

# **Lower Coast Fork Willamette River Oregon Watershed Assessment**

## **Chapter 1 Introduction**

### **1.1 Scope and Purpose**

The purpose of this assessment is to characterize watershed conditions in the Lower Coast Fork of the Willamette River watershed basin (LCFW) and present current and historic information on the physical, biological and cultural landscape using the Oregon Watershed Assessment Manual as a model. Information from the assessment will be used to evaluate potential for improvement of watershed condition, and assist the Coast Fork Willamette Watershed Council in identification and prioritization of opportunities for watershed restoration. This information is, in some instances, summarized by subbasin. The maps in this assessment show the extent and general location of certain watershed features and/or human impacts, but they should not be considered precise enough to single out any specific piece of property.

### **1.2 Watershed Assessment Approach**

The assessment followed the framework outlined in the Oregon Watershed Enhancement Board's Watershed Assessment Manual (Watershed Professional Network, 1999). The assessment primarily used existing information, relying on archived data, aerial photography, published reports and other documents. This existing information was supplemented by a Council-sponsored stream habitat inventory of the Coast Fork Willamette River, Bear Creek, Hill Creek and portions of Camas Swale Creek and Gettings Creek.

### **1.3 Organization of The Document**

The following assessment sections organize the document:

- Introduction, Area & Ownership
- Historical Climate and Geology
- Hydrology and Water Use
- Channel Habitat Type
- Riparian and Habitat Conditions
- Wetland Conditions

- Sediment Sources
- Water Quality
- Stream Channel Modifications
- Fish & Wildlife

#### 1.4 The Watershed Assessment Area

This watershed assessment focuses on the Lower Coast Fork Willamette River, a fifth field hydrologic unit (see map figures 1,2 & 3) that is composed of five sixth field watersheds as defined by the USGS (see map figure 4). By definition, a watershed: “is the area of land draining into a stream at a given location” (Chow et. al, 1988). Applying this definition to the Lower Coast Fork Willamette River Basin results in a different sixth field watershed configuration (map figure 5). For purposes of this assessment this modified configuration will be referenced except where indicated otherwise. This watershed assessment focuses on the Lower Coast Fork Willamette River from the confluence with the Row River downstream to the confluence with the Middle Fork Willamette River and includes the tributary sixth field watersheds of:

- Gettings Creek
- Hill Creek
- Camas Swale Creek
- Bear Creek
- Papenfus Creek
- Wild Hog Creek

The assessment area encompasses approximately 139 square miles and 88,970 acres. It is located at the northern edge of the Coast Fork Willamette Watershed and is nestled between the urban growth boundaries of Eugene and Springfield and Cottage Grove. The urban growth boundary of Creswell is the only city located within the assessment area.

The watershed ranges in elevation (above sea level) from 508 feet at the confluence with the Middle Fork Willamette River to 3,366 feet at Bear Mountain saddle. The City of Creswell is located at 590 feet elevation. Table 1-1 shows general characteristics for each subbasin and table 1-2 shows the elevation distribution as a percent of total area.

Table 1-1. Lower Coast Fork Willamette Sub-basin Watersheds

Sixth Field	Area (sq. mi.)	Mean Elev. (feet)	Min Elev. (feet)	Max Elev. (feet)	Mean Annual Precip. (inches)
Gettings	16.7	1385	577	2881	49
Hill	23.8	705	492	1768	44.5
Camas Swale	43.4	719	495	2024	43

Bear Creek	27.5	1093	492	3356	44.8
Papenfus	13.6	643	433	2385	40
Wild Hog	13.9	518	433	1220	40
<b>Total</b>	<b>138.9</b>				

Table 1-2 Elevation Distribution

Elevation (feet above sea-level)	508 - 773	773 - 1088	1088 - 2166	2166 - 3366
Percent Area of WS at Elevation	50%	25%	20%	5%

Significant geographic formations are listed in table 1-3.

Table 1-3 Significant Geographic Formations

	Elevation (ft)
Sellers Butte	1,086
Short Mountain	1,147
Mount Pisgah	1,528
Spencers Butte	2,065
Cougar Mountain	2,422
Prune Hill	2,690
Bear Mountain	3,698

While Bear Mountain creates a divide between watershed boundaries its geomorphology has created a saddle approximately ¼ mile to the NW of its peak which divides the drainage basin. The peak is not within the assessment boundary.

There are two reservoirs located upstream of the assessment area. The reservoirs are operated by the Army Corp of Engineers (ACOE) and are important factors to be considered in the development of an integrated plan for management of resources in the LCFW watershed.

The primary purpose of the ACOE system of dams and reservoirs is to provide flood control and navigation. Recreation and irrigation are secondary purposes of the reservoir system. Together the system of dams regulates approximately 84% of the surface water flow entering the LCFW basin at the confluence with the Row River and approximately 56% of the entire Coast Fork Willamette River Basin as measured at the Goshen Gage.

*Cottage Grove Dam & Lake* is located on the Coast Fork Willamette at river mile 29.7 and was operational in water year 1942. The reservoir covers 1,158 acres. At full pool the elevation is 791 feet and has a storage capacity of 32,940 acre-feet.

*Dorena Dam & Lake* is located on the Row River at river mile 7.6 upstream of the river's confluence with the Coast Fork Willamette River at river mile 21 and was operational in

water year 1949. The reservoir covers approximately 1,835 acres. At full pool its elevation is 835 feet and has a storage capacity of 77,500 acre-feet.

### 1.5 Land Ownership and Uses

The assessment area has a mix of public and private lands (see map figure 8). The ownership patterns vary by watershed and are shown in table 1-4. Private lands are the largest ownership category. Camas Swale has the largest concentration of private land ownership. Private Industrial timberlands are the second largest ownership category. Bear Creek has the largest concentration of industrial forestlands.

Table 1-4 Ownership

	Area (acre)	Private Industrial (acre)	BLM (acre)	Mt Pisgah (acre)	Short Mtn (acre)	Spencers Butte (acre)	Govt non-BLM (acre)	Private (acre)
<b>Sixth Field</b>								
<b>Wild Hog</b>	8,896	0	0	0	0	0	277	8,619
<b>Papenfus</b>	8,704	1,146	104	1,246	0	0	0	6,208
<b>Hill</b>	15,232	1,193	674	0	164	0	0	13,201
<b>Camas Swale</b>	27,776	2,890	1,615	0	691	127	104	22,349
<b>Bear Creek</b>	17,600	5,913	2,411	0	0	0	0	9,276
<b>Gettings</b>	10,688	5,152	116	0	0	0	0	5,420
<b>Total</b>	<b>88,896</b>	<b>16,294</b>	<b>4,920</b>	<b>1,246</b>	<b>855</b>	<b>127</b>	<b>381</b>	<b>65,073</b>
		<b>18.33%</b>	<b>5.53%</b>	<b>1.40%</b>	<b>0.96%</b>	<b>0.14%</b>	<b>0.43%</b>	<b>73.20%</b>