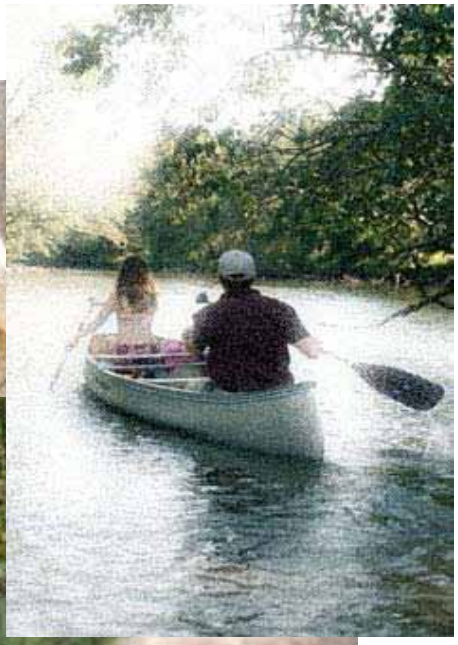
LUCKIAMUTE STATE NATURAL AREA MASTER PLAN

APRIL 2009



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Nature
HISTORY
Discovery

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Additional Luckiamute State Natural Area Master Plan Documents

The following background documents were prepared as support for the Luckiamute State Natural Area Master Plan:

Resource Maps of the Parks:

- Plant Communities and Conditions (3 maps)
- Water Features (3 maps)
- At-Risk Species (1 map)
- Cultural Resource Sensitive Areas (1 map)
- Topography (3 maps)

Background Reports:

- "Natural Resource Inventory for Natural Vegetation, At-Risk Species and other Fish and Wildlife Resources at Luckiamute" (Oregon Natural Heritage Information Center, 2003).

The above documents may be viewed at:

Oregon Parks and Recreation Department
North Mall Office Building
725 Summer Street NE, Suite C
Salem, OR 97301

I. INTRODUCTION

Purpose

This master plan outlines the Oregon Parks and Recreation Department's (OPRD) plans for the future development, use and management of Luckiamute State Natural Area. Included in the master plan are summaries of the issues, resource assessments, recreation needs, goals and strategies, development concepts and resource management guidelines associated with this park, and the process followed in formulating and adopting the master plan.

The purpose of a state park master planning process is to plan for both the protection and public enjoyment of the resources that occur in the park. Master plans identify and provide for the most appropriate recreational uses based on resource opportunities and constraints, development opportunities and constraints, public recreation needs, and OPRD's roles as a statewide outdoor recreation provider. A master plan may also identify lands that OPRD would consider acquiring from willing sellers to add to the state park, as well as any lands that are under OPRD ownership that should not be part of the state park. A master plan also provides a basis for preparing partnership agreements, budget and management priorities and detailed development and management guidelines, and for requesting land use approvals from affected local governments for planned projects.

Authority

OPRD prepares master plans for its properties under the authorities embodied in state statutes and rules, which include ORS 390.180, OAR 736 Division 18, ORS 195.120 and OAR 660 Division 34.

Products of a Master Planning Process

- A park master plan is a written and illustrated reference containing summarized information about, and long term plans for the park. It serves as a guide for the parks 20-year future. Contained in the master plan are summaries of the planning purpose and process, existing park facilities, future recreation demand, the suitability of the land for recreational uses or resource protection, issues related to public use and management, the goals, strategies and development concepts for future use and development in the park, and guidelines for managing the park resources.
- Development concepts in the master plan show how to fit needed facilities into the park. These are the conceptual blueprints for the park. The development concepts reflect the resource constraints and opportunities and address the goals and strategies established in the planning process. They describe the appropriate types, sizes, locations and access for the proposed facilities.
- Resource maps, prepared as background information for the master plan depict locations of natural, cultural and scenic resources in the park. These maps are used frequently by park

staff, other resource agencies and interest groups and park "friends" groups. They provide a basis for resource management and development decisions.

- The master planning process is an opportunity for the public to discuss and provide input on the future of the park. The process includes several public meetings and mailings and invites the public to provide comments on the pertinent issues and the proposals and guidelines for the park.
- Partnership opportunities are often identified. The planning process is an opportunity to encourage partnerships with other agencies, interest groups and neighbors to benefit park implementation and management.

Process for Completing a Master Plan

In the first steps of the planning process, information is gathered on the park's natural, cultural and scenic resources, existing park uses and facilities, recreation needs and opportunities and interpretive opportunities, as well as information about the local community.

Issues involving the use, development and management of the park property are identified through meetings with department staff, an advisory committee, affected local government officials and the general public.

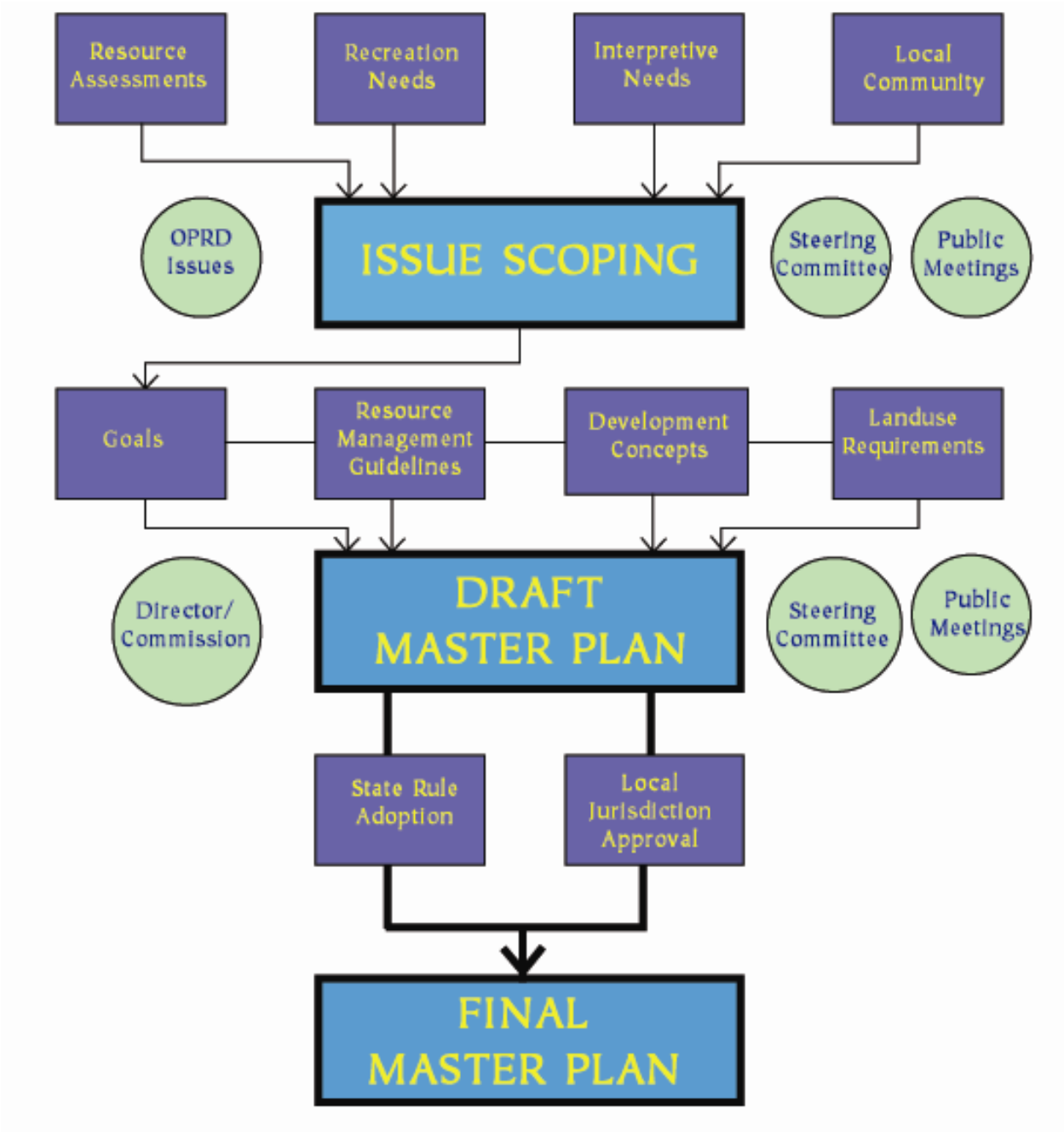
Goals and strategies for future use and development of the park and management of the park resources are determined. Resource management guidelines and development concepts for the park are formulated.

All of the above information is compiled into a draft master plan that is reviewed by department staff, the advisory committee, the interested public, and by the OPRD Director and the Oregon Parks and Recreation Commission. Comments are collected and the master plan is edited based on guidance from the Director and Commission.

The draft master plan is checked for compatibility with the state land use goals and local comprehensive plans in consultation with local government planning officials. If the master plan is determined to be compatible, the draft plan is then presented for adoption as a state rule. Additional comments are received from the public in a formal rule-making hearing, which sometimes leads to additional edits prior to final adoption.

If the draft master plan is not compatible with local plans, OPRD takes steps necessary to achieve compatibility, either by making appropriate changes in the master plan or by requesting pertinent changes in the local plans through the appropriate land use application process. The master plan cannot be adopted as a state rule until it is compatible with local land use plans.

Master Planning Process



Master Plan Implementation and Amendments

Once the park master plan is adopted as a state rule, any development in the park must be consistent with the master plan. Minor variations from the adopted master plan may be allowed if such variations are determined by the OPRD Director and the affected local government to be consistent with the master plan in accordance with OAR 736-018-0040. Any use that is not consistent with the master plan requires a master plan amendment. Master plan amendments must follow the same process used to adopt the master plan, which includes re-adoption as a state rule and a determination of compatibility with local government comprehensive plans.

Park master plans are amended when changes in circumstances are significant enough to warrant changes. The OPRD Director considers the recommendations of OPRD staff and outside interests in prioritizing the park master plans to be adopted or amended each biennium. The director's decisions are based on consideration of various factors, such as:

- Recreation demands that affect the park, and opportunities in the park to help meet the demands;
- The need for significant changes in park uses or facilities to improve park functions;
- Significant changes in the conditions of, or threats to, natural, cultural or scenic resources within or surrounding that park where a master plan amendment is needed to address the changed conditions or threats;
- Conflicts or potential conflicts between park uses and neighboring land uses where a master plan amendment is needed to address the conflicts;
- Opportunities to establish partnerships to implement previously unplanned projects that fit the park setting;
- Alternatives to amending the master plan that would adequately address needed changes, such as interagency management agreements, partnerships, etc.

Why Master Plan This Park Now?

Several factors are considered in determining which parks will be master planned each year within the State Park system. OPRD's Director sets master plan completion priorities after a review of staff recommendations. This master plan was chosen to be completed at this time for the reasons summarized below.

Luckiamute has been identified as a high priority site for floodplain restoration by multiple conservation interest groups and natural resource agencies. Recent land acquisitions have doubled the size of the park, making it even more valuable for restoring natural floodplain functions and expanding and connecting natural habitats along the floodplain corridor. An assortment of native fish, reptile, amphibian, bird and mammal species, some of which have become increasingly rare in the Willamette Valley, inhabit the park's natural and human-altered landscape. The land acquisitions, and existing and planned restoration projects at

Luckiamute, respond to the broader multi-agency strategy for protection and restoration of floodplain functions in the Willamette Valley.

Recent information on recreation trends, such as data presented in the Statewide Comprehensive Outdoor Recreation Plan, indicate that recreation activities that occur in natural area settings are growing in popularity. Trails and trailhead facilities are needed to support low impact recreation uses in the park.

Luckiamute is a high priority site for river paddlers. The existing primitive boat-in camp near the Luckiamute-Willamette confluence is expected to increase in popularity with use of the Willamette Water Trail. The park's frontage on the Luckiamute River presents an opportunity to provide upland access to the river system for launching non-motorized craft, and to leave vehicles overnight to facilitate multi-day trips on the Willamette.

Additionally, OPRD's Regional Interpretive Framework identifies Luckiamute as a priority site for interpreting Willamette River floodplain functions and values for visitor education and enjoyment.

With the recent property acquisitions at Luckiamute, OPRD acquired buildings that are suitable to support park operations. OPRD intends to establish an administrative office and maintenance facility using the buildings on the former Willamette Botanicals property. Two existing dwellings on the park property can potentially be used in conjunction with park oversight. State land use laws require OPRD to adopt a master plan for the park in order to establish park administration facilities on parklands that are zoned for agricultural.

A master plan is needed to comprehensively address the recreation uses and facilities to assure that they are compatible with resource management and restoration objectives for the park.

II. MASTER PLAN SUMMARY

The goals, development concepts and resource management guidelines presented in this master plan are intended to provide for an appropriate balance of park resource protection and public recreation access. Recreation opportunities will be provided that are compatible with each other, with neighboring land uses, and with the park's important natural, cultural and scenic resources.

The general goals addressed in this master plan are the following:

- Protect, manage, enhance and restore as appropriate, the values and natural functions of the floodplain resources.
- Provide recreation opportunities and experiences that are appropriate for the park resources and recreation setting.
- Provide for adequate management, maintenance, rehabilitation and park operations.
- Provide for safe, efficient, identifiable and pleasant access and circulation.
- Promote public awareness, understanding, appreciation and enjoyment of the recreation setting through resource interpretation.
- Form partnerships and agreements to aid in achieving goals.

The key park development concepts in this master plan include the following:

- Retain the boat landing and primitive boat-in camp known as Luckiamute Landing, with minor redesign and appropriate sanitation and signage, to support Willamette Water Trail use.
- Develop a paddlers' access on the Luckiamute River with appropriate sanitation and signage.
- Retain the existing north trailhead, with minor redesign and appropriate sanitation and signage, and expand the north trail system to include trail loops that provide river views and protect sensitive wildlife habitats.
- Develop a new south trailhead, with appropriate sanitation and signage, to replace the informal parking area currently used as the south trailhead. Provide a viewing site at the new trailhead with a view across multiple habitat types and interpretation of the floodplain complex. Redesign the south trail system to include loops that provide river views and protect sensitive wildlife habitat.
- Develop access to the west pond with a wildlife viewing platform and a fishing platform that accommodate disabled visitors.
- Retain the existing residence on the former Baker property to be used for park staff or caretaker housing.
- Establish park administration facilities using the existing buildings on the former Willamette Botanicals property.

- Provide facilities to support volunteer park hosts to support visitor services and oversight and light maintenance activities.

The key resource management guidelines in this master plan address the following objectives:

- Continue to support viable natural resource management and restoration projects, and adhere to established grant and partnership agreements, conservation easements, and related permits.
- Expand previously prepared assessments and plans for natural resource management and restoration to include the entire park and provide for more detailed assessment of at-risk and sensitive species.
- Protect at-risk and sensitive species, and manage and restore habitats that are critical to their survival and recovery.
- Manage forested areas for forest health and habitat.
- Manage, and restore where appropriate, habitats of conservation concern including wetlands, riparian forests, oak woodlands, wet prairie, upland prairie and oak savanna.
- Control the spread of invasive species and restore affected areas to native habitat conditions where feasible.
- Maintain and provide important views to and from the rivers, across open meadows, and along Buena Vista Road.
- Protect any important cultural resource sites.

III. PLANNING CONTEXT

Location

The Vicinity Map at the end of this chapter illustrates the general location of the park relative to the surrounding communities, transportation system and major water bodies. Also included at the end of this chapter is the larger scale "Study Area" map that shows the location of the park on an aerial photo base.

The park fronts on the west bank of the Willamette River, roughly five miles west of the Interstate 5 corridor, and roughly five miles north of Albany at the park's southern end. Two major tributary rivers flow into the Willamette at this location. The northern tip of the park is formed where the Luckiamute flows into the Willamette from the west. The Santiam flows from the east and enters the Willamette less that a quarter mile upriver from the Luckiamute-Willamette confluence. Buena Vista Road forms the west boundary of the park's south tract, just north of its intersection with Spring Hill Road. Most of the park is in Polk County. The southern end of the park is in Benton County.

Physiographic Setting

The park setting is in the middle of the Willamette Valley ecoregion, which extends from the Cascades to the Coast Range and from the Columbia River to the Klamath Mountains.

OPRD's Role as a Statewide Recreation Provider

OPRD's Mission is to:

"Protect and provide outstanding natural, scenic, cultural, historic and recreational sites for the enjoyment and education of present and future generations."

OPRD master plans help to accomplish the OPRD mission by establishing the goals, development concepts and resource management guidelines that strike a balance between recreational use and development and resource protection.

The Oregon State Parks System has provided Oregon's residents and visitors with reputable park services since its initiation in 1929. Originally, the department saw its role as a protector of the scenic resources related to highway travel and emphasized land acquisition. From the department's first land acquisition in 1929 until now, OPRD has acquired over 95,000 acres of diverse, historic and scenically treasured public land. This is largely due to OPRD's origin within the early State Highway Division. OPRD did not become a separate department from the later Oregon Transportation Department until 1989. Much of OPRD's role has been shaped by its connection with Oregon's highway locations and their enjoyment. The early park system was built upon a framework of roadside rest areas and scenic corridor preserves.

Developed overnight camping facilities were not available in Oregon's state parks until the 1950s. The demand for such facilities began to boom in the post WWII period. OPRD expanded its role to include recreation development beyond just rest area facilities to include campgrounds and more developed day use and swim areas. Today OPRD has 53 parks with overnight accommodations.

As life styles have changed so have approaches to camping, and OPRD has tried to diversify the types of camping provided in its parks. The current OPRD role for camping includes providing tent sites, full RV hookup sites, hiker-biker sites and close by, walk-in tent camping. Very few OPRD properties offer dispersed or pack-in camping. Most OPRD camps are considered to be "high amenity" within a scenic setting, including flush toilets, showers and access to water, garbage and electricity somewhere in the camp. The camps are generally not far from a state highway. In recent years, OPRD has been constructing yurts or cabins in many of its larger camping parks in an effort to extend the camping season. Group camping and horse camping are also popular and growing in state parks across the state.

Another common OPRD role is providing high quality grounds and facilities for accessing adjacent resources such as lakes, ocean beaches, rivers and other attractions. Again, the parks are generally not far from a state highway and include developed facilities with vehicular access.

In the 1970's, with the advent of a variety of natural and cultural resource protection laws, OPRD discovered that its scenic lands and traditional access sites were also high quality natural and cultural resources. Master planning for protection and public access to OPRD's parks began in the 1970's to address this emerging dual role.

OPRD's role was also expanded in the 1970's with the adoption of Willamette River Greenway legislation and Statewide Goal 15. More than 90 properties along the Willamette River have been added to the state park system since the beginning of the Greenway program. Most of these parklands are managed in a primitive state for their natural, scenic and primitive recreation values, and many have no upland access. A few larger parks were identified for regional park development associated with the Greenway.

In recent years OPRD has been acquiring a few very high quality natural and cultural areas for the purpose of protecting and restoring their resource values and providing appropriate levels of public access for recreation and interpretive purposes. Lands that were recently added to the Luckiamute Landing Greenway site were acquired primarily for this purpose.

River and Natural Area Recreation in the Sub-region

Luckiamute is a key part of a broader multi-agency strategy for protection and restoration of floodplain functions and habitat values in the mid-valley area. Several sizable natural areas are protected under public ownership in this part of the valley, and an assortment of projects are planned or underway for restoration of floodplain functions and habitat values within and surrounding the public lands. Notable natural areas include the Finley, Ankeny and Basket Slough National Wildlife Refuges administered by US Fish and Wildlife Service, the E.E.

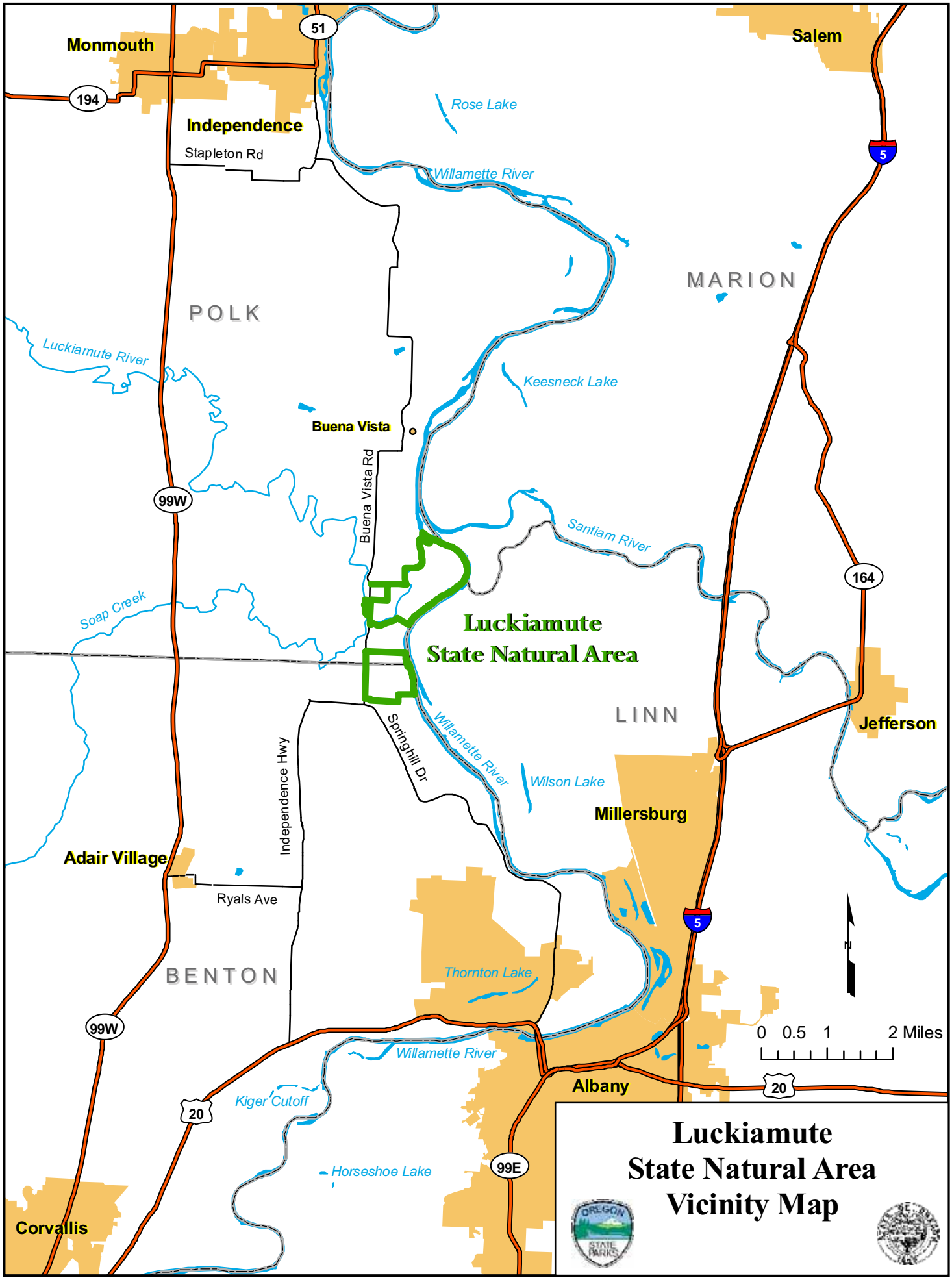
Wilson Wildlife Area administered by ODFW, and the Jackson-Frazier Wetland Preserve administered by Benton County.

Low-impact recreation activities that are compatible with the resource protection and restoration objectives of each natural area are provided at levels that preserve the quality of the natural area recreation experience while protecting the natural resources. Public education on natural resource values and sensitivity is a key component of the natural area recreation objectives. Hiking, nature observation and photography, wildlife-oriented education, and limited hunting and fishing are allowed at appropriate levels and supported by trails, interpretive kiosks, signs and related visitor facilities and services. Minto-Brown Island Park, administered by the City of Salem, is also notable for its natural area values in a more developed recreation setting.

The system of parklands along the Willamette River Greenway and its major tributaries provides the framework for public access to river-related recreation. The larger share of the Greenway parklands are part of the state park system, although a number are county or city-owned. The Division of State Lands also owns a number of riverfront properties. Some of the OPRD Greenway parks have public road access, while others offer boat-in access only. The Willamette River Water Trail Guide identifies these parklands by the features they offer for river boaters.

Downriver from Corvallis to Luckiamute, one OPRD Greenway park, Truax Island, has road access as well as boat access. Several other OPRD Greenway parks in this river reach are accessible by boat, including Half Moon Bend, Riverside Landing, Bowers Rock, and Black Dog Landing. Half Moon Bend and Riverside Landing are also designated for boat-in camping. Several riverfront parks in this reach are provided by the City of Albany and Benton County, some of which have boat ramps. Bowers Rock is one of OPRD's five regional parks in the Willamette Greenway system, but unlike the other four, this park has yet to be developed as such.

From Luckiamute downriver to Minto-Brown at the edge of Salem, road and boat access are provided at two OPRD Greenway parks, Halls Ferry and Sidney Access. Two other OPRD Greenway parks are accessible by boat in this reach, American Bottom and Independence Island. Sidney Access and American Bottom are also designated for boat-in camping. Polk County provides boat access and camping at Wells Island Park, and a boat ramp at Buena Vista Park. The City of Independence provides a boat ramp at Independence Riverview Park, and boat access only at Independence Bar Landing.


Monmouth
51
Salem
194
Independence
Stapleton Rd
Rose Lake
Willamette River
5
MARION
POLK
Luckiamute River
Keesneck Lake
Buena Vista
Buena Vista Rd
99W
Santiam River
164
Soap Creek
Luckiamute
State Natural Area
LINN
Jefferson
Springhill Dr
Willamette River
Wilson Lake
Millersburg
Independence Hwy
Adair Village
Ryals Ave
5
N
BENTON
Thornton Lake
99W
0 0.5 1 2 Miles
Willamette River
Albany
20
Kiger Cutoff
20
99E
Horseshoe Lake
Corvallis
Luckiamute
State Natural Area
Vicinity Map


Feet
0
900
1,800
2,700
3,600
N
S
Approximate Park Boundary
Note: This product was produced for conceptual planning purposes. It was not prepared for, and may not be suitable for, legal, engineering or surveying purposes. Users of this information should review the primary data sources to ascertain the usability of the information.
Santiam River
Luckiamute River
Linn County
Marion County
Willamette River
Buena Vista Road
Polk County
Benton County
Spring Hill Road
Study Area
Luckiamute River Confluence
OREGON STATE PARKS
November 2005

IV. EXISTING CONDITIONS

Park Size

Three recent land acquisitions have added significant acreage to the original Willamette Greenway park known as Luckiamute Landing. The park now consists of two tracts that are separated by private agricultural lands. The acreages in the two tracts are summarized below.

North Tract	
Original Luckiamute Landing	530.2
Former Baker property	84.76
South Tract	
Former Willamette Botanicals property	75.70
Former Vanderpool property	235.32
Total Acreage	925.98 acres

Landscape Character

The character of the park and its regional landscape setting reflect a long history of fluvial activity on the broad floodplain of the Willamette River system. A flat to undulating terrain of flood deposited silts, sands and gravels is marked by abandoned river channels, depressions, levees and ridges. Agricultural fields occupy about half of the park and most of the surrounding landscape. Mixed riparian forests are present on the seasonally wet bottomlands and along riverbanks and old river meander channels. Permanent or seasonal wetlands occur where the high groundwater intersects the bottomland channels and depressions. Higher floodplain terraces and ridges support a drier mix of forest types that include native oak and conifers.

While the frequency and extent of flooding has been greatly reduced since construction of the dams and reservoirs in the Willamette system, regular flooding is still common along this reach of the river. Seasonal flooding occurs over a large area of the park. Nearly the entire park is flooded in major flood events.

The Neighborhood

The majority of the lands surrounding the park are privately owned agricultural lands. Active farming occurs on most of these lands. State laws protect the rights of farmers to exercise standard farming practices, despite possible annoyances to other non-agricultural uses in the neighborhood. Park uses and other non-agricultural activities that are located near agricultural lands must operate without disruption of standard agricultural practices.

Zoning

The park and surrounding lands are zoned for agriculture. Traditional state park uses may be established in agricultural zones under state land use laws, although some park uses may only be allowed through a master planning process. (OAR 660-034-0035.) Land use regulations are administered by Polk and Benton Counties within their respective jurisdictions. The north tract of Luckiamute, and the former Willamette Botanicals property in the south tract, are in Polk County. The former Vanderpool property is in Benton County.

Existing Recreation Uses and Facilities

Most of the existing facilities in the park were developed for agri-business on the former Willamette Botanicals property, and the farm homesites on the former Baker and Vanderpool properties. The north tract has a gravel trailhead parking area. The trailhead access road is shared with an adjacent private property owner where it generally follows the park boundary. This road is partially paved, and includes a bridge that crosses a slough immediately east of Buena Vista Road. Luckiamute Landing has a long-established primitive boat-in camp. A trail extends from the north trailhead to the boat-in camp. A second, informal, parking area is located at the southwest corner of the park just off Buena Vista Road. A few old farm trails extend from the parking areas, homesites, and agri-business site to abandoned gravel pits and across open fields, old river channels and forested areas toward the Willamette River.

Recreational activities at the park currently include non-motorized trail uses, nature study and wildlife observation, hunting, fishing, and boat-in camping associated with the Willamette Water Trail. Paddling and motor boating also occur on the Luckiamute River. In addition, the park is located near the route of the newly opened Willamette Valley Scenic Bikeway.

Existing Ownership and Facilities

Luckiamute State Natural Area
North Tract - Section A

December 2006

0 125 250 500 750 1,000 Feet

N

S

Approximate Park Boundary

Roads & Trails

Note: This product was produced for conceptual planning purposes. It was not prepared for, and may not be suitable for, legal, engineering or surveying purposes. Users of this information should review the primary data sources to ascertain the usability of the information.

Santiam River

Boat-in Camp

Boat Landing

Buena Vista Road

Luckiamute River

Gate

ODFW Trailhead

Willamette River

Existing Ownership and Facilities

Luckiamute State Natural Area
North Tract - Section B

December 2006

Existing Ownership and Facilities

Luckiamute State Natural Area South Tract

December 2006

V. HERITAGE ASSESSMENT

This chapter provides a summary of key resource inventories and assessments that were used in completing the master plan. Detailed mapping of key resources contributed to the completion of the Composite Suitability Assessment, discussed in the Suitability Assessments chapter, and the guidelines for park resource management and restoration discussed in the Natural, Cultural and Scenic Resource Management chapter. Detailed maps and other background information on the park resources are filed at the OPRD headquarters office in Salem. The resource maps are also kept on file at the Willamette Mission State Park office in Gervais.

Floodplain Setting

The Luckiamute state park lands are situated at the confluence of three major watersheds and rivers: the Willamette, Luckiamute and Santiam. The park lands front about three miles of the Willamette River's west bank immediately upriver from the mouth of the Luckiamute River. The Luckiamute flows to the Willamette from the west, through about one mile of the park's north tract. The Santiam flows into the Willamette from the east, less than a quarter mile upriver from the Luckiamute-Willamette confluence.

A flat to undulating floodplain landscape composed of silts, sands and gravels characterizes the park and regional landscape setting. Levees, ridges, abandoned meander channels, and depressions reflect the long history of fluvial activity. These features are readily apparent where they dissect the open fields in the park's southern tract, and are largely hidden in the dense forested northern end of the park. In the northern tract, which includes roughly 70 percent of the park, the landscape ranges from about 155 to 175 feet elevation, except in one small corner of the park that rises steeply to about 250 feet from the west bank of the Luckiamute River. The southern tract is situated on a slightly higher floodplain surface which ranges from 170 to 185 feet elevation.

Nearly the entire park is in the 100-year floodplain as reported by FEMA. Construction of flood control projects in the Willamette River system has greatly reduced the extent and frequency of major floods that occurred historically. Still, annual flooding occurs over a large area of the park as a result of normal winter peak flows, and most of the park is flooded in major flood events. During normal high rainfall periods, the old meander channels and other depressions fill with water and sheet flooding occurs over much of the park. Surface water persists in several ponds, sloughs and emergent wetlands contained in the channels and depressions, including three abandoned gravel pit ponds that occur in the southern tract.

Historic land use practices on the floodplain (forest clearing, agriculture, gravel extraction, water impoundments, filling and draining of wetlands) have reduced wetland, riparian forest and prairie habitats to a fraction of their historic abundance in the region. The riparian forest that covers the northern end of the park between the Luckiamute and Willamette Rivers is regarded as an area representing the best remaining bottomland forest habitat in the Willamette Valley. Oak savannahs, which were abundant in the Willamette Valley at the time of early Euro-American settlement, are now rare in the valley and are non-existent in the park. Oak woodlands

remain on some of the higher ridges and terraces. Agricultural fields now cover roughly half of the park, some of which have been planted with native forest or grassland species. Although the park landscape has changed substantially as a result of human activities, an assortment of native fish, reptile, amphibian, bird and mammal species, some of which have become increasingly rare in the Willamette Valley, inhabit the park's natural and human-altered landscape. Conservation groups and natural resource scientists that are involved in Willamette floodplain restoration efforts regard this park, together with a larger reach of the mid-valley floodplain, as one of the high priority locations for restoration of natural floodplain functions.

Climate

The Willamette Valley is in the rain shadow of the Coast Range. Summers are typically dry and cool, with about 3 inches of precipitation. July's average temperature is about 66 degrees Fahrenheit, and 40 degrees Fahrenheit is the average for January. About 9 inches of rainfall occurs during the months of October and November, another 18 inches of rain, and small amounts of snow, fall between December and February, and about 8 inches of rainfall occurs in the months of March, April and May.

Plant Communities and Conditions

Inventory

The master planning process included a study conducted by the Oregon Natural Heritage Information Center (ONHIC) of the plant associations that occur in the park. Plant associations were mapped and described by their species composition and conditions. These maps, titled "Plant Communities and Conditions," and the companion report titled "Natural Resource Inventory for Natural Vegetation, At-Risk Species, and Other Fish and Wildlife Resources," are included with the background documentation for the master plan. Descriptions of the native plant associations identified in the ONHIC study are included in this master plan as Appendix A.

The ONHIC vegetation classification system was used as a basis for identifying, mapping, naming and describing the plant associations. The plant association names that were assigned to mapping units indicate the dominant tree, shrub and herbaceous species that characterize each association. Forested associations are also identified by their seral stage.

ONHIC assessed the current condition of each plant association, and assigned each mapped plant association polygon a numeric rating between 1 and 4 representing condition. The ratings represent the following conditions:

Condition 1: Pristine native plant community in excellent condition and uncommon in Oregon; and/or has a special protection designation.

Condition 2: Native plant community generally undisturbed by historic or current human activities, of good vigor and condition, and uncommon in Oregon.

Condition 3: Native plant community moderately disturbed by historic or current human activities or by intrusion by non-native species; or despite good condition, is so common in Oregon as to allow some loss to development. Includes dense, single species/age, young to moderately aged forest stands that are common in Oregon.

Condition 4: Generally disturbed by development or other human activities; or consists mostly of non-native species.

Native Plant Associations

Native riparian hardwood forests that occur naturally in the floodplain environment are present in a large patch in the northern part of the park between the Luckiamute and Willamette Rivers, and in smaller patches occurring along the riverbanks and between the agricultural fields along old meander channels, levees, hummocks and low ridges. Oregon ash, bigleaf maple and black cottonwood dominate the canopy of these forests. Stands on ridges and levees support a brushier mix of cottonwood, ash, bigleaf maple, and black hawthorn. The varied shrub layer commonly includes ninebark, hazel, thimbleberry, salmonberry, snowberry, vine maple, creek dogwood, and elderberry. When present, the herb layer is comprised of mostly native species such as Dewey sedge, trailing blackberry, camas, and stinging nettle. Gaps in the canopy and gravel bars along rivers may be dominated by Pacific willow and stinging nettle. Upland edges are dominated by dense belts of Himalayan blackberry.

The lower elevations of the riparian hardwood forest have a tree canopy of predominantly Oregon ash. The wettest sites are flooded seasonally and typically have little or no herb layer, or a sparse cover of slough sedge. Water marks on trees, silt deposits, drift lines of litter, and dried algal mats are evidence of flooding that commonly lasts into the growing season. Most of the surface water is gone by June. Slightly drier sites in the predominantly ash forest have occasional cottonwoods and crabapple. Stands on ridges and levees support a distinctly drier and brushier mix of ash and occasional white oak, grand fir, cascara, and cottonwood. The typically dense shrub layer includes ninebark, hazel, Nootka rose, wood rose, salmonberry, spiraea, snowberrry, vine maple, elderberry, oceanspray, and poison oak. When present, the herb layer contains mostly native species including impatiens, stinging nettle, Dewey sedge, trailing blackberry, camas, and starry false lily of the valley.

Oak woodlands occur on the higher ridges and terraces of the park's southern tract. In this forest type, Oregon white oak is more abundant than ash, and bigleaf maple and occasional Douglas fir are present. Cottonwood is generally absent. The shrub layer is usually dense and includes Himalayan blackberry, snowberry, hazel, wood rose, vine maple, elderberry, oceanspray, and poison oak. When present, the herb layer may contain Dewey sedge, trailing blackberry, camas, and starry false lily of the valley. The margins of these patches usually have a dense belt of Himalayan blackberry. Some stands have a sparse overstory, and the entire understory may be dominated by Himalayan blackberry. In the northern tract, a somewhat different oak association occurs on a steep slope the rises from the west bank of the Luckiamute River. Here, bigleaf maple and Douglas fir are more common among the white oak, with vine maple and hazel dominating the understory.

Shrub associations dominated by native willow species occur at the edge of the Willamette River and in seasonally-to-permanently flooded wetlands along old meander channels. Pacific willow and river willow occur on riverwash, gravel bars, and gravelly river bank soils. Associated species include peach-leaf willow, Sitka willow, and reed canarygrass. A number of other weedy herbaceous species indicate frequent disturbance during winter flooding. Shrub swamps dominated by hooker willow, Pacific willow and Sitka willow occur in the south tract along the bottom of a meander channel and in a small shallow pond. Unlike other marsh types, the water in this channel is cold, suggesting a deeper groundwater connection. This portion of the swamp is a dense willow stand with small open areas of water containing narrowleaf bur-reed, water hemlock, duckweed, common bladderwort, water purslane, and two-headed starwort.

High quality wetland associations of herbaceous and floating aquatic species occur in the meander channels and ponds in the south tract. A small Wapato marsh occurs in a slough near the southern border of the park. This marsh is dominated by Wapato with lesser amounts of mostly native aquatic and emergent species including narrowleaf bur-reed, inflated sedge, common bladderwort, and yellow pond lily. A smaller seasonally flooded Wapato marsh is found in the north tract in an agricultural field. Narrowleaf bur-reed marshes occur in sloughs in two old channels in the south tract, in warm water depressions and in the colder water of one channel. The species in these marshes include common spikerush, Wapato, inflated sedge, common bladderwort, and duckweed. A fairly large pond lily association occurs in one of the channels, and smaller example of this type, which was too small to map, occurs in the southern Wapato marsh. These are usually monotypic, but may include common spikerush, inflated sedge, common bladderwort, and duckweed.

Agricultural fields occupy roughly half of the park. Some of these are in agricultural production under lease agreements. Native habitat restoration projects are underway in some of the fields, with plantings of mixed riparian forest species in some areas, and native grassland species in other areas. Wet prairie restoration is underway at several smaller sites.

Wildlife

Wildlife habitat types in the park were identified based on the assessment of plant communities completed by the ONHIC. Habitat types reported by ONHIC are listed in Appendix A for each native plant community.

Habitat types that occur in the park are described in seven broad categories by Johnson and O'Neil in the reference titled "Wildlife-Habitat Relationships in Oregon and Washington." This reference lists the species of mammals, birds, reptiles and amphibians that are closely associated, generally associated, or commonly present in each type of habitat.

Appendix B lists the wildlife species that are closely associated with each of the seven habitat types is the park as reported by Johnson and O'Neil, which include the following types:

- Westside Oak Woodlands
- Westside Lowland Hardwood Forest

- Westside Grasslands
- Westside Riparian - Wetlands
- Herbaceous Wetlands
- Open Water Lakes, Rivers and Streams
- Agriculture, Pastures and Mixed Environs

At-Risk Species

"At-risk" species are species that meet one of the following criteria: 1) Currently listed as "threatened" or "endangered" under state or federal Endangered Species Acts (ESA); 2) Candidate for listing as "threatened" or "endangered" under state or federal ESA; 3) Not "threatened" or "endangered" or a candidate for such listing under state or federal ESA, but considered to be "at risk" as indicated by inclusion on a state or federal watch list.

Information on at-risk species occurrences was compiled, and mapped, from existing data sets provided by ONHIC and ODFW, supplemented by data from the "Birdnotes" database provided by a representative of birding and ornithological organizations. According to these datasets, the following at-risk species occur at or near the park:

At-Risk Species Occurrences In or Near the Park

Fish	**Occurrence**	**Status**
Upper Willamette Chinook salmon (Oncorhynchus tshawytscha)	Rivers and sloughs provide rearing and migratory habitat.	Federally listed "threatened"
Upper Willamette steelhead (Oncorhynchus mykiss):	Rivers and sloughs provide rearing and migratory habitat.	Federally listed "threatened." ODFW listed "critical."
Reptiles and Amphibians	**Occurrence**	**Status**
Western pond turtle (Clemmys marmorata)	40 to 70 individuals may inhabit the park's south tract.	Federally listed "species of concern". ODFW listed "critical".
Red-legged frog (Rana aurora):	Populations known to occur in the park.	Federally listed "species of concern". ODFW listed "vulnerable."
Birds	**Occurrence**	**Status**
Bald eagle (Haliaeetus leucocephalus)	Territory of a breeding pair abuts or includes the park.	ODFW listed "threatened". Recently removed from federal "threatened" list.
Willow flycatcher (Empidonax trailli):	Present during nesting season, observed in small numbers in the park.	Federally listed "species of concern." ODFW listed "undetermined status."
Yellow warbler (Dendroica petechia):	Observed in small numbers in the park.	Not "at-risk" but population declines have been documented.
Band-tailed pigeon (Columba faciata)	A small group observed in the park.	Federally listed "species of concern."
Purple martin (Progne subis)	Nests in the E.E. Wilson Wildlife Management Area.	Federally listed "species of concern." ODFW listed "critical".
Oregon vesper sparrow (Pooecetes gramineus affinis):	Small nesting population in the park in recent years.	Federally listed "species of concern." ODFW listed "critical".

Streaked horned lark (Eremophila alpestris strigata)	Nesting population of up to 20 pairs within 2 miles of the park.	Federally listed "candidate." ODFW listed "critical."
Common nighthawk (Chordeiles minor)	Several individuals observed foraging near the park.	ODFW listed "critical."
Trumpeter swan (Cygnus buccinator)	40 to 60 winter in the vicinity, including fields within 1 mile.	ONHIC list 2.
Short-eared owl (Asio flammeus):	Uses habitats within 1.5 miles of the park	Not "at-risk" but population declines have been documented.
White-breasted nuthatch (Sitta carolinensis):	Occurs regularly, probably nests in oak woodlands in the park.	Not "at-risk" but population declines have been documented.
Chipping sparrow (Spizella passerina)	Occurs in the park as a migrant. Apparently nests in small numbers within a few miles.	Not "at-risk" but population declines have been documented.
Western meadowlark (Sturnella neglecta):	Winters in sizable flocks in open areas of the park.	ODFW listed "critical."
Osprey (Pandion haliaetus)	Nests with young observed annually in the park.	Not "at-risk" but nests are sensitive to disturbance.
Peregrine falcon (Falco peregrinus anatum)	Occasional winter visitor to the park.	ODFW listed "endangered."
Yellow-breasted chat (Icteria virens)	Nests nearby.	Federally listed "species of concern. ODFW listed "critical."
Great blue heron (Ardea herodias):	Active rookery occurs in the park.	Not "at-risk," but rookeries are sensitive to disturbance.
Pileated woodpecker (Dryocopus pileatus)	Numerous sightings in the park.	Not "at-risk" but is sensitive to forest management activities that remove snags and downed timber.
Plants	**Occurrence**	**Status**
Meadow checker-mallow *(Sidalcea campestris)*	Two patches identified in open field next to county road.	ONHIC list 4.

Recreation Settings

OPRD has adopted methodology for assessing different types of recreational settings. Known originally as Recreation Opportunity Spectrum (ROS), the methodology was first developed by the US Forest Service and was later adapted by OPRD to address the somewhat different range of settings that are present outside of the federal lands in Oregon. The methodology is documented by OPRD in the Statewide Comprehensive Outdoor Recreation Plan (SCORP), 1994-1999.

In addition, OPRD has adopted a Waterways Trail Program with criteria set forth in the *Oregon Trails 2005-2014: A Statewide Action Plan* for establishing a system of waterway trails with provisions for public access and appropriate levels of development.

Using OPRD's adapted ROS methodology, in its current condition the park may best be described, although not perfectly, within the following range of ROS classifications:

Semi-Primitive Limited: Describes a setting that is a somewhat remote, unmodified, natural environment with limited trail and facility development, with an area less than 2500 acres, within an open space context. Social interaction is low. (Note: This setting may be applicable to the experience of paddlers at certain times along portions of the Water Trail.)

Roaded Natural: Describes a setting that is an "apparently unmodified natural environment, with road access through or adjacent and limited facility development, within an open space context. Social interaction is moderate."
Roaded Modified: Describes a setting that is a "forest or other natural environment with obvious modifications, road access and limited facility development, within an open space context. Social interaction is moderate."

Rural: Describes a setting that is a "substantially modified environment, usually agricultural, with road access and moderate facility development, within an open space context. Social interaction is moderate."

Scenic Resources

The scenic qualities of the park setting are important to the recreation experience of the visitors, from the perspectives of the rivers and the park lands. Several types of scenic views need consideration in designing visitor access:

- Boaters on the Willamette and Luckiamute Rivers enjoy the varied river bank character and natural vegetation scenery of the park landscape from the river perspective.
- In designing trails in the park, there are opportunities to provide views of the rivers, especially of the Willamette.
- The existing boat-in camp at Luckiamute Landing is situated where campers have a view of the interaction of the tributary mouth of the Santiam River and the opposite river shore vegetation, gravel bar and skyline.
- Open meadows in the park landscape offer expansive views and a varied vegetative character that contribute to the visual experience of the trail users.
- There may be an opportunity to provide a viewing site at a south trailhead with an open east-facing view across multiple habitat types, and interpretation of the floodplain complex.

Cultural Resources

Evidence of cultural resources has been found at a number of sites within and surrounding the park. Investigation reports for these sites are filed with the State Historic Preservation Office (SHPO). Staff worked with SHPO to identify sites where previous archeological investigations have been documented, and to review the related investigation reports. Pursuant to state law, this information is not available for public review.

OPRD will be required to follow a protocol determined by SHPO to conduct further investigations prior to implementation of ground disturbing activities associated with park development and management, and to protect any important archeological resources that may be present.

VI. RECREATION NEEDS AND OPPORTUNITIES

The master planning process included an assessment of recreation needs and opportunities related to the park setting. Needs and opportunities were assessed based on a review of the following information sources: 1) OPRD's 2004 Willamette River Recreational User Survey; 2) The 2003-07 Statewide Comprehensive Outdoor Recreation Plan (SCORP); 3) OPRD's Oregon Statewide Trail User and Non-motorized Boater Survey; 4) The Willamette River Water Trail Plan and Guide; 5) The Willamette Valley Scenic Bikeway Route; 6) OPRD's Regional Interpretive Plan. In addition, information gathered from the Luckiamute Master Planning Advisory Committee, OPRD field staff and the general public in the issue scoping process were factored into the needs and opportunities assessment.

The proposals in this master plan respond to identified recreation needs with recreation access facilities that are appropriate for the park setting. The Luckiamute setting was determined to be suitable for the following recreation uses: non-motorized trail development among existing and restored natural areas that include segments with views of the river; wildlife viewing opportunities; interpretation and education related to the protection and restoration floodplain resources; an accessible fishing access at an old gravel pit pond; continuation of the boat-in camp to support Water Trail use; and development of a paddlers' access on the Luckiamute River.

OPRD determined that decisions on whether to allow trail riding on horseback or bicycles should be made outside of the master planning process. The master plan does not provide for facilities that are specifically designed to support these uses. Aside from the decisions on support facilities, decisions on whether to allow horses or bicycles on trails are made under a separate set of administrative rules that pertain to recreational uses in the parks. Likewise, decisions related to hunting in the park are also not determined by the master plan. Decisions on hunting are made under a separate set of administrative rules that pertain to the various OPRD parklands along the Willamette River.

Willamette River Recreational User Survey

In the summer of 2004, OPRD contracted for a survey of the recreational use patterns and opinions of people who recreate at Willamette River parklands. Visitors at 13 public parks on the river between Portland and Eugene were surveyed over the course of the summer, first with an on-site survey instrument, followed by a more detailed mail-in survey of some of the on-site survey respondents. The following are excerpts from the survey analysis report that are relevant to the Luckiamute recreation setting.

Percent of Respondents Participating in Recreation Activities at Time of On-Site Survey
(Based on responses from 663 on-site survey respondents. Results are reported only for activities that are relevant to the Luckiamute recreation setting.)

Activity	% of Respondents
Scenic enjoyment	68.3%
Walking for pleasure and hiking	60.5%
Nature / wildlife observation	45.7%
Jogging, running or walking for exercise	32.6%
Bike riding	30.3%
Bird watching	28.7%
Exercising dog(s)	27.3%
Photography	13.3%
Fishing from shore or pier	13.0%
Kayaking	7.8%
Canoeing	7.5%
Environmental education	6.0%
Camping in unimproved area	5.4%
Rafting	5.0%
Boat-in camping	4.5%
Drift boating	1.7%

Frequency of Respondents' Participation in Activities at Willamette River Parks
(Based on responses from 219 mail-in survey respondents. Results are reported only for activities that are relevant to the Luckiamute recreation setting.)

Activity	Response: "participate often"	Response: "participate sometimes"
Scenic enjoyment	54.6%	32.1%
Enjoying peace and quiet	51.1%	33.8%
Walking for pleasure and hiking	46.1%	35.2%
Nature / wildlife observation	43.8%	29.7%
Jogging, running or walking for exercise	37.9%	28.8%
Bike riding	22.2%	33.8%
Bird watching	29.2%	25.6%
Exercising dog(s)	26.6%	15.1%
Photography	9.7%	33.2%
Fishing from shore or pier	10.6%	15.1%
Kayaking	7.4%	15.3%
Canoeing	6.5%	20.8%
Environmental education	6.0%	23.4%
Camping in unimproved area	4.1%	12.3%
Rafting	5.0%	16.1%
Boat-in camping	5.0%	10.6%
Drift boating	2.8%	11.6%
Hunting	*2.8%	*5.6%

* Indicates the numbers were derived from a sample that likely does not fairly represent the use.

Opinions on the Most Important Focus in Managing Public Lands on the Willamette
(Based on responses from 220 mail-in survey respondents.)

Management Focus	% of respondents
Conservation	27.3%
Recreation opportunities	4.1%
Other	2.7%
Natural scenery	2.3%
Protection from flooding	1.8%
Balance of all choices	61.8%

SCORP

The Statewide Comprehensive Outdoor Recreation Plan (SCORP), 2003-2007, provides statewide and regional information on recreation demand and participation trends for a wide range of outdoor recreation activities. SCORP data are reviewed together with other indicators of need for recreation access facilities. The Luckiamute parklands are in SCORP Regions 2 and 3, in Polk and Benton Counties. Region 2 encompasses Columbia, Washington, Yamhill, Polk, Marion, Clackamas, Multnomah and Hood River Counties. Region 3 encompasses Benton, Linn, and non-coastal Lane Counties. Recreation data for Region 3 were combined with Region 2 data in the SCORP.

The following are indicators of recreation demand and participation trends as reported in the SCORP for Regions 2 and 3, for activities that are associated with the park.

Recreation Demand

The 2003-07 SCORP includes estimates of annual recreation use, by activity, for each of the SCORP planning regions. The estimates were based on the Oregon Outdoor Recreation Survey conducted over a one-year period from February 2001 to January 2002 by Oregon State University's College of Forestry. Recreation participation estimates for individual activities were measured in "user occasions." A user occasion is defined as each time an individual participates in a single outdoor recreation activity. The table below shows 2002 annual participation estimates for SCORP Planning Region 2 and 3.

2002 Recreation Demand in Regions 2 and 3

Recreation Activity	Region 2 2002 User Occasions*	Region 3 2002 User Occasions	Totals
Bird watching	6,446,735	2,501,717	8,948,452
Nature/wildlife observation	6,200,029	2,373,483	8,573,512
Walking for pleasure (unsurfaced trails)	3,205,045	792,129	3,997,174
Outdoor photography	1,825,082	627,408	2,452,490
Day Hiking	1,281,218	742,397	2,023,615
Fishing – bank or shore	1,080,602	828,155	1,908,757
Running/walking for exercise (unsurfaced trails)	1,269,544	370,668	1,640,212
Tracking animal signs	815,595	468,838	1,284,433
Canoeing	324,244	72,997	397,241
Upland bird or small game hunting	229,803	65,510	295,313
Big game hunting	740,900	497,226	1,238,126
Big game hunting by bow	168,521	66,778	235,299
Waterfowl hunting	178,666	1,362	180,028
Fishing – dock or pier	60,211	91,141	151,352
Boat camping	33,308	1,156	34,464*

* Indicates the estimate was derived from unreliable sample size.

Recreation Trends

Another method of identifying recreation facility needs is to make comparisons of how recreation participation for a comparable set of activities changes over time. For the 2003-2007 SCORP analysis, 2002 recreation participation estimates from the Oregon Outdoor Recreation Survey were compared to the participation estimates from the 1986-1987 Pacific Northwest Outdoor Recreation Survey prepared for the 1988 to 1993 SCORP. Direct comparisons for the full range of activities reported in the SCORP were not possible due to differences in the ways the data were collected in these two surveys. However, direct comparisons were possible for the following activities that pertain to Luckiamute.

Changes in Recreation Participation in Regions 2 & 3 from 1987 to 2002
(For activities that pertain to Luckiamute)

Recreation Activity	2002 User Occasions	1987 User Occasions	% Change
Day Hiking	2,023,615	1,676,404	+21%
Non-motorized boating	735,104	736,905	-0.2%
Nature/Wildlife Observation	8,573,512	2,422,761	+254%
Big Game Hunting	486,937	1,238,126	+154%
Big Game Hunting by bow	235,299	81,966	+187%
Hunting waterfowl, upland birds, small game	475,541	494,200	-3.8%
Outdoor Photography	2,452,490	1,520,137	+61%
Boat Camping	34,464*	191,783	(-82%*)

* Indicates the estimate was derived from unreliable sample size.

Oregon Statewide Trail User and Non-motorized Boater Survey

The 2004 Oregon Statewide Trail User and Non-motorized Boater Survey was conducted over a 4-month period from January to April by the University of Oregon's Survey Research Laboratory. This survey was conducted in support of the Oregon Trails, 2005-2014, Statewide Action Plan. Its purpose was to assess the needs and opinions of Oregonians about trail opportunities and management, and the need for future investment in trail facilities and opportunities, and provide trail planners with statistically reliable information pertaining to local and regional trails planning. Among the key findings of this survey were the following, which pertain to the Luckiamute setting:

- Thirty three percent of Oregon households (approximately 438,500 households) had a person reporting non-motorized trail use during the year preceding the survey.
- Hiking and walking for pleasure were the most popular trail activities among the non-motorized trail users.
- Fourteen percent of Oregon households (approximately 185,200 households) had a person reporting non-motorized boating participation during the year preceding the survey.
- Among non-motorized boaters, canoeing was one of the three most popular activities, together with white water rafting and drift boating.
- Non-motorized boaters strongly support separating non-motorized watercraft from motorized watercraft use on water trails.

Willamette River Water Trail

The Willamette River Water Trail was created by a coalition of local agencies, governments and non-profit organizations, initially spearheaded by the Mid-Willamette Connections Group. This initial effort created a designated route from Buena Vista ferry to Wheatland ferry, which was dedicated by the Governor in 2005. In 2006 the southern section of the Water Trail was dedicated, extending the trail upriver to the dams on the Middle and Coast Forks of the Willamette. The published Water Trail Guide and Plan highlight the public lands and related facilities that support launching and landing of non-motorized craft and designated campsites along the river. The Water Trail Plan also includes information on recommended facility improvements. Advocates of the Water Trail, and the Governor's office, propose extending the Water Trail north to the Columbia River. Two key aspects of the Willamette Water Trail planning process are relevant to planning for Luckiamute:

- The Water Trail Plan and Guide identify the existing Luckiamute Landing as a key site for primitive camping along the Water Trail.
- One of the key issues identified in the Water Trail planning process was the lack of secure places for paddlers on multi-day river trips to leave vehicles overnight. OPRD's recent acquisition of the adjacent Baker property provided the opportunity to develop a place for river paddlers to park their vehicles and launch non-motorized craft on the Luckiamute River at a short distance from its confluence with the Willamette.

Willamette Valley Scenic Bikeway

Luckiamute is located along the route of the Willamette Valley Scenic Bikeway, designated in 2005. Its creation was sponsored by OPRD and Cycle Oregon with assistance from the Governor's Solution Team. This 130-mile route is Oregon's first designated scenic bikeway. It extends through a diverse agricultural region and showcases the sites where Oregon's history was made. The bikeway formalizes the idea of a designated route that uses existing roads to traverse the valley in the vicinity of the river. Many of the people bicycling on the scenic bikeway route would enjoy stopping for a visit at Luckiamute.

OPRD Regional Interpretive Plan

OPRD recently completed a statewide review of interpretive priorities on a regional basis. For each region, overarching or predominant interpretive themes were identified that would be the basis for interpretive planning. For the Willamette Valley region, the Willamette River and life along it was identified as a major interpretive theme. Key parks along the river were identified for future interpretive development. Luckiamute was identified as one of these key sites, along with Elijah Bristow/Dexter, Champoeg, and Bower Rock, with consideration also given to Molalla and a greenway site on Sauvie Island.

Key Needs and Opportunities Along the Willamette

The available information sources, including those discussed above, suggest that there is strong public support for the following along the Willamette River:

- More recreation sites and facilities in general.
- More nature and wildlife viewing opportunities.
- More land based trails, especially where they connect to parks and natural areas, provide access to views of the river, and access to the water.
- Completion of the Willamette River Water Trail, with enough adequately sited places to launch and land non-motorized craft, leave vehicles overnight, and camp along the river.
- More primitive camping opportunities along the river in general.
- Areas designated as "no-wake" zones to support quieter alternatives for paddlers.
- More interpretive sites, programs and infrastructure for interpretation of the Willamette River and its natural and cultural history.

VII. SUITABILITY ASSESSMENTS

Resource Inventories

OPRD prepares resource inventories and assessments as a basis for park development and resource management and restoration decisions. Key inventories and assessments are summarized in the "Heritage Assessment" chapter. Detailed mapping of key resources is completed as part of the inventory and assessment process. The resource maps and reports are not published in the master plan document. Rather, they are available for viewing at the OPRD headquarters office in Salem. The maps are also available for viewing at the Willamette Mission State Park office in Gervais.

The following resource inventories and assessments and related maps were completed for this master plan:

- Plant Communities and Conditions
- Habitat Types (based on plant associations)
- Pre-settlement Vegetation
- Surface Water Features
- FEMA flood mapping (used as a reference in original form, not mapped separately)
- Scenic Resources and Recreation Settings (not mapped)
- Cultural Resource Sites (this information is not available for public review)
- At-risk Species

Resource Suitability Assessments and Composite Suitability

OPRD rates the suitability of lands within the parks based on resource assessments listed above. Park resource areas are mapped and coded to represent their relative values for protection or development. "Composite Suitability" maps are produced that characterize park resource areas using multiple levels of suitability, or "suitability classes." Suitability Class 1 represents resource areas that are highly valued for resource protection and often have the greatest constraints to development. At the other end of the spectrum, Suitability Class 4 represents areas that have the lowest resource values in their current condition, and the least constraints to development. The "Composite Suitability" maps are included at the end of this chapter.

The resource assessments listed above are all considered in making master planning decisions. Some of these assessments are factored into the "Composite Suitability" maps, which are then compared to the remaining assessments in making master planning decisions. The resource assessments are discussed below in relation to the composite suitability mapping criteria.

Native Plant Community Conditions and Conservation Status

Plant communities in the park were mapped by ONHIC by species composition and conditions. A condition rating between 1 and 4 was assigned to each plant polygon to represent the relative condition of the native plant community using the criteria described in the "Heritage Assessment" chapter. In producing the Composite Suitability maps, the condition rating given to each plant community was considered together with the state and regional conservation status of the plant community to determine the appropriate composite suitability rating, as indicated in the table below. The statewide conservation status of most native plant communities is documented by the ONHIC. Regional conservation status is represented by identified "target habitats" for the Willamette Basin, as reported in various documents published by regional conservation groups including the Willamette Partnership (formerly Willamette Restoration Initiative), Biodiversity Partnership, and Defenders of Wildlife.

Pre-settlement Vegetation

Pre-settlement vegetation, mapped by ONHIC, was used as a reference in developing the natural resource management guidelines discussed and illustrated in Chapter XVI. This information was not factored into the Composite Suitability maps.

Habitat Types

Habitat types are represented by native plant communities in the resource assessment process. There are no modifications to the composite suitability ratings on the basis of habitat types.

Surface Water Features

Surface water features identified in the resource assessment process were assigned a composite suitability rating of "1", as indicated in the table below. These features include identified ponds, sloughs, and active river channels. Also included are wetland native plant communities identified by ONHIC. This rating of "1" cancels out any other ratings assigned on the basis of plant community condition and status where these features sometimes overlap.

FEMA Flood Mapping

Maps of flood-prone areas, published by FEMA, were compiled for consideration as part of the master planning decisions, and as a reference for applying local government floodplain regulations that rely on this information. The FEMA mapping was not factored into the Composite Suitability maps.

Scenic Resources and Recreation Settings

Scenic resources and recreation settings identified in the resource assessment process were also not factored into the Composite Suitability maps. Like the other assessments, this information is factored into the master planning decisions.

Cultural Resource Sites

Existing information on cultural resource sites, documented in SHPO files, was compiled and mapped. Under state law, this information is confidential, not intended for general public disclosure. As such, the information was not factored into the Composite Suitability maps. The status of these sites requires investigations prior to commencing with any activities that could potentially disturb artifacts that may be present. OPRD coordinates with SHPO in formulating park master plans and implementing planned park projects.

At-risk Species

Available information on at-risk plant and wildlife species that occur in and near the park was compiled in the resource assessment process. ("At-risk species" is defined in the Heritage Assessment chapter.) Some of the available information is spatially explicit and some is not. Where species occurrences were identified spatially, these sites were assigned a composite suitability rating of "1" as indicated in the table below. As new information becomes available, it will be used as appropriate to refine the concepts in the master plan, including any affected development or resource management or restoration concepts.

Composite Suitability Ratings

The table below summarizes the factors used to determine the suitability class of each park resource area as illustrated on the "Composite Suitability" maps.

FEATURE / CONDITION	**SUITABILITY RATING (*See note below)**
At-Risk Species Present	1
Water Features:	
Rivers, ponds, sloughs	1W
Gravel pit ponds	1G
Wetland native plant communities:	
- Excellent or good condition	1a
- Marginal or poor condition	1b
Native Plant Association State Conservation Rank:	
Imperiled or uncommon (state rank 1, 2 or 3):	
- Excellent condition	1
- Good condition	2
- Marginal or poor condition	3a
Secure (state rank 4 or 5) or unranked (*see note below):	
- Excellent or good condition	3a
- Marginal or poor condition	3b
Target Habitat Regionally:	
- Excellent or good condition	2
- Marginal or poor condition	3a
Non-Native Species Predominant	4
Developed or Recently Graded	4

Notes:

* For any native plant association that has not been assigned a state rank representing conservation status, OPRD will ask ONHIC staff or another qualified expert to recommend a rank consistent with the state ranking system using best professional judgment. Any plant association that remains unranked will be presumed "secure" under the state system, unless identified otherwise as a regional conservation target habitat.

* Suitability rating alpha codes: "W" represents water features. "G" represents gravel pit ponds. "a" represents a higher conservation priority than "b" within the same numeric suitability rating.

Composite Suitablility

Luckiamute State Natural Area
North Tract - Section A

June 2006

Feet
0 125 250 500 750 1,000

N
S

Approximate Park Boundary

Suitability Class

- Class 1
- Class 2
- Class 3
- Class 4

Note: This product was produced for conceptual planning purposes. It was not prepared for, and may not be suitable for, legal, engineering or surveying purposes. Users of this information should review the primary data sources to ascertain the usability of the information.

Santiam River

Luckiamute River

Willamette River

3a
1W
1b

Composite Suitability

Luckiamute State Natural Area North Tract - Section B

June 2006

Composite Suitability

Luckiamute State Natrual Area South Tract

November 2006

Buena Vista Road

Willamette River

Approximate Park Boundary

Suitability Class

- Class 1
- Class 2
- Class 3
- Class 4

Note: This product was produced for conceptual planning purposes. It was not prepared for, and may not be suitable for, legal, engineering or surveying purposes. Users of this information should review the primary data sources to ascertain the usability of the information.

Feet
0 125 250 500 750 1,000

N
S

3a
1W
3a
1b
1b
3a
1a
1b
1b
1W
1b
1
1G
3a
1b
1b
1a
1
1G
1W
1b
1a
3a
3a
1W
1b
3a

VIII. ISSUES

How Issues are Compiled and Addressed

The issues summarized in this chapter were compiled with input from an advisory committee, OPRD staff, affected agencies and interest groups, and members of the general public. The summary represents comments made at meetings with these groups and correspondence received during the written comment periods.

Issues that can be addressed in a master planning process are reflected in the master plan goals, development concepts and/or resource management guidelines. Not every issue identified in this chapter is determined to be appropriate as a master plan goal, development concept or management guideline, therefore, the reader should not assume that all of the issues are addressed as such. Issues that cannot reasonably be addressed in the master planning process are noted and passed on for consideration in other appropriate OPRD programs. Some issues are addressed through related follow-up work including needed studies, resource management and monitoring plans, field investigations, engineering designs, and work with agency partners.

Typical Issues Relevant To OPRD Master Plans

- Natural, cultural and scenic resource management
- Recreational uses and facilities
- Major partnership opportunities
- Property ownership or lease recommendations

Issues Generally Not Addressed In OPRD Master Plans

- Routine facility maintenance and rehabilitation
- Park fees and budgets
- Park staffing
- Park rule enforcement
- General park administration
- Project costs and funding
- Park naming

Summary of Issue Scoping Comments

The following is a summary of the issues and interests raised in the issue scoping process. The issues raised reflect the question or understanding of the commentor(s) and their perspectives.

No attempt is made to correct any factual errors. The issues help define what should be more fully addressed in the master plan.

Habitat Protection and Restoration Interests

- The park is a high priority site for restoration of floodplain functions and values, among the conservation priorities identified independently by a number of habitat conservation interests. Much of the park was acquired for the primary purpose of floodplain restoration.
- Most of the funding for purchase of the park's south tract was obtained through an OWEB grant. A conservation easement that covers this property generally limits the use of the property to habitat protection and restoration, and recreation uses that are compatible with these purposes.
- The park offers opportunities to enhance or restore a range of habitats of statewide and regional conservation concern including riparian forests, oak woodlands, oak savannah, prairie grasslands and wetlands.
- Several habitat restoration projects are underway in the park. Riparian forest restoration on a total of 76 acres has been funded by CREP grants administered by USDA. Restoration of 242 acres of native prairie, emergent wetland, backwater slough and riparian forest habitats has been funded by a NAWCA grant. ODFW has also contributed substantial resources to the implementation of this project.
- OPRD and ODFW are cooperating informally on restoration and management projects in the park. ODFW has purchased a 60-acre tract adjacent to the park for restoration purposes. The area of the park adjacent to the ODFW property is a priority site for restoration and management under a cooperative agreement. An MOU is needed to formalize management agreements and address long-term maintenance needs.
- With limited exceptions, OPRD and ODFW have had a reasonably high rate of success with restoration projects previously implemented at Luckiamute. Much has been learned about the need for adequate site preparation, weed removal and long-term maintenance which are critical to project success. OPRD and ODFW will manage restoration projects in an adaptive manner to respond to new information on pertinent methods and practices and lessons learned from on-site experience.
- A couple of people raised concerns about some agricultural fields being converted to riparian forests without due consideration of the need for open meadow habitats, especially with regard to ground nesting avian species that use these meadows. One of these commentors also asked if tree thinning that is needed for management of riparian forest plantings would be allowed under the terms of CREP grants used to fund certain projects. Thinning is not allowed under the grant terms, and would need to be permitted through an exception to the terms agreed upon by USDA. Otherwise thinning must wait until grant contracts expire in 2015.
- A few comments raised concerns about land management actions in the park being predetermined based on previously established restoration contracts and agreements that were not subjected to public scrutiny before they were implemented, prior to master planning the park. A few neighbors are concerned that the restoration proposals are too vague, and a

few are concerned that these projects, especially wetland restoration projects, could adversely affect neighboring properties. These projects are carefully planned in consultation with ecological restoration experts prior to implementation. Any projects that involve grading in the floodplain are subjected to required review under county floodplain development permitting processes.

- Control of invasive weeds is of paramount importance and should be at the forefront of natural resource management and restoration efforts in the park. Some control measures are underway in conjunction with habitat restoration efforts. Himalayan blackberry and reed canary grass are particularly problematic in both the north and south tracts. Some English ivy reportedly occurs in the park's south tract. Timing is critical for invasive weed removal and management. Comments pointed out that, if blackberry is removed from riverbanks, bank destabilization needs to be addressed. A couple of comments suggested that blackberry be retained along park boundaries in certain areas to help discourage trespass onto private lands. Comments suggested using volunteer groups to help with weed management. Some questioned whether CREP funds could be used for weed management & maintenance. A few adjacent landowners are reportedly interested in partnering with OPRD in a coordinated weed management effort. One person suggested conducting a yearly inventory to assess the spread of invasive weeds.
- A couple of people asked if OPRD is considering opening up old flood channels and re-establishing their connections to the river. There are no plans to do so.
- The Luckiamute River Watershed Council has expressed an interest in participating in habitat restoration & maintenance activities and partnering with OPRD using OWEB grant funding.
- Many comments, from individuals and natural resource interest groups, expressed support for the restoration proposals and previous restoration work in the park, and for establishing a state natural area and related public recreation access at Luckiamute. A few comments made specific references to historic changes in the flood regime and related biota, and the ecological benefits of taking steps to reverse some of these changes through restoration efforts.
- A few people submitted extensive comments on the measures that should be taken in planning, designing and implementing ecological restoration and management projects. Many of these recommendations represent measures that OPRD undertakes separately from the park master planning process, when more detailed natural resource management and restoration planning is underway.

At-Risk Species

- This park has one of the largest populations of western pond turtles found in the Willamette Valley. Protection and recovery of the turtle population has been a primary focus of habitat protection and restoration efforts in the park's south tract.
- Field studies have indicated that the east pond and its adjacent meadow in the park's south tract provide the best turtle habitat in the park. Wildlife biologists involved in turtle habitat protection and species recovery efforts have recommended that this area be protected from disturbance by keeping recreational uses including trails away from this site. Human

disturbance can disrupt breeding and nesting, affecting the success rate of new recruitment. Another wildlife biologist reported observing turtles at a different state park that have adapted to human presence. The east pond has no significant value for angling, which reduces the interest in public access at this pond.

- Field studies have indicated that turtles also use the west pond in the park's south tract, although the habitat value of this old deep gravel pit pond is much less significant than the east pond. Restoration efforts at this pond, involving placement of basking logs and better soil for nesting, may encourage more turtle use.
- A couple of comments questioned how pond turtles might be affected by the contract farming activities. One person questioned whether turtles would move between the ponds and the river if a protected habitat connection could be provided. This commenter suggested expanding the turtle habitat protection area and implementing various measures to discourage human encroachment.
- Red-legged frogs are also known to inhabit the park. Egg masses have been found at several sites in the park's south tract.
- A number of at-risk or sensitive bird species are known to inhabit the park or include it within their ranges. In addition to information provided in the report from ONHIC, a representative of birding and ornithologist organizations submitted comments. These comments include additional and more detailed information on bird species that use the park or other similar habitats in close proximity to the park. The comments recommend that a songbird nesting survey and assessment of suitable habitat for at-risk or sensitive bird species be conducted prior to finalizing plans for the park. This commenter pointed out the need to consider bird nesting periods and sites, when planning restoration and management projects, to prevent impacts on nesting species such the Oregon vesper sparrow.
- The comments received on bird species also included information on several native prairie plant species that occur near the boat landing. This information supplements the information provided in the ONHIC report on plant communities.
- One at-risk plant species was identified at two sites. Further investigation during the growing season of the extent of this species has been recommended.
- Some asked if at-risk species would be introduced into the park, raising concerns about potential affects on neighboring properties if such species spread outside of the park.

Recreational Access

- Comments suggested developing ADA fishing access at the west pond. This pond is relatively close to where a trailhead and vehicular parking would be developed. A question was raised regarding the acceptable distance by trail for meeting ADA requirements. The pond could possibly be stocked with fish, and some fish habitat improvements could be made, however, there are no plans to stock the pond. Periodic overflooding may bring in non-native fish species. A couple of comments suggested removing non-native species from the pond. Others questioned whether this would be effective, given that flooding occurs often. This pond is an old deep-water, steep sided gravel pit, which raises visitor safety concerns. It

was recommended that swimming be disallowed. A few neighbors are concerned that a fishing access might attract too much activity, and are opposed to this proposal. Others pointed out that the amount of fishing activity would depend on the amount of parking provided and the likelihood of catching fish, whether or not an accessible fishing platform is provided. Other comments that support of fishing advocate maximizing angling opportunities at ponds and along riverbanks, and providing a boat ramp to accommodate drift boats.

- One person reported seeing lichen, moss and liverwort plant communities in the shallow soils and rock outcrops near the west pond, and suggested that these may be important enough to survey and protect from recreational uses.
- Concerns were raised about possible impacts on turtles from recreational access at the west pond, questioning whether fishing access and turtle habitat restoration are compatible, and if the pond could be closed to fishing during the nesting season. Some suggested that the west pond should be allocated to recreational access and the east pond to turtle habitat. Others suggested that the west pond might offer opportunities for developing a wildlife (turtle) viewing and interpretive site to promote public education and awareness of the sensitivity of this species and recovery efforts. There is an opportunity to promote the Watchable Wildlife program using this site.
- The east pond was discussed at length regarding opportunities for public access and the potential for impacts on this valuable turtle habitat. Some suggested that a trail close to the pond and a wildlife viewing platform could be designed to prevent impacts on turtles, and pointed out that predation from wildlife is a much larger problem than human disturbance. Others advocate keeping this area completely free of trail development in order to provide the best protection for the turtles and avoid potential impacts. The Watchable Wildlife program could be promoted using this site as well.
- Recreation access facilities that accommodate children were suggested by some, including child-friendly sanitary facilities, paved loop trails, picnic tables and benches, water access close to parking where banks are gently sloping and currents are slow, and hiking trails that are interesting to children with features such as bridges and wooden walkways.
- Several comments questioned how upland access to the river would be provided. Trail development should take into account potential impacts to at-risk or sensitive species habitats and restoration areas. Providing loop trails with access to the river is a high priority, but should be compatible with resource management objectives for the park.
- One person suggested building a bridge (presumably a trail bridge) across the Luckiamute River in the park's north tract to provide direct access to park properties on each side of the river without the need for crossing along the county road.
- Some canoeing & kayaking occur on the Luckiamute River. A paddlers' access on the Luckiamute could also be used by paddlers embarking on river trips down the Willamette. One of the key issues identified in the Willamette Water Trail planning process is the lack of secure places for paddlers to access the river and leave vehicles overnight on multi-day river trips. Reasonably secure parking could be provided at a river access in the park. Paddlers strongly advocate providing river access, optimally at a site with secure parking, somewhere in the park.

- Five potential locations for a paddlers' access were discussed at length. All of the sites have advantages and disadvantages. Some are flooded frequently, and some of these are subject to high velocity flooding and related stability issues, especially sites close to the bridge. Relative visibility from the county road was raised as an issue affecting oversight and enforcement. One site is opposed by some because it would require a long access road through a currently irrigated field that is flooded often. The site that is least vulnerable to flooding is one of the sites that some neighbors are particularly opposed to, because they are concerned about potential trespass and related issues. Two of the sites would be located at or near irrigation diversions, one on OPRD land and the other on ODFW land. A couple of people commented that locating a river access at an irrigation diversion might somehow set an unwanted legal precedent. In later comments an additional alternative for paddlers was suggested, in the south tract of the park. This comment suggested providing parking for paddlers at the office facility.
- Some neighbors are opposed to OPRD providing paddling access to the Luckiamute anywhere in the park. In short, the concern is that paddlers will get out of the water on private lands, interfere with irrigation diversions, hunt from their boats next to private land, and cause related safety, liability, and security issues. A petition was submitted with numerous signatures, raising concerns regarding the perceived risks to irrigation rights and diversions and related impacts to agricultural uses. Some asked who would be liable if a paddler was injured on private land after entering the river from a formalized public river access. One person mentioned that the Luckiamute is a small river, unlike the Willamette, which increases the likelihood that paddlers may intrude on irrigation diversion sites. Some mentioned that seasonal low water makes paddling on the Luckiamute difficult.
- Some comments assert that the Luckiamute is a non-navigable river, therefore, it may not be legal to provide for public paddling access to this river. According to DSL, there has been no determination made for the Luckiamute regarding navigability. And, according to a State Attorney General opinion based on case law, non-navigability would not preclude the public from boating on the river.
- Suggestions were made for mitigating concerns regarding potential trespass by paddlers, such as installing signage orienting paddlers to public versus private lands and a user registration system at the paddling access, and offering to provide 'no trespassing' signage at key locations along riverbanks. A couple of comments raised concerns that such signage may have the reverse affect by attracting trespassers.
- Numerous comments were received in support of the paddlers' access proposal, pointing out its public recreation benefits and contribution to the Willamette Water Trail, low impacts on natural resources, and the stewardship values of paddling enthusiasts. Some pointed out that the banks of the Luckiamute are generally steep and often lined with blackberry, which discourages access to the abutting lands in most places. Others pointed out that paddlers are seeking the natural settings along the river, have no interest in exploring irrigation diversions, and tend to avoid such sites.
- A couple of people spoke in favor of leaving any fallen trees in the Luckiamute River to help preserve its habitat values and discourage motorized boating. A couple of comments suggested adding a boat ramp.

- Other comments were submitted on the design of the paddlers' access. Comments expressed support for OPRD's intent to avoid grading the riverbank for the river access trail, and asked what kind of trail surface would be installed. Surface material such as wood chips will likely be needed. One person asked whether overflow parking would be provided. The total parking capacity is specified in the master plan, and no overflow parking is proposed.
- Luckiamute landing, with its primitive boat-in camp, is an important site for Willamette River paddlers. This site is a designated camp along the Willamette Water Trail. Continuation of the Luckiamute camp is a high priority. Willamette Riverkeeper offered support for recruiting volunteers for maintenance of this and other Willamette Greenway boat-in sites and for boater education and awareness. One person recommended that appropriate steps be taken to prevent possible impacts on native prairie plant communities that are present at the boat-in campsite.
- Issues concerning the existing north trailhead are related mainly to the access road that is shared with a neighboring private landowner. The shared use of the road limits any opportunity to install a gate at the road entrance to regulate the hours of recreational access. This neighbor is opposed to installing a gate anywhere on the road within this owner's easement. The road is very close to the riverbank, and is vulnerable to riverbank erosion at one location in particular. Any work on the road or riverbank, or use of the road, must protect the easement rights of the neighboring landowners, including easements for road access and for irrigation from the Luckiamute River. The adjacent owner emphasized the need to review the property deeds and related easements to assure that the master plan does not contradict the terms of the easements. Staff reviewed the easements of record that were granted to the neighboring property and found no conflicts with the master plan.
- Some questioned whether equestrian trail riding would be allowed at least by neighbors. It was pointed out that recreational access in state parks is generally provided for the public at large. Equestrian access for the general public would require development of an adequate parking and staging area. Equestrian use is not encouraged in habitat restoration areas because it can exacerbate problems of weed introduction. Since this park has two disconnected tracts, this limits opportunities for providing enough contiguous area for equestrian trail riding. A couple of people suggested that the contiguous area now available is adequate for equestrian use, at least in the north tract. A number of comments advocated allowing equestrian trail riding and providing some parking for this use, and implementing measures to control the level of use and prevent impacts on important resources. Some say this activity would have fewer adverse impacts than hunting, which has historically been allowed. While some equestrian activity would probably not cause significant impacts, an increase in this use over time could potentially cause problems.
- Historically, shotgun and bow hunting have been allowed on the original Luckiamute Landing parcel. Some comments support hunting on both the north and south tracts of the park, some are opposed to hunting anywhere in the park, and some suggest continuing this use only on the original Luckiamute Landing Greenway parcel. Some believe that hunting is incompatible with the wildlife and habitat objectives for the park, although limited hunting is allowed in various wildlife refuges. A couple of comments suggested closing the park to hunting to allow wildlife to recover, then allowing some hunting with adequate restrictions, e.g., bird hunting only, in a sustainable manner. Some say that the wildlife has diminished in

this area in recent years. Other comments raised concerns about potential conflicts with other park uses and neighbors, and the need to address related safety issues. If hunting is to be continued, there is clearly a need for "no hunting" zones in key areas to address these concerns. In particular, 'no hunting' zones are recommended next to private lands, roadways, visitor parking areas, park residences and administration areas, and on the northwest side of the Luckiamute River. The need for posting hunting rules at key locations was mentioned repeatedly.

- Some are concerned that hunting rules are not adequately enforced. Some mentioned that hunting by boat access would be difficult to control. Poaching can be a problem, and high-powered rifles are sometimes used in violation of the hunting rules. Others raised concerns about the possible increase in hunting with public ownership of the property. Hunting season occurs during the fall and winter, the slow season for most other park uses, which reduces the chance of conflicts with other recreation activities. Some questioned how the park's day use hours would be enforced when hunting generally begins and ends outside of these hours. Littering by hunters was also mentioned as a problem. Other comments characterize the hunters as responsible and considerate recreationists. Requiring a special use permit to hunt was also suggested. One person pointed out that survey data on recreation uses recently collected at Willamette Greenway parks does not fairly represent the popularity of hunting because these data were gathered only during the summer from people engaged in summertime recreation activities.
- Biking (non-motorized) on park trails was also mentioned as a potential use. Comments in support of allowing biking assert that this is a low impact activity. One comment suggested that biking would be a determent relative to the natural area objectives. Others say this use can cause damage to natural resources as much as, or more than, equestrian use. Some suggested that, compared to equestrians, bikers are more likely to go off trail and less likely to practice good stewardship or contribute to trail upkeep. Others pointed out that, while this park is likely to attract trail riding, it is not likely to attract mountain biking enthusiasts because of the relatively flat terrain.
- Comments recommended that non-motorized trail uses should be favored over other, more intensive, recreation. Some comments recommend limiting trail development to avoid impacts on important habitat and keep visitor use to a minimum, while others advocate providing as many trails as possible, especially loop trails. One person suggested the possibility of providing a trail connection between the two tracts of the park with a trail along the county road right-of-way. This person raised various other questions regarding trail routes and their potential uses.
- The location of a new south trailhead was discussed at length. This trailhead would replace the existing informal parking area located at the far southwest corner of the park. Four different locations were evaluated. Initially, a site off the driveway to the administrative buildings was proposed because of the proximity to the future park office, the opportunity to consolidate accesses to the county road, and the open view across an expanse of the park, which would enhance the interpretive opportunity at this site. Concerns were raised about the perceived affects of the trailhead and related visitor activity on the closest neighbors. Subsequently three other sites were evaluated, all located along the county road south of the originally proposed site. One of these sites, determined to be a particularly viable alternative,

is the site of an overgrown Christmas tree plantation. This thicket of young conifers is in need of management, and had been proposed for compete removal. An opportunity exists to manipulate the forest for the benefit of meeting the trailhead site development objectives, including dense buffering where needed, shading, and thinning where desirable to open views for better oversight and for scenic enjoyment.

- Support facilities for recreational uses were also mentioned. Restrooms are needed at trailhead parking areas, the proposed paddlers' access, and the boat landing. One person suggested that servicing portable toilets at the boat landing by boat rather that by upland access might help avoid wildlife disturbance. Trail orientation signage is needed at trailheads and other key locations. A "pack it in, pack it out" ethic is encouraged.
- Some neighbors think that the level of park development proposed will significantly change the neighborhood character, and are a few are opposed to having a public park in this location at all. Comments were made about traffic generation, the potential for attracting undesirable activity, security issues, inadequate enforcement, annoyances to nearby residents, and impacts on safety, livability, adjacent property uses, property values and way of life. A few comments recommended limiting the numbers of parking spaces at trailheads, with numbers ranging from 5 to 10 at each trailhead. Some questioned the logic of increasing public recreation access to a park where wildlife and habitat protection and restoration are high priorities, suggesting that allowing more recreation activity will ultimately cause damage to the resources, contrary to resource protection and restoration objectives. Hunters pointed out that they prefer to limit the amount of access to keep the area more natural. OPRD's mission is to protect, and provide an appropriate level of public access to state park resources. This dual mission requires OPRD to establish an appropriate balance between resource protection and public access.
- OPRD has consulted with road engineers at both affected counties regarding traffic generation to and from the park facilities and the likelihood of having county road access permits approved. Both counties indicated that permit approvals should be no problem, given the low levels of traffic on the road under current conditions and with proposed park development. OPRD has calculated the numbers of vehicular trips that would be generated to and from the park on peak weekend days from visitor access sites, and on typical weekdays from the proposed park administrative facilities. These calculations indicate that traffic impacts would be very minor in relation to existing traffic on the county road.

Boating Issues on the Luckiamute River

Problems with motorized boat traffic on the Luckiamute River were mentioned. Comments mentioned that motor boating can contribute to bank erosion and disturb wildlife. Restrictions on motorized boating, or at least on boat speed, were suggested. Any boating restrictions would need to be implemented by the State Marine Board.

Existing Administrative Buildings

- Uses associated with park operations are planned for the former Willamette Botanicals processing facility and office. OPRD intends to establish a park operations administrative

office in the existing office building. The former processing facility is useful for maintenance and storage purposes related to park operations. Some neighbors raised concerns about the amount of traffic that would be generated by these facilities, believing that the impact would be greater than that of the former agricultural processing facilities. A few are opposed to OPRD's administrative facility proposal altogether, believing that this facility will significantly impact the neighborhood and local community. Some are not opposed to administrative facilities for this park only, but object to facilities that would serve other parks in the vicinity or region. A few questioned whether this proposed use is allowed in the agriculture zone. In establishing park administrative facilities, OPRD will not be increasing the capacities of these buildings beyond their original capacities associated with their former agriculture related use.

- Some people questioned whether inmates would be present the park, since OPRD's program for managing inmate work crews in state parks would be administered from this office. It was explained that inmate work crews go directly to and from the parks they are working at, and would not be based at Luckiamute. Additionally, these crews are under constant supervision by corrections officers.

Vanderpool House

Questions were raised about use of the former Vanderpool residence in the south tract. Some feel that it would be useful for park-related purposes, and that the house has local historic appeal even if it does not have significant historic value at state or national levels. This building would need to be repaired. Currently it's a liability, and OPRD had previously taken steps to remove it. Consideration has been given to establishing a caretaker or park staff residence using this house. However, a recent assessment of its condition indicated that rehab of the house is probably not feasible.

Baker House

The former Baker house is in good condition. Last year it was used to house a seasonal intern, and has been proposed as a park staff residence. Consideration has also been given to using this house in the future to support environmental learning field school activities in a partnership with local universities.

Maintenance, Management, Security and Enforcement

- Concerns were raised about OPRD's maintenance, management and enforcement capabilities, with limited staff resources, for management of the Water Trail sites and Willamette Greenway parcels in general. The need for more Greenway rangers was mentioned.
- One person suggested employing a full time game warden / biologist staff position at the park.
- Littering and garbage dumping were mentioned as problems, occurring mainly where there is road access. Littering has apparently not been a significant problem at the boat landing. Some comments pointed out that paddlers generally practice good stewardship.

- Vandalism has also occurred, mainly by road access, but this problem has apparently diminished. Providing more of an oversight and enforcement presence in the park will help deter illegal activity. Public education was also mentioned as a means of reducing vandalism and other illegal activity.
- Neighbors mentioned maintenance, security and enforcement as primary concerns in relation to proposed new visitor facilities, especially the south trailhead and paddlers' access. Police response is reportedly slow, from both county and state enforcement officers. Others reported that police response has improved recently. One comment suggesting installing camera surveillance at trailheads.
- It was pointed out that, by establishing more of a presence with a park office, staff residence, host sites and active management of public access facilities, problems with unlawful activities are expected to diminish.
- Dogs were also mentioned as a problem associated with visitor use. Park visitors sometimes mismanage their dogs, allowing them to run loose and bother other visitors, neighbors, and wildlife. Leash rules were recommended. One person suggested providing an off-leash dog area. Feral cats were mentioned as a threat to avian species.
- Trespass onto adjacent private lands, whether intentional or not, is viewed by neighbors as a significant problem. Some comments raised concerns about trail users potentially straying onto adjacent private lands. Others mentioned the potential for trespass by river paddlers. Comments stressed the need for adequate signage along trails, river banks and property boundaries to deter trespassers. A couple of neighbors are concerned that such signage might be misconstrued to represent precise boundaries between public and private lands. Good signage is needed at trailheads and river accesses for orientation, including information on the extent of the public ownership. Some suggested that signage is needed along both banks of the Luckiamute River. One comment suggested that the Water Trail Guide could help identify public and private lands. Another suggested soliciting help from the Luckiamute River Watershed Council in placing signage.
- Neighbors are concerned about hunting close to their lands, problems with enforcement of hunting rules, and trespass by hunters. If hunting is continued, "no hunting" zones are needed in key areas to help address these concerns.
- Neighbors generally prefer to have adequate buffers between their lands and recreational uses in general. Several comments recommended locating trails at adequate distances from private land boundaries, and possibly installing vegetated buffers at certain locations. Where the proposed trail system connects to ODFW land in the north tract, it follows an adjacent private land boundary for a distance. ODFW has offered to work with OPRD and this land owner on the trail location and any measures needed to prevent possible intrusions onto the private land.
- Several comments pointed out that some unauthorized use is difficult to control with people accessing the park by boat. For example, illegal hunting by boat on the Luckiamute is reportedly a problem.
- A couple of people mentioned that unauthorized motor vehicle use is occurring on the Luckiamute Landing parcel. Specific measures were recommended for confining vehicular

use to the access road and north trailhead parking, controlling the hours of use, and enforcing related rules.

- One comment suggested that neighbors could become involved in park management activities through formation of a 'friends group.'
- OPRD has offered to work with neighbors on a 'good neighbor' agreement that would provide a forum for on-going discussions with neighbors on park management and operations issues.

Cultural Resource Sites

Comments pointed out the likelihood of archeological sites in the park. Evidence of prehistoric occupation has been found at a number of sites in and around the park. Prior to ground disturbing activities, cultural resource site investigations and related protocol required by the State Historic Preservation Office (SHPO) will be necessary. Initial site visits involving SHPO indicated that, given the relatively minor intrusion that would occur with the park proposals, the projects could go forward with appropriate mitigation if archeological resources are discovered. Comments were received from a tribal representative requesting that OPRD assure that the tribes are involved in assessing cultural resources in the park.

Agricultural Leases

- Questions were raised about agricultural leases in the park, whether they will be continued or phased out. Some pointed out that management under lease agreements helps with land management, particularly weed control work and irrigation of native plants during the critical plant establishment periods and until projects for restoration of native habitats or other park uses can be implemented.
- Concerns were raised about the conversion of agricultural lands in the park to recreational uses and native habitat restoration projects, suggesting that taking farmland out of production has adverse affects on the local farming community. A petition with numerous signatures was submitted raising this issue. A couple of comments suggested that the areas previously farmed in the park are not practicable or profitable as such. It was also pointed out that agricultural lands in the Willamette Valley are abundant, while parklands occupy a comparatively tiny portion of the valley floor.
- A couple of comments suggested using the park to demonstrate how agriculture can coexist with public recreation and habitat restoration. One person's comments mentioned particular crops and agricultural practices that would be compatible with the needs of sensitive bird species that use the agricultural fields.
- Several comments suggested leasing a portion of the former Willamette Botanicals property for production of native plant stock to be used in habitat restoration projects in various state parks. At least one person mentioned that this could potentially become a broader cooperative effort among other agencies and organizations that use native plantings, including the Luckiamute River Watershed Council, county parks and public works departments, etc. The possibility of obtaining grant funding to help support this project was also mentioned.

- Any farming in the park needs to be compatible with habitat management and restoration objectives, and especially with the habitat needs of sensitive species that inhabit the park. Large areas of the park have been committed to habitat management and restoration under existing grant contracts, conservation easements and management agreements, and much of this work is already underway. Consideration is being given to possible strategies for integrating agriculture into parkland management in ways that would be compatible with habitat management and restoration objectives and existing contracts and agreements.

Fees and Funding

- A couple of people asked whether fees would be charged for park use. Fees are regarded by some as a means of controlling the level of use, helping to discourage unwanted use, as well as offsetting some of the management costs.
- A couple of people asked if funding was available for development of the proposed park projects, and where the funding comes from. It was explained that funding comes mainly from lottery dollars, and allocations to the parks are decided on a biennial basis.

Zoning

- A couple of comments questioned whether state park uses are allowed in agricultural zones, and if a zone change would be needed for the park. Under state and local land use laws, state park uses have been allowed in agricultural zones for many years. No zone changes are needed or proposed in either of the affected county jurisdictions that apply to the park properties.
- Questions were also asked about the county land use process required for various park proposals. It was explained that a conditional use permitting process (CUP) would be required for the larger development projects, and for use of the administrative facilities. A couple of comments asked how uses such as a park office and RV host sites could be allowed under agricultural zoning. It was explained that these and other park uses are allowed in agriculture zones through the CUP process combined with adoption of a park master plan.

Willamette River Parklands

- A couple of comments questioned whether OPRD's is allowed under the Willamette Greenway laws to acquire parklands along the river without a public process involving public review and comment, such as lands recently acquired at Luckiamute. The comments suggest that some believe OPRD's acquisition of parklands along the river constitutes expansion of the officially adopted Greenway boundary, which is not the case. The Greenway boundary is a regulatory boundary administered by local governments under Statewide Goal 15, in contrast to the Greenway parklands which are simply publicly owned (usually OPRD owned) properties acquired for their natural, cultural, scenic and recreational values. The state Greenway laws (statutes and Goal 15) gave OPRD broad authorities to acquire parklands along the river, both inside and outside of locally adopted Greenway boundaries without amending the boundaries.

- Similarly, some comments raised concerns about references in the Luckiamute draft master plan to a recently published report from the Willamette Greenway Parklands Strategy Task Force. This Task Force report contains recommendations to OPRD for future acquisition and management of Greenway parklands in a few key areas along the river. The comments indicate there is misunderstanding of the Task Force report's meaning, and of the implications of referencing the report in the master plan. Those commenting apparently believe the report is a strategy for expanding the officially adopted Greenway boundaries, despite numerous statements to the contrary in the report itself. Additionally, those commenting apparently believe that referencing the recommendations of the report in the master plan somehow give the report a legal standing that it does not now have. OPRD was asked to remove those references from the master plan. OPRD's authorities for Luckiamute, as well as for the larger Greenway parkland system, are not affected by including or not including references to the Task Force report. Therefore, OPRD agreed to remove the references to address the concerns.

Amendments to the Master Plan

One comment pointed out the need to review the master plan periodically to address changes in circumstances and assure that the plan goals are being met, and amend the master plan accordingly.

IX. GOALS AND STRATEGIES

This chapter establishes OPRD's goals and strategies for development and management of the park. The goals and strategies are based on consideration of the resource suitability assessments, recreation needs assessment, and evaluation of the issues identified in the master planning process and summarized in this master plan.

Goal: Protect, manage, enhance and restore as appropriate, the values and natural functions of the floodplain resources.

Important plant communities, wildlife habitats, wetlands, cultural resources and scenic views and settings will be protected, managed, enhanced and restored where appropriate.

1. Locate and design recreational uses and facilities to avoid significant impacts on important natural, cultural and scenic resources. The assessments of resource suitability prepared for this master plan will serve as a guide for the selection of sites and design standards. Development plans will be prepared that describe and illustrate the locations, sizes and types of proposed facilities and any related measures that are needed to protect, manage, enhance, restore, or mitigate impacts on, important resources.
2. Implement the guidelines for management of natural, cultural and scenic resources as described in this master plan in the chapter titled "Natural, Cultural and Scenic Resource Management." Formulate plans for management, enhancement, or restoration of natural resources in the park following these guidelines. The plans will incorporate and build on the information already compiled for this master plan and for existing management and restoration projects.
3. Pursue partnerships with interested agencies and organizations to design and implement projects in the park for restoration of habitats of state or regional conservation concern, including at-risk or sensitive species habitats, wetlands, riparian forests, oak woodlands, upland prairie, wet prairie, and oak savanna. Such projects will be selected on a priority basis considering project feasibility, potential for ecological benefit, partnership opportunities, available funding, and consistency with other park objectives. Continue supporting existing, viable restoration and enhancement projects in the park.
4. Luckiamute is a significant unit of the Willamette Greenway park system, and a priority site for restoration of important floodplain ecosystems. In partnership with interested agencies and organizations, manage the park as a model for cooperative ecological restoration projects, compatible recreation and related resource interpretation. Continue floodplain restoration work consistent with the North American Wetlands Conservation Act (NAWCA) grant agreement, Conservation Reserve Program (CREP) contract, Oregon Watershed Enhancement Board (OWEB) conservation easement, Division of State Lands (DSL) wetland restoration / enhancement permit, Benton County land use permit, and partnership agreements with ODFW.
5. Work with interested agencies and organizations to protect at-risk or sensitive species and their habitats, and identify opportunities to improve key habitats to assist with species

survival and recovery. Follow the recommendations of the Oregon Natural Heritage Information Center (ONHIC) report on plant communities, at-risk species and other wildlife resources at Luckiamute, and studies by Pacific Wildlife Research, ODFW, and Oregon State University on western pond turtles. Use information available from ONHIC, ODFW, USFW, and birding and ornithological organizations to develop a strategy for protecting and enhancing habitats that are critical to the survival of at-risk or sensitive birds.

6. Explore options and pursue partnerships for controlling invasive species and restoring problem areas to native habitat conditions. Such projects will be prioritized for implementation based on the relative threat, potential for ecological benefit, partnership opportunities and available funding.
7. In designing projects for habitat restoration or enhancement, sensitive species management or recovery, or invasive species management, OPRD and other contributing partners will carefully assess the potential for impacts on neighboring properties and take steps necessary to assure that adverse impacts will not result. In assessing the merits and feasibility of projects, including the potential for adverse impacts, OPRD and other partners will consult with recognized experts in interested agencies, non-profit organizations, local universities and private consulting firms as appropriate for each project and related fields of expertise.
8. Where feasible, continue using farm conservation leases as an interim management strategy on lands that were farmed historically where habitat restoration projects have not been implemented.
9. Explore the feasibility of integrating agriculture into habitat management activities in ways that helps meet the long term objectives for management and restoration of the park's floodplain resources.
10. Explore the feasibility of using farm conservation leases to produce native plant stock for habitat restoration projects.
11. Manage ecological resources in an adaptive manner as appropriate to meet the intent of this master plan.
12. Where feasible, use "sustainable development" methods and practices in the design, construction and maintenance of park uses and facilities.

Goal: Provide recreation opportunities and experiences that are appropriate for the park resources and recreation setting.

OPRD strives to provide a variety of recreation opportunities that are consistent with its mission and role as a recreation provider. Public access will be provided to recreational pursuits that are appropriate for the park setting and compatible with resource protection and restoration objectives. Development of recreational access facilities will be guided by indicators of need, the recreation setting and resource suitability of the park, and the capacity of the park to accommodate visitor use without overcrowding, degradation of recreation experience, impacts on important resources or conflicts with neighboring uses.

1. Continue to provide a boat landing and primitive camp at the site known as "Luckiamute Landing" on the Willamette River to support use of the Willamette River Water Trail.
2. Develop a paddlers' access with a small parking area at a suitable site along the Luckiamute River. Explore ways to provide secure overnight parking to support multi-day paddling trips on the Willamette Water Trail. Consider allowing overnight parking for paddlers at the proposed park staff or caretaker residence (Baker house).
3. Develop a park trail system for non-motorized trail uses that includes loop trails and trailhead facilities in both the northern and southern parts of the park.
4. Explore the merits of providing fishing access that accommodates disabled anglers at the west pond.
5. Trails in the south tract will be routed to avoid the east pond, for the protection of at-risk species habitat. Future trail access to the east pond will only be provided with the agreement of ODFW, if supported by the results of monitoring of western pond turtle populations, and for the purpose of providing a wildlife viewing / educational site without wildlife or habitat disturbance.
6. Promote "pack it in, pack it out" recreational use ethics through the use of park signage at key locations.
7. Work with the Marine Board and support the implementation of 'no wake' restrictions on the Luckiamute River.

Goal: Provide for adequate management, maintenance, rehabilitation, and park operations.

Recreational activities and facilities will be managed, maintained, rehabilitated and operated as needed for the safety, satisfaction and enjoyment of the visitors and local citizens.

1. In allocating state park operational and facility investment funds, provide adequate support for the maintenance and rehabilitation of existing buildings, roads, trails and utilities, and recreation areas and facilities, and provide an adequate level of oversight and enforcement in the park.
2. Install signage at trailheads and river access sites in the park that informs visitors about park rules and orients them to public versus private lands.
3. Offer to work with any interested neighboring landowners on measures that help prevent conflicts between park uses and neighboring land uses. Such measures may include installing 'private property - no trespassing' signage at key sites where park boundaries abut private lands; or providing vegetated buffers where needed.
4. Consider implementing a user registration system at river access sites and trailheads.
5. Enter into agreements with local fire protection service providers for structural and wildland fire protection. Work with Oregon State Police and county law enforcement agencies to formulate or update agreements as needed for the provision of law enforcement services.

6. Establish fire prevention measures and install related park rule signage at the water trail camp and other key locations.
7. Establish an OPRD administrative facility, using the existing office building and former agricultural processing building in the park's south tract, to support park administration, management and maintenance activities including visitor supervision and natural resource restoration, research and monitoring on OPRD property.
8. Provide at least two host sites and related facilities for volunteer park hosts to support park visitor services and oversight and light maintenance activities.
9. Maintain the existing dwelling on the former Baker property. Use the house as a park staff or caretaker residence.

Goal: Provide for safe, efficient, identifiable and pleasant access and circulation.

The development of recreation facilities will include a system of vehicular and trail circulation and access that is safe, efficient, identifiable and pleasant to the visitors.

1. Explore ways to enhance the visual appearance and identity of the park at the park entrances using appropriate signage and native vegetation.
2. Install directional signage where needed to direct vehicular traffic to recreational use areas and facilities within the park.
3. Plant native vegetation where needed to beautify roads and parking areas and provide visual buffers within the park.
4. Install trail signage at trailheads and other key locations to provide orientation and information on visitor safety, park rules, firearm and open fire restrictions, trail routes, and other park information.
5. Install water trail signage, identifying the water trail, boat landing and primitive camp, along the riverbank and at highway access routes.

Goal: Promote public awareness, understanding, appreciation, and enjoyment of the recreation setting through resource interpretation.

The public awareness, understanding, appreciation and enjoyment of the natural and cultural landscapes will be promoted through the provision of interpretive signs, materials and seasonal programs.

1. Develop an interpretive plan for the park, consistent with OPRD's Regional Interpretive Framework that includes interpretive themes and recommended interpretive sites, materials and services.

2. Incorporate interpretive signage into the park's trail system to interpret natural and cultural landscape features and restoration projects at key locations.
3. Explore the merits of developing an environmental education program in cooperation with interested groups such as local universities and Willamette Riverkeeper, using the park as a study area.

Goal: Form partnerships and agreements to aid in achieving goals.

The preceding goals refer to projects that may require agreements with other agencies, interest groups or neighbors for implementation. OPRD will work with interested parties to formulate or update agreements as appropriate for park development, management and restoration projects.

1. Work with ODFW, the Luckiamute River Watershed Council, the Willamette Partnership, Willamette Riverkeeper, USDA's Conservation Reserve Program and other interested groups on feasible projects for the restoration and management of floodplain ecosystem resources and habitats of conservation concern.
2. Work with landowners who are interested in contributing to the implementation of park master plan goals, objectives or strategies through cooperative management activities, conservation easements, or sale of properties. Cooperate with interested neighboring landowners on projects and agreements for protection, management and restoration of floodplain resources.
3. Work with neighboring landowners, the Luckiamute Watershed Council, and affected land management agencies on measures to control invasive species.
4. Consider continuation of farm conservation lease agreements if warranted for the mutual benefits of parkland management and local farming activity. Any farming in the park must be compatible with previously established habitat management and restoration contracts and agreements, and with long term objectives for management and restoration of the park's floodplain resources. Agricultural practices used in the park must avoid impacts on sensitive wildlife species and their habitats.
5. Explore the feasibility of using farm conservation lease agreements for the production of native plant stock for restoration projects.
6. Work with Willamette Riverkeeper, Willamette River Navigator and other interested agencies and organizations to support the development, use and management of the Willamette River Water Trail.
7. Work with interested neighbors to formulate a "good neighbor agreement" that establishes ongoing communication between OPRD field managers and neighbors to address neighborhood concerns regarding park operations and management.
8. Cooperate with environmental organizations and local universities who are interested in using the park as a study area for environmental learning.

X. DEVELOPMENT CONCEPTS

This chapter describes and illustrates the master plan proposals for development of park facilities.

Conceptual Designs for Park Development Projects

State park master plans include text and illustrations that describe appropriate locations, layouts, sizes, and types of proposed recreation facilities. The locations and layouts of development projects are illustrated conceptually. Reasonable flexibility to make changes in the locations and layouts of development project components when completing final designs is expected, provided that such changes do not involve relocation of projects to totally different areas of the park, or to sites where significant impacts on important natural, cultural or scenic resources, other recreation uses or neighboring lands uses may result. Preliminary and final project designs will be reviewed in cooperation with the local land use approval authority as needed to ensure compliance with the intent of the master plan.

OPRD is dedicated to proposing facilities that are needed to support outdoor recreation, and that are appropriate for the setting and OPRD's roles as a recreation provider. Proposed park facilities are selected, located and designed to avoid causing significant impacts on important resources, as identified in the resource suitability assessments prepared for the master plan. The proposed facilities are also selected, located, and designed to avoid causing significant conflicts between incompatible recreation uses or impacts on surrounding land uses.

General Parameters for Design

General parameters that are considered in formulating development concepts in state park master plans include the following:

- Balancing recreation needs and avoiding or minimizing conflicts between recreation uses;
- Providing good access and circulation for vehicles and non-motorized travel within the parks;
- Locating and designing facilities, roads and trails in a manner that is understandable by the public in navigating through the parks;
- Avoiding significant impacts on important natural, cultural and scenic resources within or adjacent to the parks;
- Taking advantage of scenic views and resource interpretation opportunities;
- Presenting an appearance that is harmonious with the setting and the region;
- Providing choices for visitors who may have different desires for recreation amenities and settings;
- Clustering development to keep most of the park lands undeveloped;

- Avoiding or mitigating conflicts with neighboring land uses;
- Achieving compliance with regulatory requirements including the state land use goals, local comprehensive plans, building codes, resource laws, etc.;
- Providing opportunities for access by visitors with disabilities and different economic and cultural backgrounds.

DEVELOPMENT PROJECTS

WILLAMETTE WATER TRAIL CAMP		
Project Description	**Development Standards**	**Reviews & Approvals Needed**
• Retain the primitive boat-in camp at Luckiamute Landing. • Relocate the boat landing site slightly upriver from the existing location for safer boating access. • Provide upland access by trail only. Allow vehicular access for maintenance, oversight and emergencies, or by special permit.	• Provide designated campsites with fire rings. • Conduct a survey of the primitive camp area to identify any sensitive native plants that may need protection from recreational use impacts. Implement appropriate protective measures.	• Explore possible Polk County requirements. • SHPO requirements.
• Install portable toilets during the season of use.	• Locate portable toilets to minimize visual impact from the river perspective. • Locate portable toilets adequate distance from tent sites to abate odors. A minimum distance of 50 yards is recommended.	• Explore possible Polk County requirements. • SHPO requirements.
• Install appropriate park rule signage. • Install water trail signage at key locations along the riverbank.	• Signage will include rules pertaining to campfires, wildland fire prevention, and "pack it in, pack it out" ethic.	• Explore possible Polk County requirements. • SHPO requirements.

BAKER HOUSE		
Project Description	**Development Standards**	**Reviews & Approvals Needed**
• Maintain the dwelling on the former Baker property for use as a park staff or caretaker residence. • Provide a place along the driveway to the residence for paddlers on multi-day river trips to park overnight, for added security.	• The site will be managed to allow natural floodplain activity, without changes that would alter the flow of floodwaters. The driveway and parking surfaces will remain unpaved for optimum permeability. • Provide up to 4 car parking spaces for overnight paddlers.	• SHPO requirements.

LUCKIAMUTE RIVER PADDLERS' ACCESS		
Project Description	**Development Standards**	**Reviews & Approvals Needed**
• Develop a paddlers' access along the east bank of the Luckiamute River with parking and an access road from Buena Vista Road, located	• The access road and parking will be located on the upper floodplain terrace. • The access road will connect with Buena Vista Road	• Polk County site development and use and road access requirements.

west of Buena Vista Road and west of the Baker house. • Install a gate on the access road where it connects with Buena Vista Road. • Install rock or post barriers around the parking area and along the road as needed to discourage off-road vehicle use and unauthorized parking. • Develop a primitive trail from the parking area to the river in a location where no riverbank grading is needed. • If needed, install a small removable boating structure to facilitate canoeing and kayaking, such as a floating dock.	directly across from the Baker house driveway. • Provide up to 6 car parking spaces for paddlers. • The access road and parking surfaces will be unpaved, designed for optimum permeability, and designed to prevent channeling of floodwaters, allowing floodwaters to flow freely over the road and parking surfaces. • The river access trail must not interfere with any water rights or diversions that may be present at the site. • Boating structure max. size 50 square feet. • Remove boating structure during rainy season.	• SHPO requirements. • DSL/ACOE approval for removable boating structure.
• Install a vault toilet or portable toilet.	• Locate vault or portable toilet to minimize visual impact from the river perspective.	• Explore possible Polk County requirements. • SHPO requirements.
• Install a user registration drop box at the parking area to monitor the visitors.		• SHPO requirements.
• Install park rule and orientation signage at the parking area.	• Signage will address park rules, orientation to public versus private lands and potential consequences associated with trespass, and pack in/pack out ethic.	• SHPO requirements.

NORTH TRAIL SYSTEM		
Project Description	**Development Standards**	**Reviews & Approvals Needed**
• Retain, and rehab as needed, the existing access road to the north trailhead. Explore options for stabilizing the riverbank as needed to protect the road. • Redesign the existing trailhead for more efficient and slightly expanded parking area. • Install rock or post barriers around the parking area and along the road as needed to discourage off-road vehicle use and unauthorized parking. • Retain the gate that precludes vehicular access beyond the trailhead parking.	• Any work on the trailhead access road or adjacent riverbank must honor the easement rights of neighboring private property owners, including easements for road access and irrigation from the Luckiamute River, and be designed and implemented in a way that does not adversely affect adjacent properties. • Provide up to 10 car parking spaces at the trailhead. • The parking surface will be unpaved, designed for optimum permeability, and designed to prevent channeling of floodwaters, allowing floodwaters to flow freely over the surface.	• Work with affected neighboring property owners on any rehab of the access road or adjacent riverbank. • Explore possible Polk County requirements. • SHPO requirements.

• Install a vault toilet or portable toilet at the trailhead.		• Polk County requirements. • SHPO requirements.
• Install park rule and orientation signage at the trailhead.	• Signage will address park rules, orientation to the trail system and public versus private lands, and pack in/pack out ethic.	• SHPO requirements.
• Retain the non-motorized trail from the trailhead to the boat-in camp. • Expand the trail to include a riverfront loop that connects with the existing trail at the trailhead at one end, and near the north end of the meadow at the other end.	• This trail will be located at least 300 feet from the adjacent private land to the south.	• SHPO requirements. • Explore possible Polk County requirements.
• Develop a non-motorized loop trail on the former Baker property. Work with ODFW on a trail connection to the ODFW restoration site.	• Locate the trail at least 300 feet from the adjacent private property to the north.	• Explore possible Polk County requirements. • SHPO requirements.

PARK ADMINISTRATION FACILITIES		
Project Description	**Development Standards**	**Reviews & Approvals Needed**
• Establish an OPRD administrative facility to support park administration, management and maintenance activities, including visitor supervision and natural resource restoration, research and monitoring on OPRD property, using the existing office building and former agricultural processing building on the former Willamette Botanicals property. • Install landscaping at the driveway entrance to enhance visual appearance and help buffer the road from the neighboring property across the county road.	• Provide office space, or work stations, and parking for up to 6 year-round staff and 2 seasonal staff. • The road and parking surfaces will remain unpaved for optimum permeability. • Install landscaping of native trees and shrubs at the driveway entrance.	• Polk County requirements. • SHPO requirements.
• Retain, and slightly relocate if needed, the host RV site at the administrative facility site. • A 2nd host site may be developed at this location in place of a host site at the Vanderpool site, if the Vanderpool house is used as a caretaker or park staff residence.	• Provide full service hook-ups. • Locate and buffer the host site to minimize visual impacts from the office and the county road.	• Polk County requirements. • SHPO requirements.

VANDERPOOL HOME SITE		
Project Description	**Development Standards**	**Reviews & Approvals Needed**
• Develop a host RV site at the Vanderpool home site.	• Provide full service hook-ups. • Locate and buffer the host site to minimize visual impact from the road. • Preserve fruit trees and large Douglas fir trees next to the road.	• Benton County requirements. • SHPO requirements.

SOUTH TRAIL SYSTEM		
Project Description	**Development Standards**	**Reviews & Approvals Needed**
• Develop a new trailhead and parking area south of the Vanderpool home site, at the location of the overgrown Xmas tree plantation. • Install a gate on the trailhead access road. • Install rock or post barriers to prevent off-road vehicle access and unauthorized parking. • Close the existing informal trailhead parking area at the southwest corner of the park	• Parking lot development will be phased. The initial phase will provide up to 10 car parking spaces plus 1 long space for a school bus at the trailhead. Up to 10 additional car spaces will be added only if needed based on usage. • The parking will include accessible spaces to meet ADA standards. • The road and parking surfaces will be unpaved, designed for optimal permeability. • The plantation forest will be manipulated to support site development objectives. Retain dense forest cover south of the parking area, to screen the parking from the south, thinning only as needed for forest health and safety. North of the parking area, remove most or all of the conifers to provide an open view of the parking area from the proposed host site at the Vanderpool home site. Between the parking and the road, thin the conifers to make the parking area visible from the road, but retain some trees for shading and to enhance the visual appearance from the road.	• Benton County site development and use and road access requirements. • SHPO requirements.
• Install an interpretive panel or kiosk overlooking the park from the trailhead.	• Looking east from the trailhead and interpretive site, thin the forest as needed to provide a view across the park landscape.	• Explore possible Benton County requirements. • SHPO requirements.
• Install park rule and orientation signage at the trailhead.	• Signage will address park rules, orientation to the trail system and public versus private lands, and pack in/pack out ethic.	• SHPO requirements.

• Install a vault toilet at the trailhead.	• Buffer the vault toilet from view from the road. Provide an open view of the vault toilet from the host site located at the Vanderpool home site.	• Explore possible Benton County requirements. • SHPO requirements.
• Develop a non-motorized loop trail that includes segments along the river. • • Work with interested adjacent landowners on measures that discourage trespass onto private lands, such as installing signage, vegetation or other barriers at key sites, for example, where trails cross open fields that extend to private lands.	• Locate trails at least 300' from private lands to the north and south. • Install signage at key sites directing visitors to stay on the trails. • The loop trail design will avoid impacts on identified sensitive wildlife habitat, in particular, turtle habitat associated with the east pond.	• Explore possible Benton County requirements. • SHPO requirements

WEST POND ACCESS		
Project Description	**Development Standards**	**Reviews & Approvals Needed**
• Develop an accessible trail from the south trailhead to the west pond.	• This trail will not be paved, although surfacing and other aspects of the trail will meet ADA standards. • Provide access to the pond only on designated trails. Locate the trail to avoid impacts on sensitive habitat. Route the trail along the west and south sides of the pond. • Post for 'no swimming' with illustrated sign warning of deep water conditions.	• Explore possible Benton County requirements. • SHPO requirements.
• Develop an accessible wildlife viewing platform and interpretive site overlooking the west pond.	• Design to meet ADA standards.	• Explore possible Benton County requirements. • SHPO requirements.
• Consider developing an accessible fishing platform at the west pond.	• Conduct a fish survey at the pond in cooperation with ODFW to help assess the merits of this project. • Design to meet ADA standards.	• Explore possible Benton County requirements. • SHPO requirements. • Explore possible DSL & ACOE requirements.

LUCKIAMUTE LANDING WATER TRAIL CAMP

LUCKIAMUTE STATE NATURAL AREA

T9S R4W

Santiam River

Luckiamute River

Boat Landing
Relocated

Boat-in Camp
Existing

Willamette River

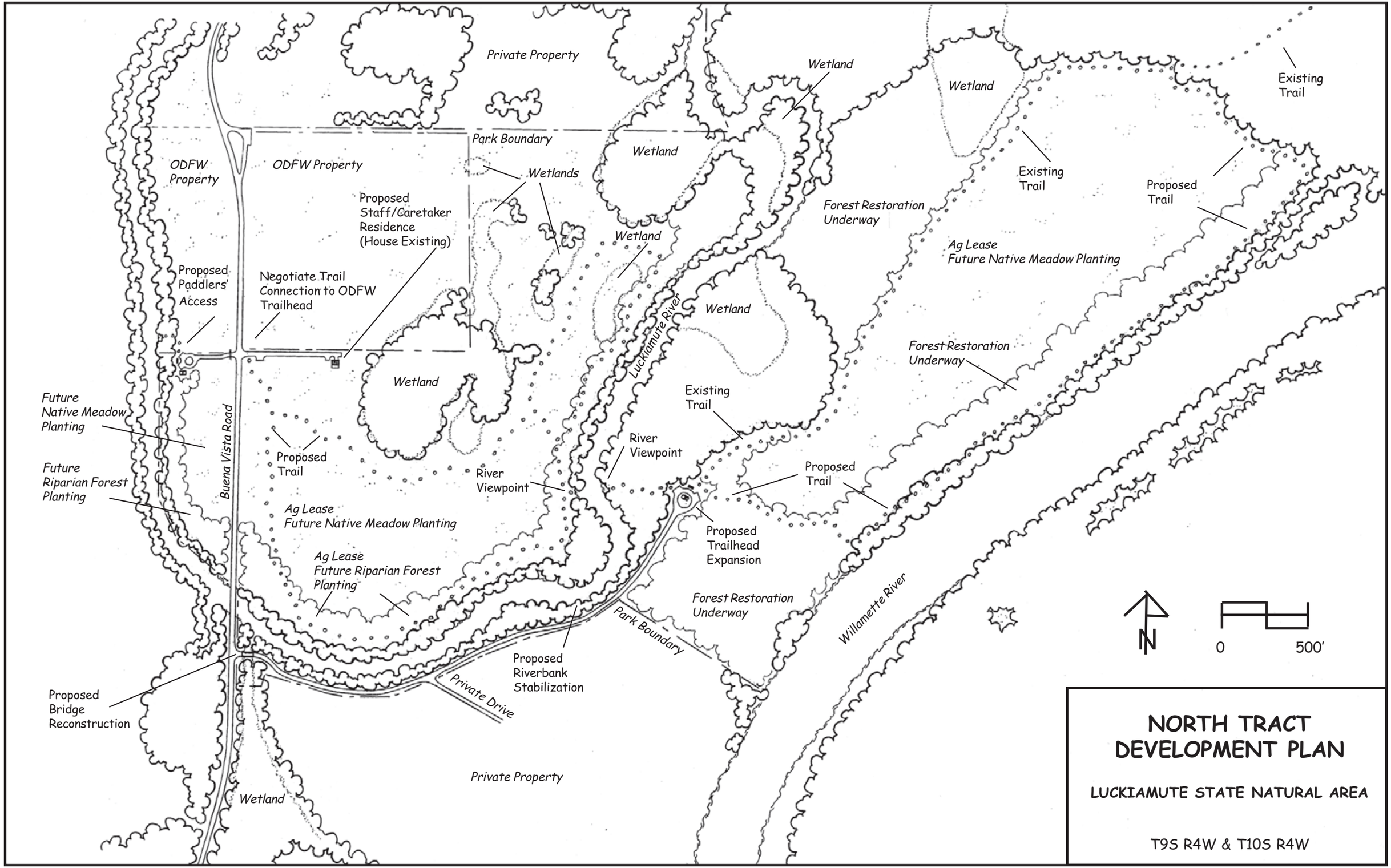
Private Property

Trail
Existing

Park Boundary

N

0 400'


Private Property
Wetland
Wetland
Existing Trail
Park Boundary
ODFW Property
ODFW Property
Wetlands
Wetland
Proposed Staff/Caretaker Residence (House Existing)
Existing Trail
Proposed Trail
Forest Restoration Underway
Ag Lease Future Native Meadow Planting
Proposed Paddlers' Access
Negotiate Trail Connection to ODFW Trailhead
Wetland
Lucklamute River
Forest Restoration Underway
Future Native Meadow Planting
Wetland
Existing Trail
River Viewpoint
Buena Vista Road
Proposed Trail
Future Riparian Forest Planting
River Viewpoint
Proposed Trail
Ag Lease Future Native Meadow Planting
Proposed Trailhead Expansion
Ag Lease Future Riparian Forest Planting
Forest Restoration Underway
Willamette River
Park Boundary
Proposed Riverbank Stabilization
Private Drive
Proposed Bridge Reconstruction
Private Property
Wetland
N
0
500'
NORTH TRACT DEVELOPMENT PLAN
LUCKIAMUTE STATE NATURAL AREA
T9S R4W & T10S R4W

ODFW Property

Negotiate Trail Connection to
ODFW Trailhead

Landscaping
(Low Shrubs)
Proposed

Overnight Paddler Parking
Proposed

0 100'

N

Orientation Signage
& User Registration
Proposed

Gated Access
Road Proposed

ODFW Property

Park Boundary

Park Boundary

Paddler
Parking
Proposed

Staff / Caretaker Residence
Proposed
(House Existing)

Luckiamute River

Vault Toilet
Proposed

Future Native Meadow
Planting

Ag Lease
Future Native Meadow
Planting

Future Riparian Forest
Planting

Buena Vista Road

PADDLERS' ACCESS SITE PLAN

T10S R4W Sec. 3 TL 800

SOUTH TRACT DEVELOPMENT PLAN

LUCKIAMUTE STATE NATURAL AREA

T10S R4W Sections 3, 10 & 11

N

0 400'

Park Boundary

Buena Vista Road

Polk County

Benton County

Ag Lease
Future Native Meadow
Planting

Ag Lease
Future Native Meadow
Planting

Proposed
Park Administration
Office
(Building Existing)

Proposed
Host Site

Wetland

Proposed
Trail

Ag Lease
Future Riparian Forest
Planting

Proposed
Maintenance Facility
(Building Existing)

Wetland

Proposed
Boardwalk

Proposed
Trail

Future
Native Meadow
Planting

Wetland

Meadow
Restoration
Underway

Proposed
Trail

Proposed
Wildlife
Viewing Site

Ag Lease
Future Native Meadow Planting

Wetland

Wetland

Wetland

Proposed
Trail

Willamette River

Proposed
Host Site

West
Pond

Forest
Restoration
Underway

Wetland

Proposed
Trailhead

Proposed
Fishing Access

Wetland

East
Pond

Proposed
Trail

Proposed
Boardwalk

Wetland

Wetland

Park Boundary

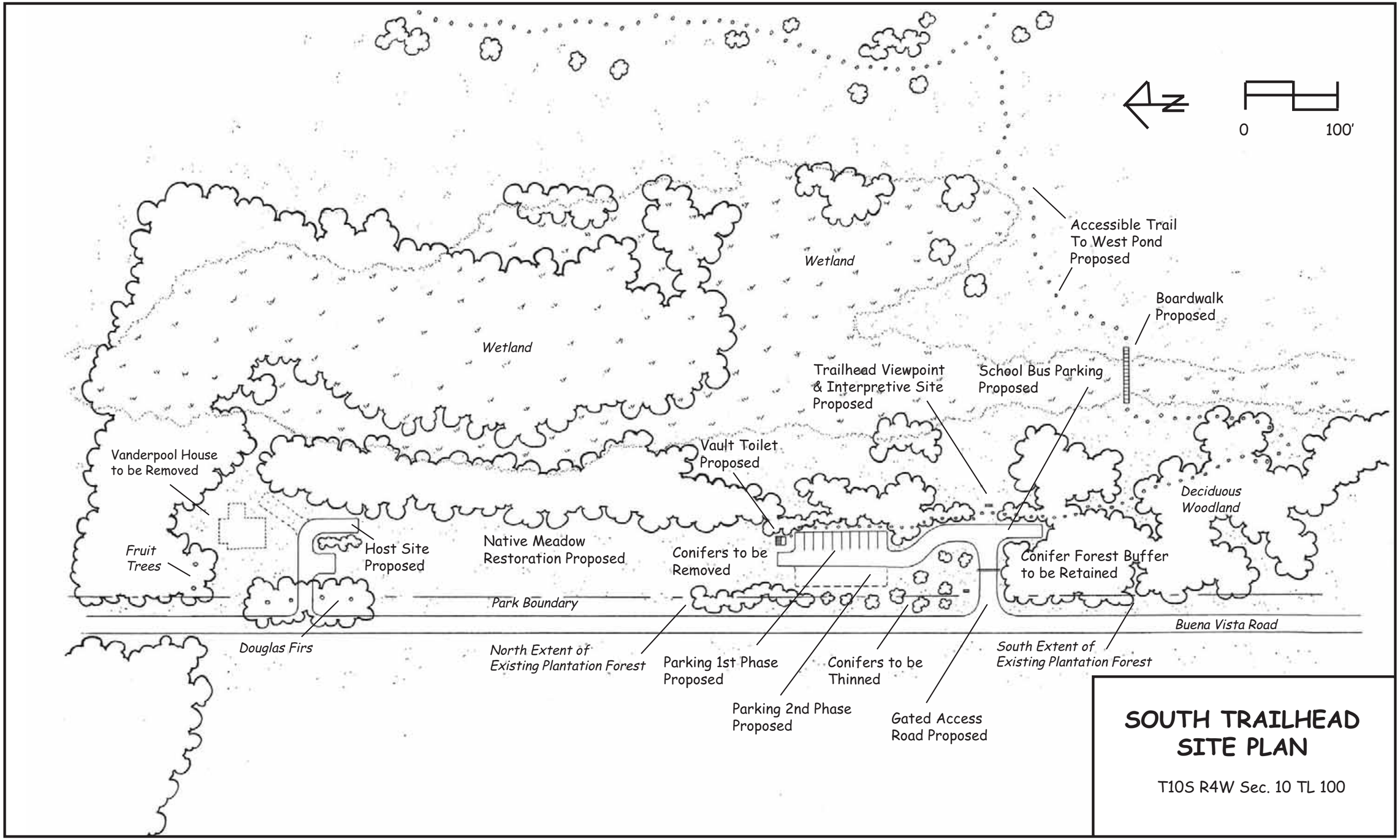
Meadow
Restoration
Underway

Wetland

Wetland

Future
Native Meadow
Planting

Park Boundary



SOUTH TRAILHEAD SITE PLAN

T10S R4W Sec. 10 TL 100

XI. NATURAL, CULTURAL & SCENIC RESOURCE MANAGEMENT

This chapter outlines general guidelines for park resource protection, management, enhancement and restoration as appropriate, based on OPRD polices and statewide objectives, and on regional and park-specific issues identified in the master planning process.

OPRD Natural Resource Policy

As stewards of the natural resources entrusted to the Oregon Parks and Recreation Commission, it shall be the policy of Oregon Parks and Recreation Department to:

1. Proactively manage the natural resource base for its contribution to the regional landscape, as well as, its function within a site specific planned landscape.
2. Actively cooperate and communicate with our public and private neighbors to promote compatible programs and practices.
3. Inform, involve and educate the public in significant planned management actions, including the scientific and practical aspects of current management techniques and strategies.
4. Consider the significant ecological, recreational and aesthetic qualities of our resources to be the highest priority.
5. Develop and follow management programs and action plans which exemplify excellence in resource stewardship, fulfill the agency mission, are guided by the management intent of our property classification system and meet or exceed federal, state and local laws and regulations.

Statewide Natural Resource Management Objectives

OPRD's natural resource management guidelines for state parks are based on system-wide objectives, on the mapping of natural resource conditions in the park, and on ecosystem patterns. A summary of the natural resource conditions in the planning area is included in the Heritage Assessment chapter. Detailed resource maps for the park are available for viewing at the OPRD Salem headquarters office and the Willamette Mission State Park office in Gervais.

The following objectives have been established by OPRD to guide natural resource management decisions for OPRD's properties statewide. These general objectives were considered in combination with the particular resource conditions in the park to determine specific objectives for the park. The statewide objectives are:

1. Protect all existing high value, healthy, native Oregon ecosystems found within OPRD-managed properties. (Based on Oregon Natural Heritage ecosystem types and OPRD definition of high quality.)

a. Allow successional processes to proceed without intervention except as may be needed in particular circumstances.
b. Identify and monitor existing high quality ecosystems for the presence of threats to desired ecosystem types or conditions. Determine whether there are changes desired in ecosystem types or conditions based on consultation with Oregon Department of Fish and Wildlife, the Oregon Natural Heritage Information Center, the Oregon Department of Agriculture Protected Plants section, county resource groups and any applicable federal resource management agencies.
c. Manage the resources to eliminate any unacceptable threats or to attain desired ecosystem conditions and types.
d. Following a natural or human-caused catastrophic event, such as a major fire, wind throw, landslide or flooding; determine what management actions are needed, if any, to attain a desired ecosystem condition or type.

2. Where appropriate, restore or enhance existing low quality resource areas to a higher quality or desired ecosystem types or conditions based on consultation with natural resource agencies as to what a desired ecosystem should be for the planning area and for the region. Identify areas of low resource significance to consider for future recreational use and development, as identified in the park master plan.

3. Manage all OPRD properties to protect existing occurrences of state or federally listed or candidate species to the approval of jurisdictional agencies:

   a. Integrate species management plans into ecosystem management plans that include the monitoring and management of indicator species.
   b. For selected lands, in consultation with natural resource regulatory agencies, determine how best to manage for protected species recovery and related desired ecosystem types and conditions.

4. Manage all OPRD lands and uses to minimize erosion, sedimentation, and other impacts on important resources.

5. Identify and acquire additional lands from willing landowners, or enter into management partnerships with landowners, to provide long term viability for important natural resources within OPRD-managed properties, as needed. Consider connectivity of resources across properties.

6. In areas of high quality ecosystems or habitats, endeavor to provide opportunities for the public to experience the following:

   a. Sights, sounds, smells and feeling of ecosystems representative of Oregon and the region;
   b. Understanding of the ecosystem structure, composition and function;
   c. Larger views of the landscape of which the ecosystem is a part.

7. In selected areas of low quality natural resources, manage for:

   a. Popular or attractive native plants or animals that are appropriate to the local ecosystem;
   b. Desired views or settings;
   c. Desired cultural landscape restorations for interpretation.

8. Locate, design and construct facilities that provide public access to high quality ecosystems or habitats in a manner that avoids significant impacts on the ecosystems.

9. For those OPRD properties or sites which are historically significant and which have been identified by the Department as priority sites for emphasizing cultural resource protection, management and interpretation, manage the natural resources in the cultural resource areas to support cultural resource interpretation, unless this would result in unacceptable conflicts with protected species or areas of special natural resource concern.
10. Manage OPRD natural resources to protect visitors, staff, facilities and neighboring properties from harm.
11. Manage OPRD natural resources to protect them from threats from adjacent or nearby properties or their use.
12. Limit the use of non-native plants to developed facility areas or intensive use areas, and as is needed to withstand intensive use and to provide desired amenities such as shade, wind breaks, etc. Wherever possible, use native species in landscaping developed sites.

General Guidelines for Natural Resources in the Park

This section generally describes OPRD's objectives and conceptual proposals for natural resources in the park, to be used as a basis for more detailed natural resource management and restoration planning. The objectives and proposals address mixed hardwood forest communities, oak woodlands, open meadow habitats, riparian areas, wetlands, at-risk species and invasive species. Aerial photo maps that conceptually illustrate desired future habitat types and patterns in the park are provided at the end of this chapter.

It is not the intent of this master plan to provide detailed prescriptions for management or restoration of the park's natural resources. Rather, the concepts, objectives and general guidance provided in this chapter will be used as a basis for formulating separate, more detailed management and restoration plans. In formulating management and restoration plans, further analysis of resource conditions and consultation with experts will be needed to assess and refine the concepts described in the master plan. The master plan concepts, and the resource management and restoration plans that follows, will be consistent with established partnership and grant agreements, conservation easements and related permits that apply to portions of the park.

Natural Resource Management and Restoration Planning

A resource management and restoration plan will be developed prior to implementation of any project that will significantly alter existing habitat conditions, or that will potentially impact at-risk or sensitive species that are known to occur at, or that are closely associated with, the project site. Resource information and analyses compiled for this master plan, including the "Concepts for Habitat Management and Restoration" contained in this chapter, will be used as a basis for management and restoration planning. In addition, any relevant resource information and analyses compiled for restoration proposals previously funded by NAWCA and CREP grants, and other successful projects that were started under OPRD and ODFW partnership agreements, will be used as a basis for management and restoration planning.

In formulating management and restoration plans for the park, OPRD will conduct an assessment of the ecological conditions in the park as needed to complete and refine the work that has already been done. Substantial information has been compiled and used as a basis for the management and restoration concepts presented in this chapter, and for the restoration grant proposals and projects that have preceded this master plan. The ecological assessment will build on the existing information, provide a more comprehensive understanding of the potential impacts of management and restoration activities on habitats and the species they support, and expand the information base to cover the entire park. In particular, surveys are needed to refine the inventory of at-risk species that rely on, or are closely associated with, the existing and proposed habitat types in the park. OPRD will pursue partnerships and grants for completing at-risk species surveys and the broader ecological assessment.

OPRD will follow professionally accepted protocols for addressing known or potential at-risk species occurrences at the time that projects are proposed for implementation. OPRD will consult with ODFW regarding any known or potential occurrences of state listed at-risk species, and with USFW regarding any known or potential occurrences of federally listed at-risk species.

Resource management and restoration plans will be developed in cooperation with ODFW, and in consultation with other agencies and organizations that have pertinent expertise or specific interests in the park's natural resources and restoration opportunities. The following agencies and organizations will be consulted in the planning process: US Fish and Wildlife Service, Luckiamute River Watershed Council, Oregon State University Department of Fish and Wildlife, Oregon Dept. of Agriculture, Oregon Dept. of Forestry, NRCS, Nature Conservancy, Audubon Society, American Bird Conservancy, Native Plant Society, Institute for Natural Resources, Willamette Partnership, Willamette Riverkeeper, and Ecological Restoration Society. Pertinent field research on species management and habitat restoration methods will be examined and applied as appropriate to management and restoration planning.

At-Risk Species

"At-risk" species are species that meet one of the following criteria:

1. Currently listed as "threatened" or "endangered" under state or federal Endangered Species Acts (ESA);
2. Candidate for listing as "threatened" or "endangered" under state or federal ESA;
3. Not "threatened" or "endangered, or candidate for such listing, under state or federal ESA, but considered to be "at risk" as indicated by inclusion on a state or federal watch list.

Information on at-risk species was compiled from existing data sets provided by ONHIC and ODFW. Supplemental information was provided by a representative of birding and ornithologist organizations (included as Appendix C).

The documentation of at-risk species occurrences reported in this chapter is not presumed to account for all such species that occur in, or are closely associated with, the park. Rather, this documentation is presumed to be the best currently available information. For some areas of the park, focused studies will be needed to determine whether any at-risk species, or critical habitat

for such species, are present. Generally, such studies are needed for areas where planned projects will significantly alter habitat conditions.

When implementing a management or restoration project, OPRD will follow the protocols recommended by affected natural resource agencies to address any known or potential at-risk species occurrences. For any species that are listed as "threatened" or "endangered" under the state or federal Endangered Species Acts (ESA), OPRD will follow any protocols required under the ESA mandates.

The following at-risk species occurrences have been documented within or in the vicinity of the park. The current listed status of each species is reported in the "Heritage Assessment" chapter.

At-Risk Fish Species

- Spring run upper Willamette Chinook salmon (*Oncorhynchus tshawytscha*): The Willamette and Luckiamute Rivers are known to provide rearing and migratory habitat.
- Winter run upper Willamette steelhead (*Oncorhynchus mykiss)*: The Willamette and Luckiamute Rivers are known to provide rearing and migratory habitat.

At-Risk Reptiles and Amphibian Species

- Western pond turtle (*Clemmys marmorata*): As many as 40 to 70 individuals may inhabit the park's south tract. Multiple partners are currently involved in an effort to enhance turtle nesting habitat in the park and protect nests from predation.
- Red-legged frog *(Rana aurora)*: Populations are known to occur in the park. Egg masses have been identified at several locations in the south tract.

At-Risk Bird Species

- Bald eagle (*Haliaeetus leucocephalus*): The territory of a breeding pair abuts, or may include, the park.
- Willow flycatcher *(Empidonax trailli)*: Territorial birds present during nesting season, observed in small numbers in the park. Annually uses brushy edge habitats including willow clumps and bracken fern in the park's north tract. Habitat could be impacted by extensive tree planting if sufficient edge habitat is not provided.
- Yellow warbler *(Dendroica petechia)*: Not listed as an "at-risk" species, however, population declines have been documented. Depends on riparian habitat. Observed in small numbers in the park.
- Band-tailed pigeon *(Columba faciata)*: A small group was observed in the park. Typically nests in mountain forests, but frequents valley areas.

- Purple martin *(Progne subis)*: No sightings documented at the park, but have been found nesting in the E.E. Wilson Wildlife Management Area in recent years. Nests in snags, and in man-made nest boxes and other structures.
- Oregon vesper sparrow *(Pooecetes gramineus affinis)*: A small nesting population, documented in recent years, occurs in the park. Nesting habitat may be removed or nesting success can be disrupted by tree planting, tillage for weed control, and changes in agricultural practices.
- Streaked horned lark *(Eremophila alpestris strigata)*: A nesting population of up to 20 pairs has been documented within 2 miles of the park. Sensitive to nesting disturbance by relatively early agricultural crop harvest cycles. Open meadows in the park may provide suitable habitat.
- Common nighthawk *(Chordeiles minor)*: Several individuals observed foraging near the park. Nests on gravelly substrates. Suitable habitat may exist at the Luckiamute Landing site.
- Trumpeter swan *(Cygnus buccinato)*: About 40 to 60 winter annually in the vicinity, including fields within one mile of the park.
- Short-eared owl *(Asio flammeus)*: Not listed as an "at-risk" species, however, population declines have been documented. Nests in open fields. Uses habitats within 1.5 miles of the park, but has nearly vanished from the Willamette Valley as a nesting species. Could use restored wetland and wet prairie habitats.
- White-breasted nuthatch *(Sitta carolinensis)*: Not listed as an "at-risk" species, however, population declines have been documented. Occurs regularly and probably nests in oak woodlands in the park's south tract. Sparse in closed canopy forests in the north tract. Could be impacted by tree planting if not thinned and allowed to become closed canopy forests.
- Chipping sparrow *(Spizella passerina)*: Not listed as an "at-risk" species. However, population declines have been documented. Oak woodland species, now occurs in the park only as a migrant. Apparently nests in small numbers within a few miles of the park. Restoration of open oak woodland habitats could promote nesting in the park.
- Western meadowlark *(Sturnella neglecta)*: Winters in sizable flocks in open areas of the park, but has not been found in the summer. Highly sensitive to human disturbance including agricultural operations during the breeding season. Fledglings have been reported within 2 miles of the park, suggesting a small remnant population which could recover with grassland restoration.
- Osprey (Pandion haliaetus): Not "at-risk," however, nests are sensitive to disturbance. Nests with young observed annually in the park.
- Peregrine falcon *(Falco peregrinus anatum)*: Occasional winter visitor to the park.
- Yellow-breasted chat *(Icteria virens)*: Nests nearby.
- Great blue heron *(Ardea herodias)*: This species is not "at-risk." However, heron rookeries are sensitive to human disturbance. An active rookery occurs in the park.
- Pileated woodpecker *(Dryocopus pileatus):* Not "at-risk," but sensitive to forest management activities that remove snags and downed timber.

At-Risk Plant Species

Although there were no occurrences of at-risk plant species identified in the initial field surveys and consultation with ONHIC, one at-risk species was identified subsequently in a follow-up site visit by OPRD's Botanist.

- Meadow checker-mallow (Sidalcea campestris): Found in two patches in an open meadow next to the county road.

Forest Management

Forest associations that occur in the park are listed in Appendix A, and are illustrated by the "Plant Communities and Conditions" maps prepared for the Master Plan. Detailed descriptions of each plant association are provided in the background report for the park titled "Natural Resource Inventory for Natural Vegetation, At-Risk Species, and Other Fish and Wildlife Resources," prepared by the Oregon Natural Heritage Information Center (ONHIC).

Forested areas will require appropriate levels of on-going management to ensure that growth progresses toward a healthy, mature, native forest. The OPRD forester will prescribe management actions for long term forest management as a component of resource management and restoration plans for the park. The management actions will address the following objectives:

- Maintain a healthy native forest structure and species composition over time.
- Specific sites within the forest where river views are desirable will require intensive management to maintain screened views through mature forest over time.
- Developed recreation areas will require management to retain grassy open space with shade trees where desired and screening vegetation where needed. Hazard tree management will be needed to protect park visitors and facilities.
- Any thinning operations in the park will be planned to keep to a minimum the threat of windthrow.
- Forest management will be planned to accomplish effective forest fire fuel control as needed.
- The forest will be managed to retain an appropriate level of woody debris and snags for habitat.
- Management of invasive weeds will be especially important for the success of planted riparian forests, at the edges and openings of established forest communities, and in the understory of oak woodland forest types.
- Professionally accepted protocols for addressing known and potential at-risk species occurrences will be followed.

Oak Woodlands

Native Oak woodlands occur in the park's southern tract on the higher floodplain terraces and ridges, and in the northern tract in a small corner of the park where a steep slope rises up from

the north bank of the Luckiamute River. Non-native plant species are predominate in the understory over much of this habitat type. Because oak woodlands are gradually declining in geographic extent, they are generally regarded as habitats of regional conservation concern.

OPRD will strive to manage or restore remnant oak woodland associations where feasible. Management priorities for existing oak woodlands will generally emphasize removal and control of invasive weeds and re-establishment of native understory plant communities, and removal of any competing conifer species unless an oak–conifer association is desirable as a habitat type.

OPRD will explore oak woodland restoration opportunities in suitable areas. Restoration efforts may emphasize areas that are located in and around remnant oak associations, and where non-native shrubs and groundcover are currently predominant. The "Habitat Restoration Concepts" maps in this chapter illustrate possible target areas for oak restoration. OPRD will seek partnerships with interested agencies and organizations in pursuing oak woodland restoration efforts.

Meadow Habitats

Agricultural fields, some of which are in production under lease agreements, occur over much of the park. These are important landscape features, for habitat diversity and scenic values, despite the predominance of non-native ground covers. Habitat restoration projects are currently underway in some of the fields. Mixed riparian forest species have been planted in fields along the Willamette and Luckiamute Rivers. A large field in the interior of the park's south tract has been planted with native upland prairie grass species. Smaller wet prairie restoration projects are underway at several sites.

The "Habitat Restoration Concepts" maps in this chapter illustrate the areas where agricultural fields are to be restored as open meadow habitats, either native prairie or savannah, and where such projects are currently underway. This is proposed for most of the fields. Certain fields have been committed to riparian forest restoration under previously established partnership and grant agreements. Where the forested areas along the rivers are relatively narrow, additional plantings of mixed riparian forest species are proposed at the edges of fields to widen these forested strips and help stabilize river channels and dissipate flood energy.

In evaluating proposed restoration of meadow habitats, pertinent research will be reviewed to address related issues such as edge effect, effective buffer widths, escape cover, predator corridors, thermal cover, and habitat connectivity.

Agricultural lease agreements should be continued as an interim management strategy for fields until native habitat restoration projects can be implemented, provided that the agricultural practices are compatible with the objectives for protection of at-risk species and their habitats expressed in this master plan. A portion of the farm land next to the proposed administrative office may be leased for production of native plant stock to be used in park habitat restoration projects.

OPRD will explore partnership opportunities for establishing native prairie or oak savannah habitat types in agricultural fields, as appropriate for site conditions. Native prairie and oak

savannah habitats are of conservation concern statewide and regionally. There are no examples of these habitat types remaining in the park, aside from areas recently planted with native prairie species under restoration grants.

Wetlands

Wetland habitat types that occur in the park include wet meadows, herbaceous and floating aquatic wetland communities, and wet shrub and forest communities. While a number of wetlands were identified in the resource assessments completed for the master plan, an unknown number of wetlands have not been mapped due to their relatively small size or hidden locations in dense forested areas. Wetlands that were mapped are represented on the "Habitat Restoration Concepts" maps in this chapter.

The Willamette and Luckiamute Rivers contribute most of the surface water in the forested northern area of the park. Several old river meander channels are prominent features in the park. While these features are largely hidden in the forested northern area, they are readily apparent where they dissect the agricultural fields. A range of wetland habitat types occur in the old channels and other depressions. One of these old channels has been connected from the south tract of the park to the Luckiamute River by a man-made ditch. The southern reach has been dammed by beavers and contains a string of small but high quality wetlands. Three ponds in former gravel pits in the southern tract also provide wetland habitat values. A few small wetlands have been created or enhanced in the agricultural fields in the southern tract under existing restoration grants.

OPRD conducts wetland determinations in the field in an effort to avoid wetlands when locating recreational facilities. Minor wetland encroachment is sometimes necessary for trail crossings and interpretive sites that rely on wetland locations. At the west pond, a fishing platform is proposed that may extend into the shoreland and open water habitat. OPRD will abide by applicable regulatory requirements, and meet or exceed any applicable mitigation requirements, for any project involving wetland encroachment.

OPRD will continue to explore partnerships with interested agencies and organizations to enhance, restore or create wetlands as appropriate for site conditions where significant ecological benefits are likely to result.

Riparian Areas

Riparian hardwood forests dominate roughly the northern one third of the park, and also occur in strips along river banks and old river meander channels. General guidelines for management of forested areas are discussed earlier in this chapter. A variety of riparian habitat communities occur at the margins of the permanently or seasonally flooded wetlands contained in old channels and other depressions.

Most recreational facilities will be located to avoid riparian habitats, with limited exceptions. Trail development is planned along riparian corridors, and will cross these features at certain locations. The boat-in access and its connecting trail to the primitive camp will be slightly relocated at Luckiamute Landing. A paddlers' access is planned along the Luckiamute River,

which will include an access road and small parking area on the upper floodplain terrace. As mentioned above, a fishing platform is proposed at the west pond in the southern tract. These sites will be designed and managed to minimize impacts on riparian habitat and prevent erosion, and will include features that encourage visitors to stay on the designated trails.

OPRD will manage native riparian habitats, using professionally accepted management practices, to protect habitat, water quality and floodwater detention functions. Removal of mature native trees, snags, and shrubs from viable riparian habitats will occur only as prescribed for purposes related to visitor safety or forest health. Snags and fallen trees will be left in place to benefit riparian and aquatic habitat, except as needed to remove obstructions or address safety concerns. Views from trails or other recreation use areas, as seen through riparian forests, may be maintained through careful pruning to remove lower tree limbs and maintain the height of understory shrubs.

OPRD will pursue partnerships with interested agencies and organizations to enhance or restore riparian habitats in areas where damage has resulted from past land use activities or invasive weeds, or otherwise where significant ecological benefits are likely to result from such projects.

Exotic Species

Invasive non-native plants pose one of the most immediate threats to natural resource conditions at the park. Numerous problem areas were identified as part of the ONHIC inventory of plant communities and conditions. This inventory was supplemented by an additional assessment conducted by OPRD's botanist. Large sites where invasive plants are predominant are identified on the "Plant Communities and Conditions" maps prepared for the master plan. In addition, the ONHIC reports for the park (titled "Natural Resource Inventory for Natural Vegetation, At-Risk Species, and Other Fish and Wildlife Resources") contain references to invasive plants that occur in the species composition of various plant associations.

Himalayan blackberry and reed canarygrass, the most problematic invasive plants in the park, are widespread throughout the park except in the largest blocks of forest vegetation, and in areas that are actively managed for agriculture or habitat restoration. Agricultural weeds are of lesser importance. While many of the weeds are seral species that will eventually be shaded out where forest restoration projects become established, a more active management program will be required in areas targeted for open meadow habitat types and at the edges and openings of forested areas.

Control of invasive plants will be of paramount importance in the development and implementation of resource management and restoration plans for the park. OPRD will pursue partnerships with interested agencies and organizations to prioritize, manage, and restore problem areas where feasible. Such projects will be prioritized based on the relative threat, project feasibility, potential for ecological benefit, partnership opportunities and available funding.

Non-native fish and wildlife species also occur in the park, some of which may threaten the survival of at-risk species. In particular, juvenile western pond turtles are vulnerable to predation

by bullfrogs, and by fish species such as large and small mouth bass that may be present in the ponds.

In managing at-risk species habitats, OPRD will work closely with ODFW to identify and implement strategies to control predation and competition from invasive wildlife.

Existing Restoration Projects

Habitat restoration projects are underway in both the northern and southern tracts of the park. OPRD will continue to support existing viable restoration projects.

In the north tract, mixed riparian forest species have been planted on a total of 76 acres of former agricultural fields along the Luckiamute and Willamette Rivers. This project was funded by the Conservation Reserve Program (CREP) administered by USDA.

In the south tract, restoration of a total of 242 acres is underway for several habitat types including mixed riparian forest, upland prairie, wet prairie and backwater slough habitats. Most of the funding for this project was provided by the North American Wetlands Conservation Act (NAWCA) grant program. ODFW contributed additional funding and large amounts of staff time.

Restoration and protection of western pond turtle habitat in the south tract was made possible by a grant from the Willamette Habitat Restoration Fund, and contributions of staff time and equipment provided by ODFW. Additional labor and field work related to turtle studies and nest protection were contributed by an OSU intern and Luckiamute Watershed Council volunteers.

Concepts for Habitat Management and Restoration

The maps in this chapter titled “Habitat Restoration Concepts” conceptually illustrate the desired future pattern of habitat types in the park. The proposed habitat pattern responds to the recommendations for Willamette Valley habitat restoration expressed in publications of several interested organizations, including the Oregon Biodiversity Project, Pacific Coast Joint Venture, Willamette Partnership, Defenders of Wildlife, and others. The concepts also reflect the background mapping and reports on natural resource conditions, and OPRD’s standing commitments to management and restoration previously established through grants and partnership agreements. And finally, the concepts reflect the recreational, scenic and cultural landscape objectives for the park that have been determined to be compatible with the above factors. These concepts are intended to be adaptable, to respond to new and better information that may emerge in the development of management and restoration plans, and as more is learned over time through experience with project implementation.

The “Habitat Restoration Concepts” maps represent the proposed future habitat pattern with the habitat types discussed below.

Mixed Riparian Hardwood Forests: This type represents forest associations dominated by a mix of Oregon ash, bigleaf maple and black cottonwood. Wetland plant communities likely

occur in meander channels and depressions that are hidden in the dense forest vegetation. A number of areas are proposed for restoration of mixed hardwood forests.

Ash Forests: This subset of the mixed riparian hardwood forest has a canopy of predominantly Oregon ash. It occurs primarily at lower elevations where flooding is more frequent and of longer duration than in the slightly higher elevation mixed hardwood associations. Wetlands hidden within these forests are typically more common and extensive than in the somewhat drier mixed forests. A few small areas are targeted for ash forest restoration.

Oak Woodlands: This type represents forest associations where Oregon white oak has a dominant presence in the forest canopy. Bigleaf maple, Oregon ash, and occasional Douglas fir are also present. These associations occur primarily on the higher and drier floodplain terraces and ridges, and on a hill slope that rises up from the north bank of the Luckiamute River. A few areas adjacent to existing oak woodlands are targeted for restoration of this habitat type.

Shrublands: There were no upland native shrub associations mapped in the inventory of existing plant communities. One upland area currently dominated by Himalayan blackberry is proposed for restoration with native upland shrubs such as snowberry, Oregon grape, ocean spray and hazel.

Prairie or Oak Savannah: There are no examples of native upland prairie or savannah habitats remaining in the park, except for restoration project areas that have recently been planted with upland prairie species. Several more agricultural fields are targeted for eventual restoration of upland prairie or savannah habitats, as appropriate for site conditions, with species such as blue wildrye, roemers fescue, Sitka brome, California or mountain brome, and California oatgrass.

Wet Prairie: Several wetland prairie restoration projects are underway, which are the only examples of this habitat type in the park. A few more sites are proposed for restoration of this type. Restoration of this habitat type typically includes species such as tufted hairgrass, American sloughgrass, thick spike bentgrass, water foxtail, and meadow barley.

Herbaceous Wetlands: This type represents a few fairly large and high quality wetlands, mostly contained in old meander channels that support herbaceous and floating aquatic species. These were identified in the plant communities' inventory as narrowleaf bur-reed, pondlily, and Wapato marshes. There are no wetland restoration projects of this type proposed.

Shrub Wetlands: Several species of willow dominate this habitat type in areas along the river banks and meander scars. A few areas are targeted for restoration with wetland shrub species.

Water: This type generally represents open water, but also includes other wetlands where plant communities are present but have not been specifically identified. There are no open water habitat restoration projects proposed.

Scenic Resource Management

There is no formal policy on scenic resource management in state parks except for general guidance provided by OPRD's mission statement and OPRD's recreation setting definitions developed for the Statewide Comprehensive Outdoor Recreation Plan. The recreation setting

definitions are applied in the master plan assessments. The department has a long history of exploring opportunities to acquire or establish agreements regarding the management of properties for scenic enjoyment, and continues that tradition in its management actions.

River Views

Views of the river from key viewpoints along planned riverfront trails should be maintained by careful pruning of the lower limbs of trees and maintaining the height of understory vegetation.

With the exception of the riverfront trails, water trail camp and boat landing, all of the park development projects are situated at a distance from the Willamette River. The portable toilet installed seasonally at the boat-in camp should be sited in a location that is visually buffered from the river perspective.

The planned paddlers' access on the Luckiamute River will include a seasonally installed portable toilet or permanent vault toilet. This toilet should also be sited at a location that is buffered from view from the river perspective.

Meadow Views

Agricultural fields that are targeted for restoration as native prairie or savannah habitat types are important for their scenic qualities as well as habitat diversity. The trail system will be designed to include segments along forest–meadow edges where meadow views will contribute to the visual experience of the park visitors.

Buena Vista Road

Most of the park property that borders Buena Vista Road is targeted for restoration of native prairie or savannah habitat, except the proposed south trailhead site and places where old river channels and the Luckiamute River cross the road. In part, the intent is to showcase the native prairie and/or savannah open space, optimally including an abundance of native wildflowers, for the visual experience of travelers on the road and visitors approaching the park.

South Trailhead

The proposed south trailhead is located at the site of an overgrown Christmas tree plantation. Management of this conifer forest will emphasize the trailhead site development objectives, which include scenic resource objectives. Thinning between the trailhead parking and the county road will make the parking area visible from the road, to help discourage unauthorized activity, while retaining enough trees for afternoon shade and enhancement of the parking lot's visual appearance. Looking eastward from the trailhead, the forest will be thinned enough to provide a view across the park landscape for the enjoyment of the visitors. North of the parking area, most or all of the conifers will be removed and replaced with native meadow, providing a northward view toward the Vanderpool home site. To the south, a dense forest cover will be retained as a visual buffer between the trailhead parking and the adjacent private land.

Plantings for Visual Buffering and Enhancement

Native vegetation plantings to provide visual buffers may be needed at certain sites. For example, plantings may be needed to screen portable or vault toilets at the boat-in camp or paddlers' access from the river perspectives, and to screen the south trailhead vault toilet from the road. Landscaping with native vegetation will be installed at the park administration facility entrance road, at its connection with the county road, to enhance the visual appearance of this entrance and to help buffer the road from view from the neighbors' perspective. The road entrance to the Baker house will also be landscaped to enhance the visual appearance. The south trailhead entrance road may need plantings of native shrubs to complement the backdrop of conifers. Proposed host sites will also be buffered from the perspectives of the county road with native shrubs.

Cultural Resource Management

Sites where archeological resources are most likely to be found were identified in the master planning process through a review of State Historic Preservation Office (SHPO) files on previous archeological investigations. SHPO staff also accompanied OPRD staff on site visits to the various sites where park development projects were being considered. Since all of the proposed development projects for the park are minor in extent, mostly requiring only shallow excavation, and could easily be adjusted to protect any subsequent archeological discoveries, SHPO staff determined that further investigations could be deferred to the final construction design phase for each project.

OPRD will be required to consult with SHPO prior to ground breaking for construction projects and other ground disturbing activities, and follow required SHPO protocol for investigating project sites and protecting any significant resources.

Prior to beginning any ground disturbing activities, OPRD or SHPO staff will arrange consultation with representatives of Native American Tribes that claim cultural affiliation to the area to involve the Tribes in assessing the cultural significance of the park and project sites and actions needed to protect any significant resources.

The former Vanderpool house was reviewed for historical significance. It was found not to be eligible for the National Register of Historic Places, or of statewide cultural significance. However, some neighborhood residents have suggested that the house has some local historic appeal, representing a depression era home site. Although the house was previously scheduled for removal, OPRD is considering the option of rehabilitating it for use in conjunction with park oversight and management, such as a caretaker or ranger residence.

Habitat Restoration Concepts

Luckiamute State Natural Area
North Tract - Section A

June 2006

0 125 250 500 750 1,000 Feet

N

S

Approximate Park Boundary

Proposed Future Habitat Types

- Mixed Riparian Hardwood Forest
- Ash Forest
- Oak Woodland
- Shrubland
- Prairie or Oak Savannah
- Wet Prairie
- Herbaceous Wetland
- Shrub Wetland
- Water

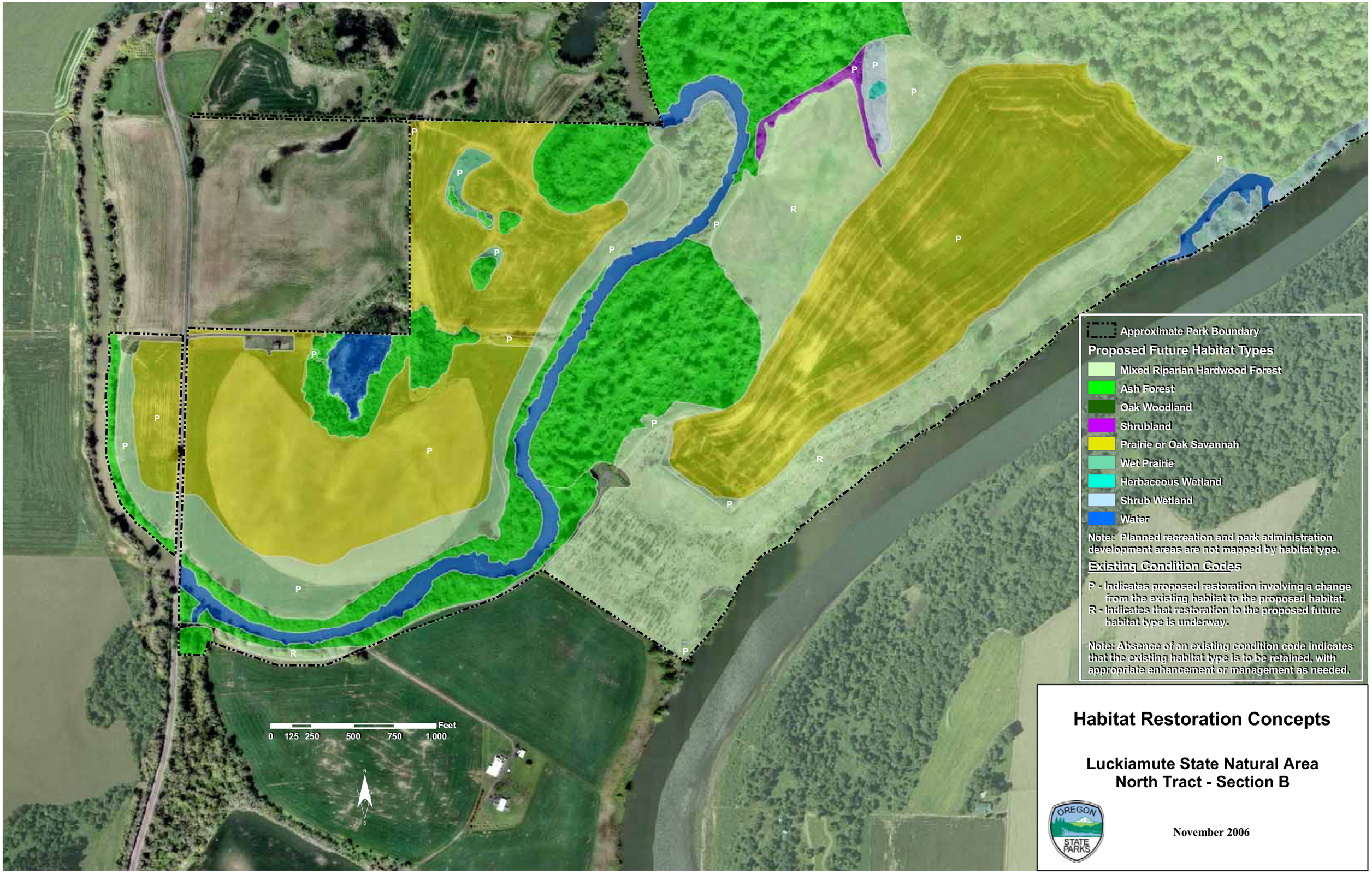
Note: Planned recreation and park administration development areas are not mapped by habitat type.

Existing Condition Codes

P - Indicates proposed restoration involving a change from the existing habitat to the proposed habitat.

R - Indicates that restoration to the proposed future habitat type is underway.

Note: Absence of an existing condition code indicates that the existing habitat type is to be retained, with appropriate enhancement or management as needed.



Habitat Restoration Concepts

Luckiamute State Natural Area
North Tract - Section B

November 2006

Habitat Restoration Concepts

Luckiamute State Natural Area
South Tract

November 2006

Native Plant Nursery

Approximate Park Boundary

Proposed Future Habitat Types

- Mixed Riparian Hardwood Forest
- Ash Forest
- Oak Woodland
- Shrubland
- Prairie or Oak Savannah
- Wet Prairie
- Herbaceous Wetland
- Shrub Wetland
- Water

Note: Planned recreation and park administration development areas are not mapped by habitat type.

Existing Condition Codes

P - Indicates proposed restoration involving a change from the existing habitat to the proposed habitat.

R - Indicates that restoration to the proposed future habitat type is underway.

Note: Absence of an existing condition code indicates that the existing habitat type is to be retained, with appropriate enhancement or management as needed.

Feet
0 125 250 500 750 1,000

N
S

XII. SUMMARY OF LAND USE APPROVAL REQUIREMENTS

Development of the park uses and facilities described in this master plan is governed by Polk and Benton Counties within their respective land use jurisdictions and under the provisions of their comprehensive plans. The county comprehensive plans are acknowledged by the Land Conservation and Development Commission (LCDC) pursuant to the statewide land use goals, statutes and related administrative rules.

This master plan has been formulated through the master planning process described under OAR 736 Division 18 and OAR 660 Division 34. The master planning process includes procedures for coordinating with affected local governments to assure that the park master plan is compatible with the local government comprehensive plans.

Land Use Approval of the Master Plan

Land use approval of the state park master plan by an affected local government is required unless all of the planned state park projects are determined by the local government to be compatible with the local comprehensive plan and ordinance provisions. "Compatible" means that development permits may be approved for all of the planned park projects within the affected local government jurisdiction without first amending the local government's comprehensive plan or ordinance.

Development Permits for State Park Projects

Development permits are required for some of the projects described in the master plan. Prior to beginning construction of any project, the project manager is responsible for consulting with the affected local government planning department and obtaining the necessary development permits. The specific requirements for obtaining development permits for a project, and the kind of local permitting process required, may vary from one project to another. The time required for completing the development permitting process may also vary, therefore, the project manager should consult with the local government planning department early enough to assure that the permitting process is completed prior to the target date for beginning construction. Prior to issuance of development permits for a project, the local government will review the project plans and specifications to assure that the project proposed for construction is consistent with the design concept and description of the project in the park master plan and with any applicable development standards in the local government's development ordinances.

Variations from the Master Plan

Under the provisions of OAR 736-018-0040, OPRD may pursue development permits for a state park project that varies from a state park master plan without first amending the master plan provided that the variation is minor, unless the master plan language specifically precludes such

variation. Any specific project design elements that cannot be changed by applying the "Minor Variation" rule are indicated in the design standards for the projects in the master plan.

The OPRD Director must determine that a proposed variation from the master plan is "minor" using the criteria in OAR 736-018-0040. A minor variation from the master plan, which is approved by the Director, is considered to be consistent with the master plan, contingent upon the concurrence of the affected local government.

Rehabilitation of Existing State Park Uses

State laws allow OPRD to continue any state park use or facility that existed on July 25, 1997. (See ORS 195.125 and OAR 660-034-0030(8).) The laws allow the repair and renovation of facilities, the replacement of facilities including minor location changes, and the minor expansion of uses and facilities. Rehabilitation projects are allowed whether or not they are described in a state park master plan. These projects are subject to any clear and objective siting standards required by the affected local government, provided that such standards do not preclude the projects.

Prior to applying for development permits for a project involving a minor location change of an existing facility or minor expansion of an existing use or facility, the OPRD Director must determine that the location change or expansion is "minor" using the criteria in OAR 736-018-0043. A determination by the Director that a proposed location change or expansion is minor is contingent upon the concurrence of the affected local government.

APPENDIX A
NATIVE PLANT ASSOCIATIONS AT LUCKIAMUTE

The following native plant associations were mapped and described by the Oregon Natural Heritage Information Center in the report titled "Natural Resource Inventory for Natural Vegetation, At-risk Species and Other Fish and Wildlife Resources at Luckiamute." Refinements to the original mapping and report were subsequently completed by OPRD's Botanist. The completed maps and companion report are available for viewing at the OPRD headquarters office in Salem.

FOREST ASSOCIATIONS

Map code: F1 - 2(B)
Mixed Oregon ash bottomland forest (*Fraxinus latifolia*)
Condition rating: 2
Habitat type: Westside lowland hardwood forest

High-quality Oregon ash bottomland forest occurring in an unmappable mix of forest types on a wet-to-dry hydrological gradient controlled by microtopography. Landforms are old channels, levees, hummocks, and ridges on meander-scarred floodplains on silt loam soils. Stands are mid-successional, with most trees probably 50-100 years old, although a very few old-growth ash trees with diameters greater than 30 inches were seen. The wettest sites are flooded seasonally and typically have little or no herb layer, or a sparse cover of slough sedge (*Fraxinus latifolia / Carex obnupta* forest). Ash seedlings may be abundant. Slightly drier sites have occasional cottonwoods and crabapple, with a sparse to dense understory of mostly native species, including slough sedge, Dewey sedge, impatiens, and stinging nettle (*Fraxinus latifolia / Carex obnupta* forest; *Fraxinus latifolia / Carex deweyana - Urtica dioica* ssp. *gracilis*). Stands on ridges and levees support a distinctly drier and brushier mix of primarily of ash but with occasional white oak, grand fir, cascara, and cottonwood (*Fraxinus latifolia / Symphoricarpos albus*; *Fraxinus latifolia - Populus balsamea* ssp. *trichocarpa / Symphoricarpos albus*). The shrub layer includes ninebark, hazel, Nootka rose, wood rose, salmonberry, spiraea, snowberrry, vine maple, elderberry, oceanspray, and poison oak. When present, the herb layer contains Dewey sedge, trailing blackberry, camas, and starry false lily of the valley. Gaps in the canopy along channels may be dominated by unmappable inclusions of Pacific willow and stinging nettle.

Map code: F1 - 3(B)
Mixed Oregon ash bottomland forest (*Fraxinus latifolia*)
Condition rating: 3
Habitat type: Westside lowland hardwood forest

Lesser-quality Oregon ash bottomland forest with species composition and landform characteristics similar to F1-2(B) above.

Map code: F2 - 2(B)
Mixed riparian Oregon ash - bigleaf maple - black cottonwood forest (*Fraxinus latifolia - Acer macrophyllum - Populus balsamea* ssp. *trichocarpa*)
Condition rating: 2
Habitat type: Westside lowland hardwood forest

High-quality Oregon ash - bigleaf maple - black cottonwood forest occurring in an unmappable mix of forest types on a wet-to-dry hydrological gradient controlled by microtopography. Landforms are old channels, levees, hummocks, and low ridges on meander-scarred floodplains on silt loam and gravelly riverwash soils, usually adjacent to larger rivers. Stands are mid-successional, with most trees probably 50-75 years old. Black cottonwood is dominant or codominant with Oregon ash and bigleaf maple. Lower sites support primarily Oregon ash and typically have a sparse to dense herb layer of slough sedge (*Fraxinus latifolia / Carex obnupta* forest), but seasonal flooding is generally not evident. Stands on ridges and levees support a brushier mix of cottonwood, ash, bigleaf maple, and black hawthorn (*Acer macrophyllum / Symphoricarpos albus - Urtica dioica* ssp. *gracilis*; *Fraxinus latifolia - Populus balsamea* ssp. *trichocarpa/ Cornus sericea*; *Fraxinus latifolia - Populus balsamea* ssp. *trichocarpa/ Corylus cornuta - Physocarpus capitatus*; *Fraxinus latifolia - Populus balsamea* ssp. *trichocarpa / Symphoricarpos albus*). The shrub layer includes ninebark, hazel, thimbleberry, salmonberry, snowberrry, vine maple, creek dogwood, and elderberry. When present, the herb contains Dewey sedge, trailing blackberry, camas, and stinging nettle. Gaps in the canopy and gravel bars along rivers may be dominated by unmappable inclusions of Pacific willow and stinging nettle.

Map code: F2 - 3(B)
Mixed riparian Oregon ash - bigleaf maple - black cottonwood forest (*Fraxinus latifolia - Acer macrophyllum - Populus balsamea* ssp. *trichocarpa*)
Condition rating: 3
Habitat type: Westside lowland hardwood forest

Lesser-quality Oregon ash - bigleaf maple - black cottonwood forest with species composition and landform characteristics similar to F2-2(B) above.

Map code: F2 - 3(C)
Replanted Oregon ash - bigleaf maple - black cottonwood forest (*Fraxinus latifolia - Acer macrophyllum - Populus balsamea* ssp. *trichocarpa*)
Condition rating: 3 (OPRD changed the condition code for this community to 3, based on the restoration investment and intended resulting community.)
Habitat type: Westside lowland hardwood forest, with some ponderosa pine included

Occurs in the northern tract where OPRD has planted native trees in agricultural fields to restore riparian forest. Species planted include black cottonwood, Oregon ash, ponderosa pine, red alder, western red cedar and Douglas fir. Stands are in a very early seral stage, and currently are full of exotic species. Survival has been most successful along the west and south ends of the

tract, while the strip planted along the Willamette River appears to have had the greatest losses. Some of the planted areas are thick with noxious weeds, particularly bull thistle.

Map code: F3 - 3(A)
White oak - Oregon ash / snowberry upland forest (*Quercus garryana - Fraxinus latifolia / Symphoricarpos mollis*)
Condition rating: 3
Habitat type: Westside oak woodlands

Lesser-quality upland white oak - Oregon ash forest occurs on the higher ridges and terraces. It is similar to the drier upland inclusion in the mixed Oregon ash bottomland (F2), but white oak is more abundant than ash, and bigleaf maple and occasional Douglas fir are present, while cottonwood is absent. Stands are often late-successional, with oak trees probably 100-250 years old. The shrub layer is dense and includes Himalayan blackberry, snowberry, hazel, wood rose, vine maple, elderberry, oceanspray, and poison oak. When present, the herb layer may contain Dewey sedge, trailing blackberry, camas, and starry false lily of the valley. Such stands are probably remnant savanna or woodland vegetation. Some stands have a sparse overstory and the entire understory may be dominated by Himalayan blackberry.

Map code: F4 - 3(B)
White oak - bigleaf maple - Douglas fir upland forest (*Quercus garryana - Acer macrophyllum - Pseudotsuga menziesii/ Acer circinatum - Corylus cornuta*)
Condition rating: 3
Habitat type: Westside oak woodlands

Present in the north tract, where a small piece of OPRD ownership extends up the side of a hill west of the Luckiamute River to an elevation of about 250 feet. The trees here are older than the surrounding ownership on the same hillslope.

SHRUB ASSOCIATIONS

Map code: S1 – 2
Hooker willow (Pacific willow - Sitka willow) shrub swamp (*Salix hookeriana* (*Salix lucida* ssp. *lasiandra - Salix sitchensis*))
Condition rating: 2
Habitat type: Westside riparian - wetlands

Occurs in seasonally to permanently flooded wetlands. Unlike other depressional marsh types, the water here is flowing and cold, indicating a deeper groundwater source. This portion of the swamp is a dense willow stand with small open areas of water containing narrowleaf bur-reed, water hemlock, duckweed, common bladderwort, water purslane, and two-headed starwort.

Map code: S2 – 3
Pacific willow - river willow riparian (*Salix lucida* ssp. *lasiandra - Salix fluviatilis* / *Salix sitchensis*)
Condition rating: 3

Habitat type: Westside riparian - wetlands

Occurs on riverwash, gravel bars and cobbly banks along the river channel. The substrate is cobbles, gravel, and sand. Primary associated species include peach-leaf willow, Sitka willow, and reed canarygrass, but a number of other mostly weedy herbaceous species indicate frequent disturbance during winter flooding. Stands are usually mixed species of willow but monotypic stands are also common, particularly of Sitka willow, and may contain unmappable areas of bare gravel or silt bars. Stands also occur as mostly unmappable inclusions in riparian Oregon ash-black cottonwood stands.

WETLAND ASSOCIATIONS

Map code: H1 – 2
Narrowleaf bur-reed marsh (*Sparganium angustifolium*)
Condition rating: 2
Habitat type: Herbaceous wetlands

Occurs in sloughs, in both warm water depressions and in colder flowing water. Associated species include common spikerush, wapato, inflated sedge, common bladderwort, and duckweed.

Map code: H2 – 2
Pond-lily aquatic bed (*Nuphar lutea* ssp. *polysepala*)
Condition rating: 2
Habitat type: Herbaceous wetlands

Occurs in sloughs, in both warm water depressions and in colder flowing water. A small unmappable patch also occurs in a wapato marsh. Usually monotypic but may include common spikerush, inflated sedge, common bladderwort, and duckweed.

Map code: H3 – 2
Wapato marsh (*Sagittaria latifolia*)
Condition rating: 2
Habitat type: Herbaceous wetlands

Occurs in a slough near the southern border. Dominated by wapato with lesser amounts of mostly native aquatic and emergent species, most notably narrowleaf bur-reed, inflated sedge, common bladderwort, and yellow pondlily. The site had 1-3 feet of water at the time of survey but probably dries up in dry years. A smaller seasonally-flooded wapato marsh occurs as a seasonal pond in an agricultural field.

Map code: H6 – 3
Wet prairie restoration
Condition rating: 3
Habitat type: Herbaceous wetlands

These units were formerly dominated by non-native plant species and were mechanically treated for crops or weeds and seeded to native grass species by the Oregon Department of Fish and Wildlife (ODFW). A portion of this restored habitat was formerly dominated by reed canarygrass (*Phalaris arundinacea*) prior to ODFW's restoration work, and coded as "H4-4" in ONHP's original report. The remainder of the habitat in this category was formerly in commercial grass seed cultivation, coded "D2" in ONHP's original report. In the first stage of restoration, the previously dominant non-native species were mechanically and chemically treated in a variety of ways depending on the conditions at individual sites. These initial control measures included bulldozing, grading, and discing. After controlling non-natives, a mix of native grass species was broadcast seeded. The species used were American sloughgrass (*Beckmannia syzigachne*), water foxtail (*Alopecurus geniculatus*), tufted hairgrass (*Deschampsia cespitosa*), and meadow barley (*Hordeum brachyantherum*). These species have become established to varying extents, and constitute a restored native community with some residual non-native species presence.

UPLAND GRASSLAND ASSOCIATIONS

Map code: H7 – 3
Upland prairie restoration
Condition rating: 3
Habitat type: Westside grasslands

Formerly an agricultural field actively cultivated for grass seed ("D2" in ONHP's original report). The Oregon Department of Fish and Wildlife restored this field by spraying out the grass seed crop and planting native grass species. Two mixes of native seed were used in different areas of the field. In topographically lower (wetter) areas, a mix of blue wildrye (*Elymus glaucus*), meadow barley (*Hordeum brachyantherum*), tufted hairgrass (*Deschampsia cespitosa*), water foxtail (*Alopecurus geniculatus*), american sloughgrass (*Beckmannia syzigachne*), slender wheatgrass (*Elymus trachycaulus*), california brome (*Bromus carinatus*), prairie junegrass (*Koeleria macrantha*), Pine bluegrass (*Poa scabrella/secunda*), and California oatgrass (*Danthonia californica*) was planted. Higher areas were seeded with blue wildrye, slender wheatgrass, California brome, prairie junegrass, pine bluegrass, and California oatgrass.

Map code: H8 – 3
Upland grassland restoration
Condition rating: 3
Habitat type: Westside grasslands

These units were formerly the steep banks and the top margins of the banks of two old gravel pits/ponds, coded as D1 (disturbed) in ONHP's original report. The steep banks were made more gradual and were contoured with the soil overburden from the reed canarygrass removal and the grading of several wet prairie restorations, as described above in H6-3. Reed canarygrass-laden soil and plant material was placed first, with a cap of clay soils from the grading the wetland prairie restorations that were formerly agricultural fields. The clay cap was placed for western pond turtle nesting habitat. The recontoured banks were blanket harrowed and seeded with pine bluegrass (*Poa scabrella/secunda*).

APPENDIX B
HABITAT TYPES AND CLOSELY ASSOCIATED WILDLIFE

Source: O'Neil, Thomas A., David H. Johnson, Charley Barrett, Marla Trevithick, Kelly A. Bettinger, Chris Kiilsgaard, Madeleine Vander Heyden, Eva L. Greda, Derek Stinson, Bruce G. Marcot, Patrick J. Doran, Susan Tank, and Laurie Wunder. ***Matrixes for Wildlife-Habitat Relationship in Oregon and*** *Washington*. Northwest Habitat Institute. 2001. In D. H. Johnson and T. A. O'Neil (Managing Directors) ***Wildlife-Habitat Relationships in Oregon and*** *Washington*. Oregon State University Press, Corvallis, Oregon, USA. 2001.

Relevance to the Luckiamute Setting: Species lists derived from the above source were reviewed by OPRD's Wildlife Biologist, and edited according to their relevance to the Luckiamute setting.

Habitat Type: Westside Lowland Conifer – Hardwood Forest

Closely associated mammals: Pacific Shrew; Trowbridge's Shrew; Shrew-mole; Coast Mole; California Myotis; Long-legged Myotis; Silver-haired Bat; Big Brown Bat; Mountain Beaver; Townsend's Chipmunk; Douglas' Squirrel; Northern Flying Squirrel; Western Pocket Gopher; Deer Mouse; Bushy-tailed Woodrat; Western Red-backed Vole; White-footed Vole; Red Tree Vole; Common Porcupine; Gray Fox.

Closely associated birds: Hooded Merganser; Common Merganser; Ruffed Grouse; Blue Grouse; Band-tailed Pigeon; Northern Pygmy-owl; Barred Owl; Northern Saw-whet Owl; Anna's Hummingbird; Olive-sided Flycatcher; Pacific-slope Flycatcher; Warbling Vireo; Winter Wren; Golden-crowned Kinglet; Western Bluebird; Varied Thrush; Black-throated Gray Warbler; Hermit Warbler; Wilson's Warbler; Western Tanager.

Closely associated reptiles: (None)

Closely associated amphibians: Ensatina; Red-legged Frog.

Habitat Type: Westside Oak and Dry Douglas Fir Forest and Woodlands

Closely associated mammals: California Myotis; Big Brown Bat; Eastern Gray Squirrel; Eastern Fox Squirrel; Western Gray Squirrel; Douglas' Squirrel; Northern Flying Squirrel; Western Pocket Gopher; Deer Mouse; Dusky-footed Woodrat; Bushy-tailed Woodrat; Red Tree Vole; Common Porcupine.

Closely associated birds: Band-tailed Pigeon; Northern Saw-whet Owl; Lewis's Woodpecker; Acorn Woodpecker; Ash-throated Flycatcher; Hutton's Vireo; Western Scrub-Jay; Western Bluebird; Black-throated Gray Warbler; Western Tanager; Spotted Towhee; Bullock's Oriole; Purple Finch; Lesser Goldfinch.

Closely associated reptiles: (None)

Closely associated amphibians: (None)

Habitat Type: Westside Grasslands

Closely associated mammals: Deer Mouse; Gray-tailed Vole; Red Fox.

Closely associated birds: Ring-necked Pheasant; Horned Lark; Vesper Sparrow; Savannah Sparrow; Western Meadowlark.

Closely associated reptiles: Western Pond Turtle.

Closely associated amphibians: (None)

Habitat Type: Westside Riparian – Wetlands

Closely associated mammals: Fog Shrew; Water Shrew; Pacific Water Shrew; Yuma Myotis; Mountain Beaver; American Beaver; Deer Mouse; Dusky-footed Woodrat; White-footed Vole; Water Vole; Muskrat; Nutria; Raccoon; Fisher; Mink; Northern River Otter.

Closely associated birds: Great Blue Heron; Green Heron; Wood Duck; Mallard; Ring-necked Duck; Harlequin Duck; Hooded Merganser; Common Merganser; Ruffed Grouse; Solitary Sandpiper; Spotted Sandpiper; Band-tailed Pigeon; Mourning Dove; Western Screech-owl; Belted Kingfisher; Downy Woodpecker; Willow Flycatcher; Warbling Vireo; Tree Swallow; Northern Rough-winged Swallow; Cliff Swallow; Barn Swallow; American Dipper; European Starling; Yellow Warbler; Black-throated Gray Warbler; Common Yellowthroat; Wilson's Warbler; Yellow-breasted Chat; Bullock's Oriole; Purple Finch; Lesser Goldfinch.

Closely associated reptiles: Western Pond Turtle; Common Garter Snake.

Closely associated amphibians: Northwestern Salamander; Long-toed Salamander; Cope's Giant Salamander; Pacific Giant Salamander; Olympic Torrent Salamander; Columbia Torrent Salamander; Southern Torrent Salamander; Cascade Torrent Salamander; Rough-skinned Newt; Tailed Frog; Western Toad; Pacific Chorus (Tree) Frog; Red-legged Frog; Bullfrog.

Habitat Type: Herbaceous Wetlands

Closely associated mammals: Yuma Myotis; Pallid Bat; American Beaver; Western Harvest Mouse; Deer Mouse; Townsend's Vole; Long-tailed Vole; Muskrat; Nutria; Raccoon; Mink; Northern River Otter.

Closely associated birds: Common Loon; Pied-billed Grebe; Western Grebe; American Bittern; Least Bittern; Great Blue Heron; Great Egret; Snowy Egret; Green Heron; Canada Goose; Trumpeter Swan; American Wigeon; Mallard; Cinnamon Teal; Northern Shoveler; Northern Pintail; Green-winged Teal; Canvasback; Redhead; Lesser Scaup; Bufflehead; Ruddy Duck; Yellow Rail; Virginia Rail; Sora; American Coot; Greater Yellowlegs; Lesser Yellowlegs; Solitary Sandpiper; Western Sandpiper; Least Sandpiper; Dunlin; Long-billed Dowitcher; Common Snipe; Short-eared Owl; Tree Swallow; Northern Rough-winged Swallow; Barn Swallow; Marsh Wren; Common Yellowthroat; Red-winged Blackbird; Yellow-headed Blackbird.

Closely associated reptiles: Snapping Turtle; Painted Turtle; Western Pond Turtle; Red-eared Slider Turtle; Common Garter Snake.

Closely associated amphibians: Northwestern Salamander; Long-toed Salamander; Rough-skinned Newt; Western Toad; Pacific Chorus (Tree) Frog; Red-legged Frog; Bullfrog.

Habitat Type: Open Water – Lakes, Rivers and Streams

Closely associated mammals: Western Small-footed Myotis; Yuma Myotis; Western Pipistrelle; Townsend's Big-eared Bat; Pallid Bat; American Beaver; Muskrat; Nutria; Mink; Northern River Otter.

Closely associated birds: Western Grebe; Double-crested Cormorant; Great Blue Heron; Great Egret; Canada Goose; Trumpeter Swan; Wood Duck; Eurasian Wigeon; American Wigeon; Northern Shoveler; Northern Pintail; Canvasback; Redhead; Ring-necked Duck; Greater Scaup; Lesser Scaup; Harlequin Duck; Bufflehead; Common Goldeneye; Barrow's Goldeneye; Hooded Merganser; Common Merganser; Ruddy Duck; Osprey; Bald Eagle; American Coot; Black-bellied Plover; Pacific Golden-Plover; Snowy Plover; Semipalmated Plover; Greater Yellowlegs; Lesser Yellowlegs; Semipalmated Sandpiper; Western Sandpiper; Dunlin; Ring-billed Gull; California Gull; Herring Gull; Glaucous Gull; Vaux's Swift; Belted Kingfisher; Purple Martin; Tree Swallow; Northern Rough-winged Swallow; Bank Swallow; Cliff Swallow; Barn Swallow; American Dipper.

Closely associated reptiles: Snapping Turtle; Painted Turtle; Western Pond Turtle; Red-eared Slider Turtle.

Closely associated amphibians: Tiger Salamander; Northwestern Salamander; Long-toed Salamander; Rough-skinned Newt; Western Toad; Pacific Chorus (Tree) Frog; Red-legged Frog; Bullfrog.

Habitat Type: Agriculture, Pastures and Mixed Environs

Closely associated mammals: Virginia Opossum; Big Brown Bat; Eastern Fox Squirrel; Northern Pocket Gopher; Camas Pocket Gopher; Deer Mouse; Bushy-tailed Woodrat; Gray-tailed Vole; House Mouse; Raccoon.

Closely associated birds: Great Blue Heron; Canada Goose; Trumpeter Swan; American Wigeon; Cinnamon Teal; Red-tailed Hawk; Ring-necked Pheasant; Killdeer; Solitary Sandpiper; Dunlin; Common Snipe; Rock Dove; Mourning Dove; Barn Owl; Short-eared Owl; Northern Shrike; American Crow; Barn Swallow; European Starling; Vesper Sparrow; Savannah Sparrow; Grasshopper Sparrow; Lazuli Bunting; Western Meadowlark; Brewer's Blackbird; Brown-headed Cowbird; House Finch; House Sparrow.

Closely associated reptiles: Western Pond Turtle.

Closely associated amphibians: (None)

APPENDIX C
BIRD SPECIES FOUND IN LUCKIAMUTE RIVER AND LOWER SOAP CREEK DRAINAGES

The following list is based primarily on reports filed in the BirdNotes database (www.birdnotes.net), which contains 118 survey reports filed by seven birders for Luckiamute Landing, and a much smaller number of reports (about six) for the Vanderpool Tract. Comments to the right of the species names are based on personal observations and, in a few cases, information provided by other birders.

Key
I = Introduced species.
L = Detected at Luckiamute Landing greenway, 1998-present.
V = Detected at Vanderpool Tract, 2003-present.
\+ = Evidence of breeding observed.
? = Possible breeding (detected in area during nesting season)
* = T/E or species of concern.

Anseriformes

L	Greater White-fronted Goose	Migrant flocks overhead in spring.
	Snow Goose	Occasional to area in winter.
VL+	Canada Goose	Adults with young on river.
L	Cackling Goose	Large flocks in winter.
*	Trumpeter Swan	Flock of 40-50 regularly winters within two miles.
L	Tundra Swan	Occasional flocks in winter.
L+	Wood Duck	Pairs checking natural cavities in forest.
L	Gadwall	Uncommon in winter.
	Eurasian Wigeon	Occasional to area with wigeon flocks.
L	American Wigeon	Flocks common in winter.
VL+	Mallard	Adults with young on river.
L	Blue-winged Teal	Rare migrant.
L	Cinnamon Teal	Nests nearby.
L	Northern Shoveler	Flocks common in winter.
VL	Northern Pintail	Flocks common in winter.
VL	Green-winged Teal	Flocks common in winter.
VL	Ring-necked Duck	Common in winter.
L	Bufflehead	Common in winter along river.
	Hooded Merganser	Nests nearby.
L+	Common Merganser	Adults with young on river.

Galliformes		
I L	Ring-necked Pheasant	A few young birds seen may have been planted *e.g.* by hunters.
L+	Ruffed Grouse	Males heard drumming in spring two years.
I L+	Wild Turkey	A flock introduced by ODFW in the late 1990s has mainly left the area, but one male was heard calling in spring one year.
VL+	California Quail	Fledglings with adults seen most years.
Pelecaniformes		
VL	Double-crested Cormorant	Common along river in winter.
Ciconiiformes		
VL?	Great Blue Heron	May nest nearby along river.
VL	Great Egret	Uncommon in winter.
?	Green Heron	Nest nearby.
VL+	Turkey Vulture	Fledglings seen.
Falconiformes		
VL+*	Osprey	Nests with young observed yearly.
L?*	Bald Eagle	May nest nearby some years.
L?	Northern Harrier	Adults seen flying with juveniles.
L?	Sharp-shinned Hawk	Nests nearby.
L?	Cooper's Hawk	Nests nearby.
*	Northern Goshawk	Rare visitor to valley.
	Red-shouldered Hawk	Expanding range, may now nest at E.E. Wilson.
VL+	Red-tailed Hawk	Territorial behavior around nests.
L	Rough-legged Hawk	Occasional in winter.
L	Golden Eagle	Rare winter visitor.
VL?	American Kestrel	Nests nearby.
L	Merlin	Uncommon but regular winter visitor.
L*	Peregrine Falcon	Occasional winter visitor.
	Prairie Falcon	Occasional winter visitor to neighborhood.
Gruiformes		
	Virginia Rail	Nests nearby.
	Sora	May nest in neighborhood.
	Sandhill Crane	Rare/occasional as migrants through area.
Charadriiformes		
VL+	Killdeer	Downy chicks seen on gravel bars, flocks in winter.
L	Greater Yellowlegs	Migrants on ponds and along river.
	Lesser Yellowlegs	Migrants regular nearby.
	Solitary Sandpiper	Migrants regular nearby.
VL+	Spotted Sandpiper	Nest with eggs found on gravel bar.
L	Western Sandpiper	Migrants on muddy areas and along river's edge.

L	Least Sandpiper	Migrants on muddy areas and along river's edge.
L	Dunlin	Flocks in open areas in winter.
	Long-billed Dowitcher	Flocks nearby in winter & migration.
L	Wilson's Snipe	Flocks in migration, may nest nearby.
L	Mew Gull	Flocks to valley in winter.
	Ring-billed Gull	Flocks to valley in winter.
	California Gull	Flocks to valley in winter.
	Herring Gull	Uncommon in valley in winter.
	Thayer's Gull	Uncommon in valley in winter.
	Glaucous-winged Gull	Uncommon in valley in winter.

Columbiformes

I L	Rock Pigeon	Flock seen once, likely from nearby residence/farm.
VL?	Band-tailed Pigeon	Regularly seen feeding on elderberries in summer but most likely visiting from coast range foothills.
VL?	Mourning Dove	Flocks of up to 90 use bottomlands in winter.

Strigiformes

L	Barn Owl	Dead bird found once.
L+	Western Screech-Owl	Territorial birds calling.
VL+	Great Horned Owl	Owlets seen in nest.
*	Short-eared Owl	Winters occasionally in vicinity.
L	Northern Saw-whet Owl	Detected once in winter.

Caprimulgiformes

L+*	Common Nighthawk	Booming displays over gravel bars in late spring.

Apodiformes

VL?	Vaux's Swift	Nests in chimneys nearby, could use natural snags.
	Anna's Hummingbird	Occasional visitor to neighborhood.
	Calliope Hummingbird	Occasional migrant in neighborhood.
VL+	Rufous Hummingbird	Female making repeated trips to presumed nest.

Coraciiformes

VL	Belted Kingfisher	Pair seen guarding nest burrow in river bank.

Piciformes

*	Lewis' Woodpecker	Now a rare winter visitor to Willamette Valley, may have occurred here historically.
	Acorn Woodpecker	Colonies nearby, could use oaks at Vanderpool tract.
VL+	Red-breasted Sapsucker	Pairs & fledglings observed.
VL+	Downy Woodpecker	Adults tending fledglings observed.
L+	Hairy Woodpecker	Adults tending fledglings observed.
VL+	Northern Flicker	Seen entering cavity.
L+	Pileated Woodpecker	Territorial birds, pair in courtship display.

Passeriformes

VL+	Western Wood-Pewee	Adults tending fledglings.
L?*	Willow Flycatcher	Territorial birds present in nesting season.
L	Hammond's Flycatcher	Uncommon migrant.
L	Dusky Flycatcher	Rare migrant.
L?	Pacific-slope Flycatcher	Territorial birds present in nesting season.
	Northern Shrike	Uncommon winter visitor to neighborhood.
L?	Cassin's Vireo	Territorial birds present in nesting season.
L?	Hutton's Vireo	Territorial birds present in nesting season.
L?	Warbling Vireo	Migrant flocks in spring.
L?	Red-eyed Vireo	Territorial birds present in nesting season two years.
VL+	Steller's Jay	Courtship, juveniles observed.
VL?	Western Scrub-Jay	Present year-round.
VL?	American Crow	Flocks seen regularly.
VL?	Common Raven	
?*	Horned Lark	Up to 20 pairs of the imperiled ssp. strigata nest within two miles of area.
*	Purple Martin	Rare visitor, may have occurred historically.
VL+	Tree Swallow	Seen entering natural cavity in snag.
VL?	Violet-green Swallow	Nests nearby.
VL+	Northern Rough-winged Swallow	Seen around nesting burrows in riverbanks.
VL?	Cliff Swallow	Nests nearby.
VL?	Barn Swallow	Nests nearby.
VL+	Black-capped Chickadee	Fledglings seen.
L	Chestnut-backed Chickadee	Occasionally seen with Black-capped flocks.
L+	Bushtit	Fledglings seen.
L?	Red-breasted Nuthatch	Occasional.
VL?	White-breasted Nuthatch	Nests in neighborhood.
L+	Brown Creeper	Pairs, fledglings seen.
VL+	Bewick's Wren	Fledglings observed.
L?	House Wren	Singing birds during nesting season.
VL	Winter Wren	Common in winter.
VL?	Marsh Wren	Uncommon in winter, nests nearby.
VL	Golden-crowned Kinglet	Common/abundant in winter.
VL	Ruby-crowned Kinglet	Common/abundant in winter.
VL?	Western Bluebird	Nests nearby.
L	Townsend's Solitaire	Rare transient in migration.
VL+	Swainson's Thrush	Abundant in summer; territorial birds, fledglings seen.
VL	Hermit Thrush	Uncommon in winter.
VL+	American Robin	Nests observed.
VL	Varied Thrush	Common in winter.
	Wrentit	Expanding range, now regular to east edge of E.E. Wilson Wildlife Area.
IVL+	European Starling	Seen using cavities in artificial structures.

VL	American Pipit	Regular wintering flocks in open areas.
VL+	Cedar Waxwing	Juveniles with parents observed.
L?	Orange-crowned Warbler	Singing birds present in nesting season.
L	Nashville Warbler	Occasional migrant.
VL?	Yellow Warbler	Singing birds present in nesting season.
VL	Yellow-rumped Warbler	Uncommon in winter, common as migrant.
L?	Black-throated Gray Warbler	Singing birds present in nesting season.
L	Townsend's Warbler	Occasional in winter.
L	Hermit Warbler	Occasional migrant.
L?	MacGillivray's Warbler	Singing birds present in nesting season.
VL+	Common Yellowthroat	Fledglings observed.
L?	Wilson's Warbler	Common as migrant, possible breeding bird.
*	Yellow-breasted Chat	Nests nearby.
L?	Western Tanager	Singing birds present in nesting season.
VL+	Spotted Towhee	Fledglings seen.
L	Chipping Sparrow	Occurs as regular migrant; may nest at Coffin Butte.
L+*	Vesper Sparrow	Up to five pairs, singing birds & fledglings observed some years, presumably of endemic subspecies.
L+	Savannah Sparrow	Singing birds, fledglings observed.
VL	Sooty Fox Sparrow	Common in winter.
VL+	Song Sparrow	Singing birds, fledglings observed.
VL	Lincoln's Sparrow	Uncommon to moderately common in winter.
L	Swamp Sparrow	Occasional in winter.
VL	White-throated Sparrow	Uncommon in winter.
VL+	White-crowned Sparrow	Singing birds, fledglings observed.
VL	Golden-crowned Sparrow	Common to abundant in winter.
VL?	Dark-eyed Junco	Common to abundant in winter, a few may breed.
VL+	Black-headed Grosbeak	Singing birds, fledglings observed.
L?	Lazuli Bunting	Singing males present some years.
L?	Red-winged Blackbird	Occasional flocks, nests nearby.
L	Western Meadowlark	Flocks regularly use open areas in winter, a few thought to have nested nearby.
VL?	Brewer's Blackbird	Nests nearby.
VL+	Brown-headed Cowbird	Fledglings observed.
	Bullock's Oriole	Nests nearby, should be expected in greenway.
VL?	Purple Finch	Uncommon/occasional in winter.
VL+	House Finch	Pair seen using cavity.
	Red Crossbill	Rare visitor as flocks to valley.
L	Pine Siskin	Common to abundant in winter.
L?	Lesser Goldfinch	Regular flock.
VL+	American Goldfinch	Singing birds, fledglings observed.
L	Evening Grosbeak	Occasional visitor.
I	House Sparrow	Invasive species known to nest around human habitations nearby, but thus far not recorded at Luckiamute Landing.