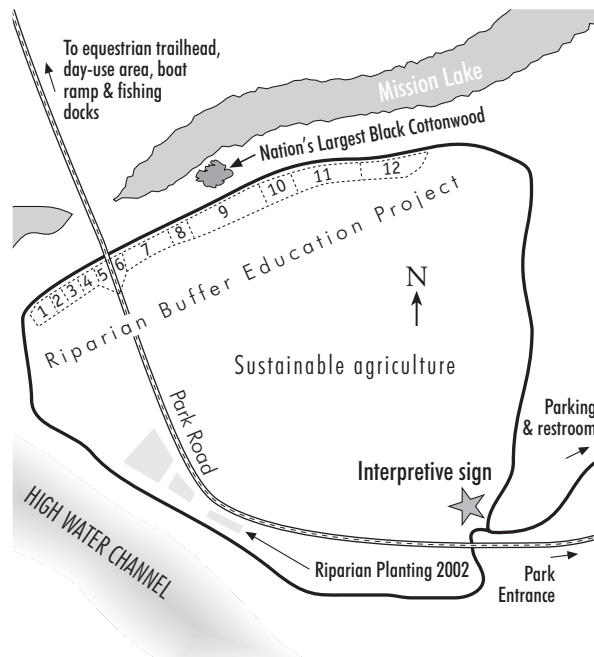


## Project history & description

Participants at the 1998 Willamette Confluence Event developed the idea for a community restoration project on public land to help restore the health of the Willamette River Basin and provide a basis for watershed restoration, public education and demonstration planting. They chose Willamette Mission State Park as the project site, and staff from the Marion Soil and Water Conservation District and Mahonia Nursery designed a project that demonstrates a dozen different ways to plant landscapes.

On March 6, 1999, more than 250 volunteers from the region gathered at the park to plant thousands of trees, shrubs and flowers. The Willamette Restoration Initiative and the Oregon Parks and Recreation Department coordinated the event. Before the buffer planting, the site was managed as farmland.

## Trail map



The project was designed to restore riparian vegetation along the banks of an oxbow lake that was once the main channel of the Willamette River. The benefits of the project include shade (to lower the water temperature for fish), improved wildlife habitat, streambank stabilization, retention and filtering of surface water runoff, and increased recreation.

The dozen plots demonstrate a variety of restoration techniques, ranging from riparian forest plantings to methods that could be used on a farm or around a residence. The project now serves as an educational display for different planting styles and native vegetation types, and offers a chance to see the site of Jason Lee's original mission and plant materials that were significant to Native Americans.

## Riparian Buffer Project key

- 1 Upland Species
- 2 Native American Cultural Riparian Planting
- 3 Native American Cultural Upland Planting
- 4 Gallery Forest
- 5/6 Wildflower Meadow
- 7 Gallery Forest
- 8 Power Line Planting
- 9 Randomized CREP Planting
- 10 Transitional Planting
- 11 Randomized Commercial Planting
- 12 Row-Type Commercial Planting

## Definitions

### Watershed

The total area above a point on a stream that contributes water to the stream's flow.

### Alluvium

Sediment deposited by flowing water, as in a riverbed, floodplain or delta. Also used to describe deposits of earth, sand, gravel and other transported matter made by rivers, floods or other causes, upon land not permanently submerged beneath lakes or seas.

### Riparian buffer

Land next to streams, lakes and wetlands managed for perennial vegetation (grass, shrubs, trees) to enhance and protect aquatic resources from adverse impacts of agricultural or urban practices. The benefits of a riparian buffer include increased wildlife habitat, streambank stability, flood protection, aquatic habitat, runoff filtering, and visual diversity.

*The Riparian Buffer Education Project was coordinated by the Willamette Restoration Initiative and the Oregon Parks and Recreation Dept. Developed by participants of the Willamette Confluence.*



[www.oregonstateparks.org](http://www.oregonstateparks.org)

This publication is available in alternative formats upon request. Write to Oregon Parks and Recreation Department, 1115 Commercial St. NE, Suite 1, Salem, OR 97301-1002; or call 503-378-6305 (for the hearing impaired: 1-800-735-2900). 73410-8092 05/03



Nature  
HISTORY  
Discovery

## Willamette Mission State Park

### Riparian Buffer Education Project Self-Guided Tour



Willamette Mission  
10991 Wheatland Rd NE  
Gervais OR 97026  
503-393-1172

## 1 Upland Species

This is an alluvial knoll, which was planted as an oak, maple, and ash forest.

The oak needs good drainage, therefore is planted on the top of the knoll. The maple is planted on the slope and the ash, which is water tolerant, is planted at the bottom. As these trees grow the grass between the trees will give way to small shrubs.

Oregon Ash



Oregon White Oak



## 2 Native American Cultural Riparian Planting

This is a swale area where water stands part of the winter and functions as a channel for floodwaters to and from the Willamette River. This is established as a

wetland prairie. Redosier dogwood is on the sloped fringes mixing with ash. The bottom is black twinberry, tufted hair grass, camas and wapato. Camas and wapato are culturally significant in the valley's Native American culture for food resources.

Redosier Dogwood Flower



Black Twinberry



## 3 Native American Cultural Upland Planting

This is a knoll and flood plain area of old river deposits. This area is representative of food

resources for Native Americans. The planting includes dogwood, Douglas spirea, cascara, Indian

plum, red elderberry, black hawthorne, salal and camas. The area will blend with adjacent areas with ash, maple, fir, cottonwood and willow. Oak is planted on the higher parts of the alluvium deposit.

Indian Plum



Cascara



## 4 Gallery Forest



Red Elderberry

The alluvium plateau planting is representative of the gallery forests which covered much of the areas near rivers and streams. The historic record describes the composition of this riparian forest as cottonwood, ash, maple, fir and willow. This area is planted to those trees in a random pattern. The understory is composed of shrubs such as Oregon hazel, Redosier dogwood and Oregon grape. This planting is the same as Area 7.



Redosier Dogwood

## 5 & 6 Wildflower Meadow

The alluvium plateau adjacent to the access road is representative of meadow. This area is planted to species typical of meadows near riparian areas. Tufted hair grass, camas, fescue, sunflowers, and wildflower mix are included in this planting. As the Gallery Forest As the Gallery Forest grows, visitors will get feel of awe that settlers had as they walk from prairie meadow to forest of giant trees. That same feeling exists today as you walk up to the black walnut trees in Area 7 and the giant black cottonwood in Area 8.



Fescue



Camas

## 7 Gallery Forest

The alluvium plateau planting is representative of the gallery forests which covered much of the areas near rivers and streams. The historic record describes the composition of this riparian forest as ash, maple, cottonwood, fir and willow. This area is planted to those trees in a random pattern. The understory is composed of shrubs such as Oregon hazel, Redosier dogwood and Oregon grape. This planting is the same as Area 4.

## 8 Power Line Planting

This area is where the human development meets nature. The overhead power line restricts the vertical height that vegetation can grow. The planting is prairie meadow of tufted hair grass, camas, wild iris, wildflower mix, fescue, and wild rose to separate riparian area from cultivated field.



Black Cottonwood

see the largest black cottonwood tree in the United States from here.

## 9 Randomized CREP Planting

The area is a lower elevation alluvium plateau than those areas to the east or west. Much of this area is the same elevation as



Black Hawthorne

Area 2. These lower areas are wetter and more frequently flooded. The plantings are willow and ash in the lowest areas, transitioning up-slope to a mixture of cottonwood, alder and black hawthorne.



Willow

Note: CREP refers to the Conservation Reserve Enhancement Program, a joint federal and state program that helps landowners establish riparian plantings to restore freshwater salmon and trout habitat.

## 10 Transitional Planting

This is a transition area on the alluvial plateau that goes from wet to dry. The planting is ash and alder toward Area 9 (east), with alder and fir toward Area 11 (west).



Red Alder



Douglas fir

## 11 Randomized Commercial Planting

This area represents a riparian area that can be used for economic benefits. The area is five feet higher than Area 9 in elevation. The area represents a random planting of a riparian forest buffer that meets the specifications of the U.S. Department of Agriculture, Natural Resources Conservation Service.



Ponderosa Pine



Bigleaf Maple

The plantings are fir, cottonwood, cedar, pine and maple. The planting density was 450 trees per acre. This is considered a low maintenance riparian forest buffer after it is established.

## 12 Row-Type Commercial Planting

This area represents a riparian area that can be used for economic benefits. The area is similar in drainage and elevation as Area 11. This area represents pattern planting of a riparian forest buffer that meets the specifications of the US Department of Agriculture, Natural Resources Conservation Service. The plantings are fir, cedar, pine, cottonwood and black walnut. The row spacing will allow for mowing at appropriate times and tree limb pruning to provide for the best quality wood. Commercial thinning is expected in 30 years from March 1999, when the plot was planted.



Western Redcedar



Black Walnut

*Thank you for visiting the Willamette Mission State Park riparian buffer education project! For more information about planting and designing your own riparian buffer, contact the Marion Soil & Water Conservation District at (503) 391-9927.*