TEC | ORP        | I&E<br>SPC | LEO        | MW         | MW         | MW<br>(n=2) | AA         |
| Fisheries                    | .01   | .02        | .10        | .02        |            |            |            |            |            |            |             |            |
| Wildlife Habitat             | .21   | .38        | .53        | .39        |            |            |            |            | .33        | .33        | .26         |            |
| Monitoring and Research      | .03   | .02        | .15        | .20        | .70        |            |            |            |            |            |             |            |
| Water Quality                | .02   | .02        | .08        | .14        |            | .01        | .02        |            |            |            |             |            |
| Public Use                   | .03   | .13        | .03        | .02        | .01        | .83        | .40        | .20        | .05        | .05        | .09         |            |
| Coordination and Partnership | .25   | .05        | .10        |            |            | .10        |            |            |            |            |             |            |
| Resource Protection          | .01   | .03        |            | .01        |            | .01        | .01        | .80        | .01        | .01        | .01         |            |
| Administration and O&M       | .44   | .38        | .01        | .22        | .04        | .05        | .07        |            | .61        | .61        | .64         | 1.0        |
| <b>FTEs</b>                  | <b>1.0</b>                                      | <b>1.0</b> | <b>1.0</b> | <b>1.0</b> | <b>.75</b> | <b>1.0</b> | <b>.50</b> | <b>1.0</b> | <b>1.0</b> | <b>1.0</b> | <b>1.0</b>  | <b>1.0</b> |

<sup>1</sup> Staff position codes: RM =Refuge Manager; ROS = Refuge Operations Specialist; BIO = Wildlife Biologist; BIO TECH = Biological Technician; ORP = Outdoor Recreation Planner; I&E SPC = Information and Education Specialist; LEO = Law Enforcement Officer; MW = Maintenance Worker; AA = Administrative Assistant

**Maintenance Costs**

Maintenance costs (Table 6-4) reflect the backlog of maintenance or replacement needs for existing buildings, facilities, and equipment. These costs are not included in the project costs listed above and in Table 6-1. As new facilities and equipment are acquired, maintenance costs recorded in the MMS database would need to be updated.

Table 6-4. Maintenance projects and associated costs in FY 2003 MMS database for the Gorge Refuges.

| Category           | Cost (x1,000)  | Fund Source |
|--------------------|----------------|-------------|
| Buildings          | \$ 635         | 1262        |
| Facilities         | \$ 838         | 1262        |
| Equipment          | \$ 75          | 1262        |
| <b>TOTAL COSTS</b> | <b>\$1,548</b> |             |

**Budget Summary**

Total costs to fully implement the Gorge Refuges CCP over the next 15 years are the sum of project costs, staffing costs, and maintenance costs (Table 6-5). Full implementation of the CCP would require an increase in the Gorge Refuges average annual expenditures for the past five years of approximately \$1,177,000.

Implementation of high priority projects only would require an average annual increase of \$666,000.

Annual salaries represent 45 percent of total cost for all projects and 70 percent of total costs for high priority projects.

Construction and operation of the Gateway Center (approximately \$5,712,000) comprises 26 percent of all project costs.

Table 6-5. Estimated costs to implement the Gorge Refuges CCP.

| Budget Category                   | Project Costs |               |
|-----------------------------------|---------------|---------------|
|                                   | All           | High Priority |
| One-time Expenditures             | \$ 6,487,000  | \$ 604,000    |
| Recurring Costs                   | \$ 2,768,000  | \$ 1,379,000  |
| Salaries (15 years)               | \$ 9,750,000  | \$ 9,750,000  |
| Maintenance Needs                 | \$ 1,548,000  | \$ 1,548,000  |
| <b>Total Costs for 15 Years</b>   | \$21,592,000  | \$13,932,000  |
| <b>Total Average Annual Costs</b> | \$ 1,440,000  | \$ 929,000    |

**Partnership Opportunities**

The Refuge would partner with a variety of agencies, organizations and individuals to achieve the goals and objectives set forth in this plan. We would seek to maintain existing partnerships and develop new ones for the common purpose of increasing management efficiency and overall effectiveness, disseminating knowledge, and growing community support for the Refuges and the National Wildlife Refuge System. The Gorge Refuges are ideally located to take full advantage of community support. Located on the north shore of the nationally recognized Columbia River Gorge, the three Refuges would provide an important focal point and demonstration area to increase environmental awareness and community involvement.

The Service would coordinate its efforts to protect and restore fish and wildlife habitat with a number of partners. The Refuge would continue to strengthen partnerships with the WDFW and the Service’s CRFPO to protect, monitor and restore habitat for native fish. Refuge staff would continue to coordinate with Washington Department of Ecology (WDOE) and Clark County Public Works to clean up Gibbons Creek above the diversion structure on Steigerwald Lake Refuge. We would work with others to encourage good stewardship practices in the Gorge Refuges watersheds. Refuge staff would continue to work the COE and WDFW on a feasibility study at Steigerwald Lake Refuge (Appendix H). We would coordinate with the U.S. Forest Service to improve habitat and public use management on Forest Service land within the approved acquisition boundary of Franz Lake Refuge,

as well as on adjacent public lands. We would continue to cooperate with the WDFW to establish a self-sustaining population of western pond turtles at Pierce Refuge, as well as consider the feasibility of establishing a population at Steigerwald Lake Refuge. The Service would enhance coordination with The Nature Conservancy for the protection of Columbia yellowcress. Improved coordination with the U.S. Forest Service would help to ensure habitat remains protected at Ives Island and within the Columbia River channel between the Island and Pierce Refuge. The Refuge would continue to work with representatives of Washington State Parks, WDNR, WDFW, U.S. Forest Service, The Nature Conservancy, and others to protect watershed values and functions within the watershed of Pierce Refuge. Steigerwald Lake Refuge would continue to provide a location for Southwest Washington Clean Air Agency to monitor air quality on the Washington entrance to the Columbia River Gorge. We would cooperate with the WDNR to protect the Washougal Oaks Natural Resources Conservation area and Natural Area Preserve.

Opportunities to partner with other agencies to enhance or increase public use would be pursued. The Refuge would partner or coordinate with the Port of Camas-Washougal on management of the Columbia River Dike Trail, Captain William Clark Park, and water management issues at Steigerwald Lake Refuge. At Pierce Refuge, the Refuge would seek to partner with the Town of North Bonneville to provide a wildlife viewing and interpretation trail along the Refuge's eastern boundary. Cooperative ventures also would be pursued

with the U.S. Forest Service to develop interpretive displays at the Steigerwald Lake Gateway Center and to improve or develop Refuge overlooks on State Route 14.

Refuge staff would investigate coordination with local schools and the Educational Service District 112 to improve environmental educational opportunities on the Refuges. The ESD 112 is funded primarily through federal grants and fees for services, with some funding from Washington State. This regional service district is a link between schools in southwest Washington and the State educational system, providing more than 260 different administrative and educational services in early learning and child care programs, youth programs, instructional services and technology, and specialized student services.

The Service would develop a strong volunteer services program and Friends Group for the Gorge Refuges. Well-developed programs at refuges around the county demonstrate how these programs can be instrumental in achieving much more in all program facets than would be possible with paid Refuge staff alone. A Friends Group and other volunteer opportunities would also encourage community involvement and support, as numerous people can directly contribute to Refuge programs. Moreover, enhanced collaboration with colleges, universities, local educators, conservation organizations, and environmental education consortiums would enable the Refuge to carry out its plans to improve and enlarge the environmental education, research, and monitoring programs. For example, several

members of the Vancouver Audubon Society are keenly interested in the Steigerwald Lake Refuge; one member has been conducting avian surveys on the Refuge for more than 5 years.

### **Step-Down Management Plans**

This CCP is a strategic document that describes the desired future conditions of the Gorge Refuges and provides long-range guidance and direction for their management over the next 15 years. More specific guidance would be needed to implement some of the goals and objectives in the plan. This guidance would be in the form of step-down management plans. Step-down management plans describe the specific strategies and implementation schedules we would follow, “stepping down” from general goals and objectives.

During development of the CCP, the Service either incorporated or identified step-down plans needed to achieve CCP goals and objectives. The only existing step-down plans for the Gorge Refuges are fisheries management plans for Steigerwald Lake Refuge and Pierce Refuge prepared in 1992. Of these two plans, only the Steigerwald Lake Refuge Fisheries Management Plan is approved for implementation. Both plans were reviewed by the Service and WDFW during the CCP planning process, and appropriate information was integrated into the management goals, objectives, and strategies proposed in the CCP. Below, we describe the step-down management plans that would be developed after the CCP has been approved. The preparation of new step-down plans typically would require further compliance with NEPA and other

policies, and opportunity for public review. The anticipated date for completing each plan is indicated in parentheses.

#### ***Integrated Pest Management Plan*** (2005)

This plan would provide procedures for collecting additional information including the identification, biology, distribution, size of infestation, and impact of current and future noxious and invasive species of vegetation, fish and wildlife, such as Canada thistle, bullfrogs and carp, on native natural resources. It would provide goals and objectives, both short- and long-term, and describe the most important tasks to accomplish. The plan would address strategies to implement chemical, mechanical and biological control methods; monitoring needs, and the resources required to control the target species. The IPM plan would also describe survey, removal and monitoring techniques for terrestrial and aquatic invasive and nonnative animals (vertebrates and invertebrates).

#### ***Fisheries Management Plan*** (2005)

This plan would update the fisheries management plan for Steigerwald Lake Refuge, signed in 1992, and add fish management objectives and strategies for Pierce and Franz Lake Refuges. The plan would describe coordination between the Refuges and the Service’s CRFPO to continue monitoring and habitat restoration and improvement projects at the Gorge Refuges, particularly for projects targeting the chum salmon population using Hardy Creek at Pierce Refuge. It would address efforts by the Service to work with other

agencies, local communities, organizations, and private landowners to accomplish stream improvements and barrier removals to benefit native fish, especially anadromous species. It would also include a description of plans for outreach and environmental education activities to be conducted by CRFPO to disseminate fish research and management information to the public.

***Biological Inventory and Monitoring Plan (2006)***

This plan would describe inventory and monitoring requirements, priorities, techniques and time frames for acquiring baseline and species specific data for Refuge habitats and wildlife resources. Priority plant communities, trust species (migratory birds including shorebirds, neotropical passerines, and waterfowl), listed species (federal and state threatened, endangered, and species of concern), and conservation target species would be inventoried. Population trends for listed species and key conservation target species would be monitored. Wildlife habitat associations would be studied. Baseline inventories, trend data, and wildlife habitat associations are essential to develop and refine wildlife habitat management on the Refuge. These plans would be developed in accordance with guidelines set forth in the U.S. Fish and Wildlife Service's *Fulfilling the Promise* document.

***Visitor Services Plan (2006)***

The Visitor Services Plan for the Gorge Refuges would follow the guidance for refuge visitor services as directed by the CCP. This plan identifies measurable

objectives and realistic strategies related to visitor services. In the plan, the six priority public uses would be addressed as to how they would be conducted or not conducted at each Refuge. The outcome of this plan is to ensure that public uses are adequately balanced with Refuge management activities and goals and would serve to define a Refuge visitor's whole experience.

***Moist Soil/Water Management Plan (2007)***

This plan would identify the procedures for managing those Refuge wetlands and lakes that are controlled with dikes and water control structures, for the purpose of achieving specific Refuge goals and objectives. These procedures include basic hydrological regimes, flooding and draw down time frames, water elevation targets, techniques for promoting native wetland vegetation, and annual infrastructure requirements. The wetland management guidelines in the CCP (Appendix M) would provide the framework for the Moist Soil/Water Management Plan.

***Habitat Restoration Plan (2007)***

This plan would address the highest priority habitat restoration needs on the Gorge Refuges. The plan would include restoration and enhancement of key terrestrial habitats, such as oak savanna and riparian corridors, as well as wetlands. It would focus on restoration needs outlined in the final CCP and would include basic techniques and guidelines for accomplishing these projects. Habitat (vegetation stand characteristics, water, substrate types) and wildlife (species use of each habitat by season and type of use) characteristics

would be surveyed before and at varying intervals following habitat restoration activities.

***Public Outreach Plan*** (2007)

The Public Outreach Plan is a step-down plan that identifies key Refuge messages and how those messages are to be delivered to the identified or desired target audience. Since this plan usually involves actions and tasks, time lines and key dates are also identified. Always included is a step for evaluation and the measurement of success.

***Water Quality Monitoring Plan*** (2008)

This plan would address monitoring sites and stations targeted for ongoing research on the quality of water flowing into the Refuge and how the water on the Refuge changes with time. It would state how various habitat types (streams, lakes, and impoundments) would be monitored for nutrients, pesticides, and other chemicals which may adversely affect them.

***Biological Research Outreach Plan*** (2008)

This plan would describe a list of the top five highest priority Refuge research and study needs as identified through consultation with regional experts and through the CCP planning process. The plan would describe the methods employed to promote research activities, a list of potential research organizations/universities, requirements for the development or improvement of support infrastructure, and guidelines for the implementation of research activities.

## **Monitoring and Evaluation**

Monitoring has been ongoing on the Gorge Refuges. However, the monitoring has been intermittent and generally focused on key species and habitats, typically those considered sensitive (e.g., threatened or sensitive species), or those identified in the Refuge purpose (e.g., migratory waterfowl). Monitoring would increase over the life of the CCP, becoming an integral and ongoing program. The monitoring program would focus on measuring the success of CCP implementation, particularly the effectiveness of habitat restoration projects. The program would be designed to provide some flexibility in CCP implementation by allowing the Refuge to make minor adjustments to management practices or monitoring methods if feedback from Refuge research and monitoring indicates such a change is needed to better achieve the goals and objectives identified in the CCP. This approach, called adaptive management, is considered the standard for refuge management nationwide. Specific guidance for collection, processing and evaluation of monitoring data would be provided in the step-down management plans previously identified in this chapter.

## **CCP Amendment and Revision**

The CCP would guide Refuge management for the next 15 years. The Regional Director or designee approves the CCP and step-down plans, determines planning priorities, and allocates funds to develop and implement plans. Accomplishments in meeting the CCP objectives would be reported through standard reporting mechanisms and budgeting procedures. The

Refuge Manager is responsible for implementing an approved CCP and step-down plans, tracking progress, and recommending changes based on monitoring and evaluation. The CCP would be reviewed annually to determine if revisions are required. The CCP would be revised when significant new information becomes available, ecological conditions change, major Refuge expansion occurs, or when the need to do so is identified during plan review. The CCP would be revised every 15 years or sooner, if necessary. All CCP revisions would be subject to NEPA compliance. Minor revisions that meet the criteria of a categorical exclusion would be documented in an Environmental Action Statement, in accordance with 550 FW 3.3.

During the planning process for this CCP, the COE proposed to conduct a Feasibility study at Steigerwald Lake Refuge (Appendix H). As of August 2004, the study was not funded. If the study is

completed, significant new information would likely emerge as a result. This study could identify alternatives for habitat restoration and fish passage that may not have been adequately addressed in the CCP/EA. For example, the study may recommend removal or modification of the elevated channel and reconnection of the Columbia River and Gibbons Creek to wetlands to restore fish passage. Funding from sources outside the Service may also become available to implement key findings from the study. The alternatives currently under study are described in Appendix H. A more complete analysis of alternatives would be evaluated in the Feasibility Study and associated NEPA document (EA or EIS). Opportunities for public comment on the draft EA or EIS would be provided. If the selected alternative would be a significant change from the CCP, the appropriate NEPA document would be used to amend the CCP.