

SWCD	Acres	SWCD	Acres
Tillamook	547,538	Polk	1,769
Yamhill	38,122	Lincoln	84
Washington	17,555		



### Introduction

The Wilson/Trask/Nestucca 8-Digit Hydrologic Unit Code (HUC) subbasin is comprised of 605,000 acres, of which 65 percent is public forestland. Ninety percent of the subbasin is in Tillamook County, and the other ten percent is divided among four other counties. Thirteen percent of the private land is used as pastureland, grassland, and hayland and includes commercial dairy and beef production. There are 147 dairies in the subbasin. Resource concerns associated with the pastureland and livestock include soil compaction, streambank erosion, surface water contamination, unreliable profits, and the need for timely technical assistance

There are 413 farms and ranches in the Wilson/Trask/Nestucca subbasin. More than 80 percent are less than 180 acres in size, and many of the operators are new landowners seeking a rural lifestyle. The remaining agricultural operations are viable forest or commercial dairy operations.

One NRCS service center, the Tillamook Soil and Water Conservation District, the Northwest Oregon Resource Conservation and Development (RC&D) office, and other local organizations provide conservation assistance in the subbasin.

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[Land Use Map & Precipitation Map](#)

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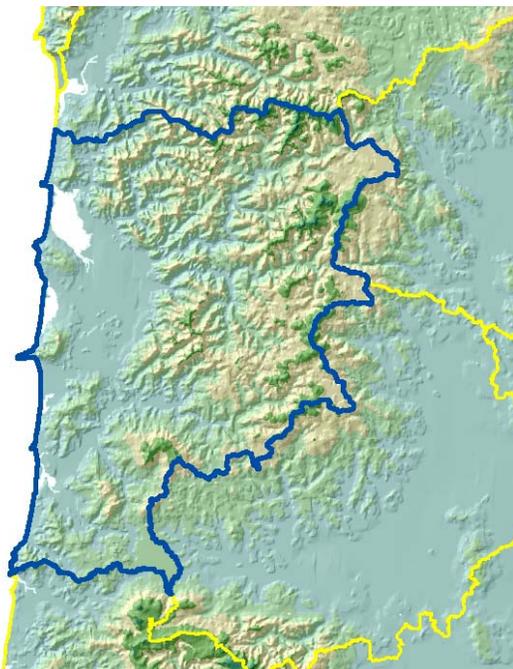
[Resource Concerns](#)

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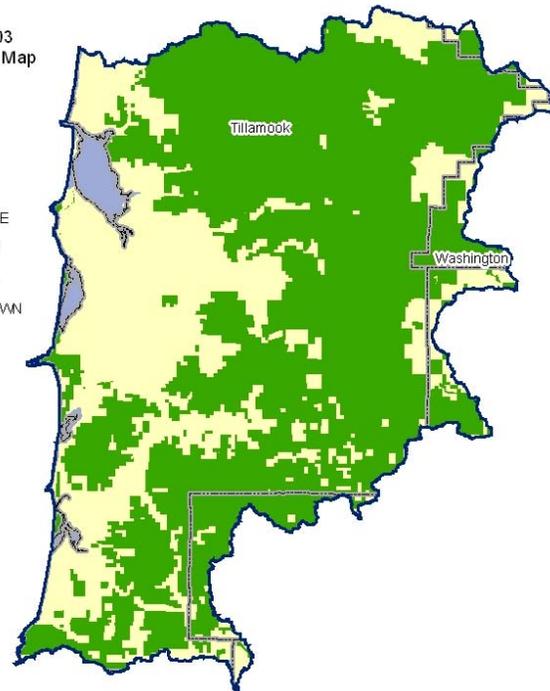
### Relief Map



17100203  
Ownership Map

Legend

-  PRIVATE
-  PUBLIC
-  TRIBAL
-  UNKNOWN



**Physical Description**

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**ALL NUMBERS IN THIS PROFILE ARE FOR OREGON ONLY**

Land Cover/Land Use (NLCD <sup>2</sup> )	Ownership - (2003 Draft BLM Surface Map Set <sup>1</sup> )						Totals	%
	Public		Private		Tribal			
	Acres	%	Acres	%	Acres	%		
Forest	389,100	64%	177,000	29%	*	---	566,100	94%
Grain Crops	0	0%	0	0%	0	0%	0	0%
Conservation Reserve Program Land <sup>a</sup>	0	0%	0	0%	0	0%	0	0%
Grass/Pasture/Hay	3,100	1%	23,900	4%	0	0%	27,000	4%
Orchards/Vineyards	0	0%	0	0%	0	0%	0	0%
Row Crops	*	---	*	---	0	0%	*	---
Shrub/Rangelands	*	---	*	---	0	0%	*	---
Water/Wetlands/Developed/Barren	*	---	5,800	1%	0	0%	7,300	1%
<b>Oregon HUC Totals <sup>b</sup></b>	<b>394,300</b>	<b>65%</b>	<b>207,800</b>	<b>34%</b>	<b>0</b>	<b>0%</b>	<b>602,100</b>	<b>100%</b>

\*: Less than 1 percent of total acres. See below for special considerations.

a: Estimate from Farm Service Agency records and includes CRP/CREP.

b: Totals are approximate due to rounding and small unknown acreages.

**Special Considerations for this 8-Digit HUC:**

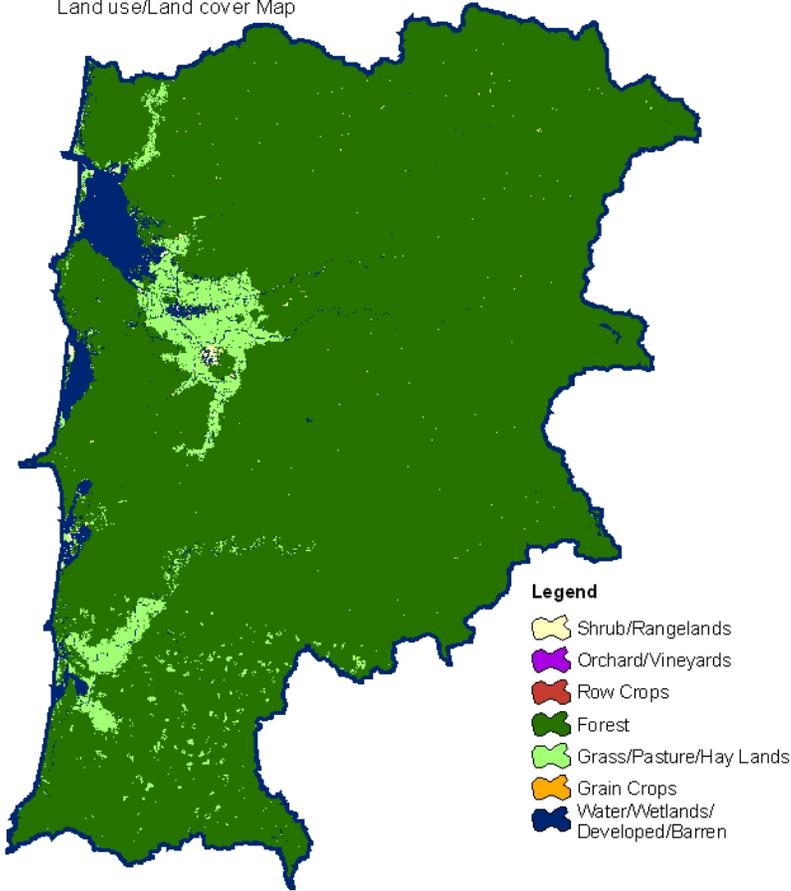
- Approximately 73 percent of the private forestland is under industrial forest ownership (OSU, Forestry Sciences Laboratory).
- Pasture includes commercial dairy and beef operations as well as small farms and ranchettes.
- Hayfields commonly are green-chopped for silage.
- Minor acres of specialty crops, such as lilies, artichokes, and hydrangeas, are in the watershed.
- Some Christmas trees and hybrid poplars are grown in the watershed.

Irrigated Lands (1997 NR <sup>3</sup> Estimates for Non-Federal Lands Only)	Type of Land	ACRES	% of Irrigated Lands	% of HUC
	Cultivated Cropland	0	0%	0%
	Uncultivated Cropland	0	0%	0%
	Pastureland	2,400	100%	0%
	<b>Total Irrigated Lands</b>	<b>2,400</b>	<b>100%</b>	<b>0%</b>

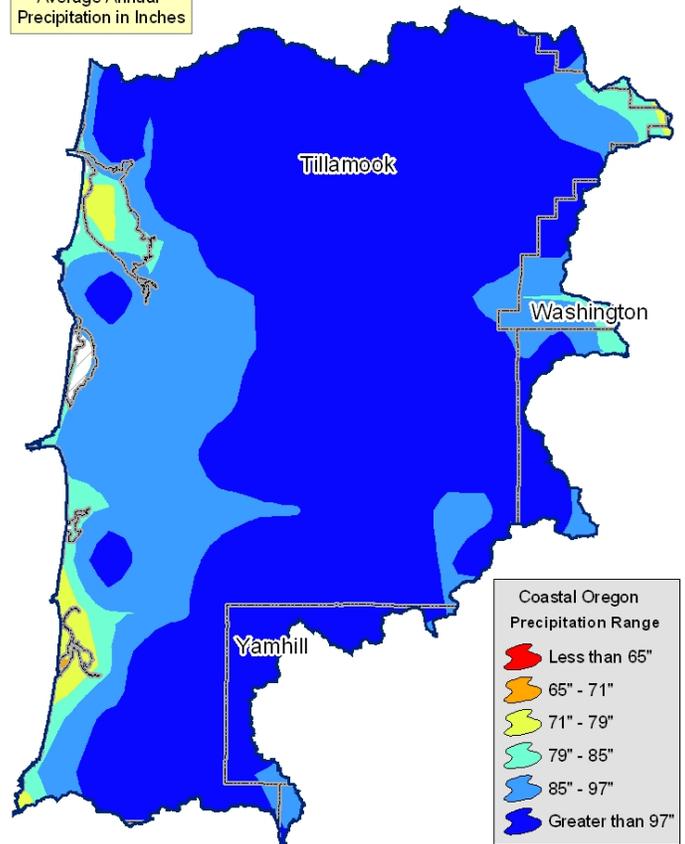
(Continued on the following pages)

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17100203  
Land use/Land cover Map



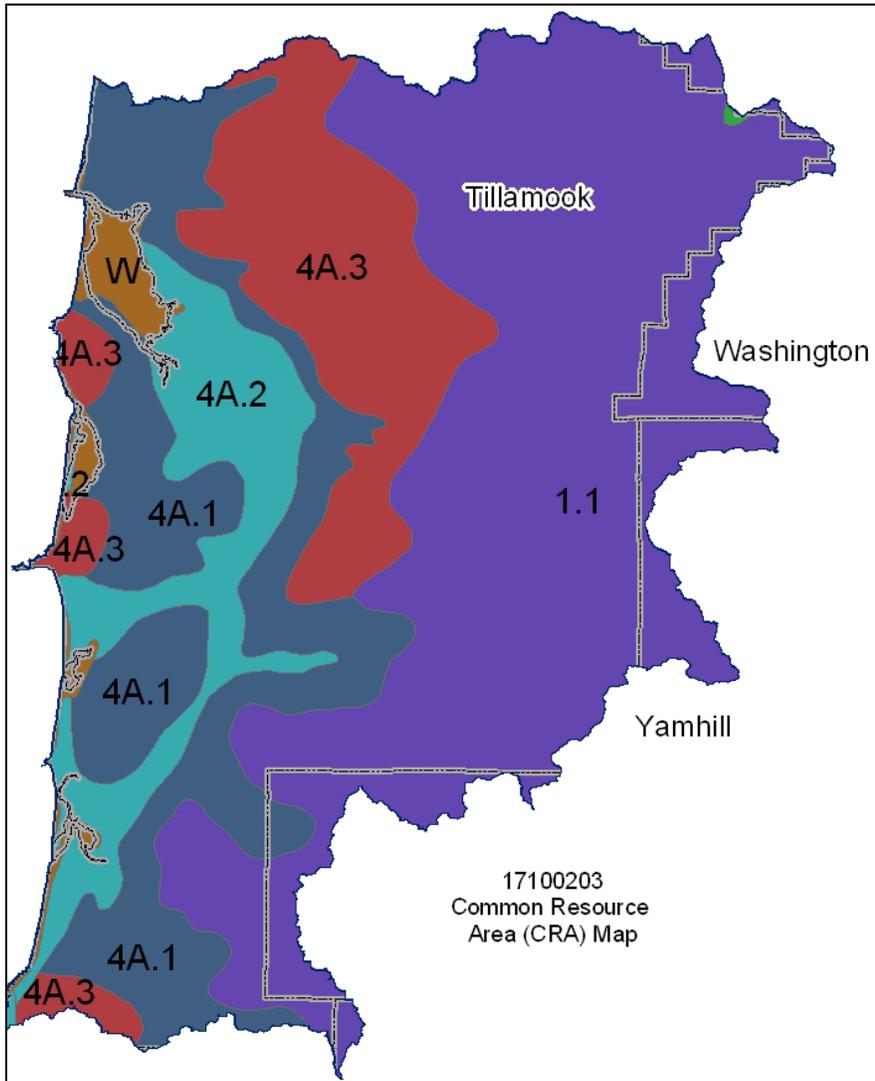
17100203  
Average Annual  
Precipitation in Inches



**Common Resource Area Map**

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Only the major units are described below - for descriptions of all units within the HUC, go to: <http://ice.or.nrcs.usda.gov/website/cra/viewer.htm>



**1.1 - Northern Pacific Coast Range, Foothills, and Valleys - Volcanics:**

This unit is comprised of mountains that consist of basalt and are outside of the "fogbelt." The temperature regime is mesic or frigid with a small area that is cryic, and the moisture regime is udic. The vegetation is Douglas fir and western hemlock.

**4A.1 - Sitka Spruce Belt - Coastal Sedimentary Uplands:**

This unit is comprised of mountains that consist of sedimentary rock and are in the "fogbelt." The temperature regime is isomesic, and the moisture regime is udic. Sitka spruce is present, which separates this unit from unit 1.1.

**4A.2 - Sitka Spruce Belt - Coastal Lowlands:**

This unit is comprised of marine terraces, diked and undiked flood plains, and estuaries. The temperature regime is isomesic, and the moisture regime is udic.

**4A.3 - Sitka Spruce Belt - Coastal Volcanic Uplands:**

This unit is comprised of mountains that consist of basalt and are in the "fogbelt." The temperature regime is isomesic and isofrigid, and the moisture regime is udic. Sitka spruce is present.

### Physical Description – Continued

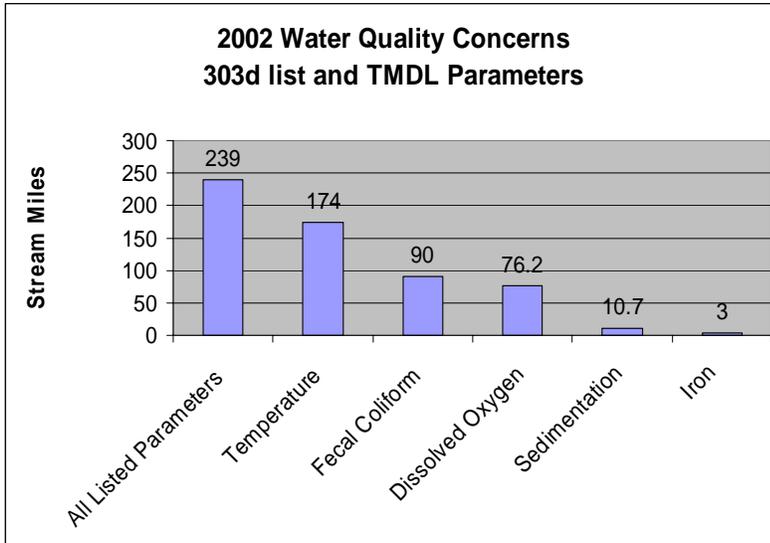
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		ACRES	ACRE-FEET			
<b>Irrigated Adjudicated Water Rights</b> <i>(OWRD<sup>4</sup>)</i>	Surface	6,726	16,815			
	Well	1,079	2,697			
	<b>Total Irrigated Adjudicated Water Rights</b>	<b>7,805</b>	<b>19,513</b>			
<b>Stream Flow Data</b>	USGS 14303600 NESTUCCA RIVER, NEAR BEAVER, OR	<b>Total Avg. Yield</b>	759,806			
		<b>May – Sept. Yield</b>	86,354			
	USGS 14302500 TRASK RIVER, NEAR TILLAMOOK, OR	<b>Total Avg. Yield</b>	706,566			
		<b>May – Sept. Yield</b>	74,600			
	USGS 14301500 WILSON RIVER, NEAR TILLAMOOK, OR	<b>Total Avg. Yield</b>	852,904			
		<b>May – Sept. Yield</b>	83,942			
	OWRD 14301300 MIAMI RIVER, NEAR GARIBALDI, OR	<b>Total Avg. Yield</b>	167,277			
	<b>May – Sept. Yield</b>	21,068				
OWRD 14302700 TILLAMOOK RIVER, NEAR BEAVER, OR	<b>Total Avg. Yield</b>	182,548				
	<b>May – Sept. Yield</b>	19,530				
		MILES	PERCENT			
<b>Stream Data</b> <sup>5</sup>  <i>*Percent of Total Miles of Streams in HUC</i>	Total Miles – Major (100K Hydro GIS Layer)	1,116	---			
	303d/TMDL Listed Streams (DEQ)	239	21%			
	Anadromous Fish Presence (StreamNet)	209	19%			
	Bull Trout Presence (StreamNet)	0	0%			
		ACRES	PERCENT			
<b>Land Cover/Use</b> <sup>2</sup>  Based on a 100-foot stretch on both sides of all streams in the 100K Hydro GIS Layer	Forest	23,756	88%			
	Grain Crops	0	0%			
	Grass/Pasture/Hay	2,076	8%			
	Orchards/Vineyards	0	0%			
	Row Crops	0	0%			
	Shrub/Rangelands – Includes CRP Lands	163	1%			
	Water/Wetlands/Developed/Barren	1,042	4%			
	<b>Total Acres of 100-foot Stream Buffers</b>	<b>27,038</b>	<b>---</b>			
<b>Land Capability Class</b>  <i>(Croplands &amp; Pasturelands Only)</i>  <i>(1997 NRI<sup>3</sup> Estimates for Non-Federal Lands Only)</i>	<b>1</b> – slight limitations	0	0%			
	<b>2</b> – moderate limitations	3,000	13%			
	<b>3</b> – severe limitations	9,200	41%			
	<b>4</b> – very severe limitations	3,800	17%			
	<b>5</b> – no erosion hazard, but other limitations	0	0%			
	<b>6</b> – severe limitations; unsuitable for cultivation; limited to pasture, range, forest	6,600	29%			
	<b>7</b> – very severe limitations; unsuitable for cultivation; limited to grazing, forest, wildlife habitat	0	0%			
	<b>8</b> – miscellaneous areas; limited to recreation, wildlife habitat, water supply	0	0%			
	<b>Total Croplands &amp; Pasturelands</b>	<b>22,600</b>	<b>---</b>			
	<b>Confined Animal Feeding Operations – Oregon CAFO Permit – 12/2004</b>					
<b>Animal Type</b>	<b>Dairy</b>	<b>Feedlot</b>	<b>Poultry</b>	<b>Swine</b>	<b>Mink</b>	<b>Other</b>
<b>No. of Permitted Farms</b>	147	1	0	0	0	1
<b>No. of Permitted Animals</b>	48,061	430	0	0	0	80

## Resource Concerns

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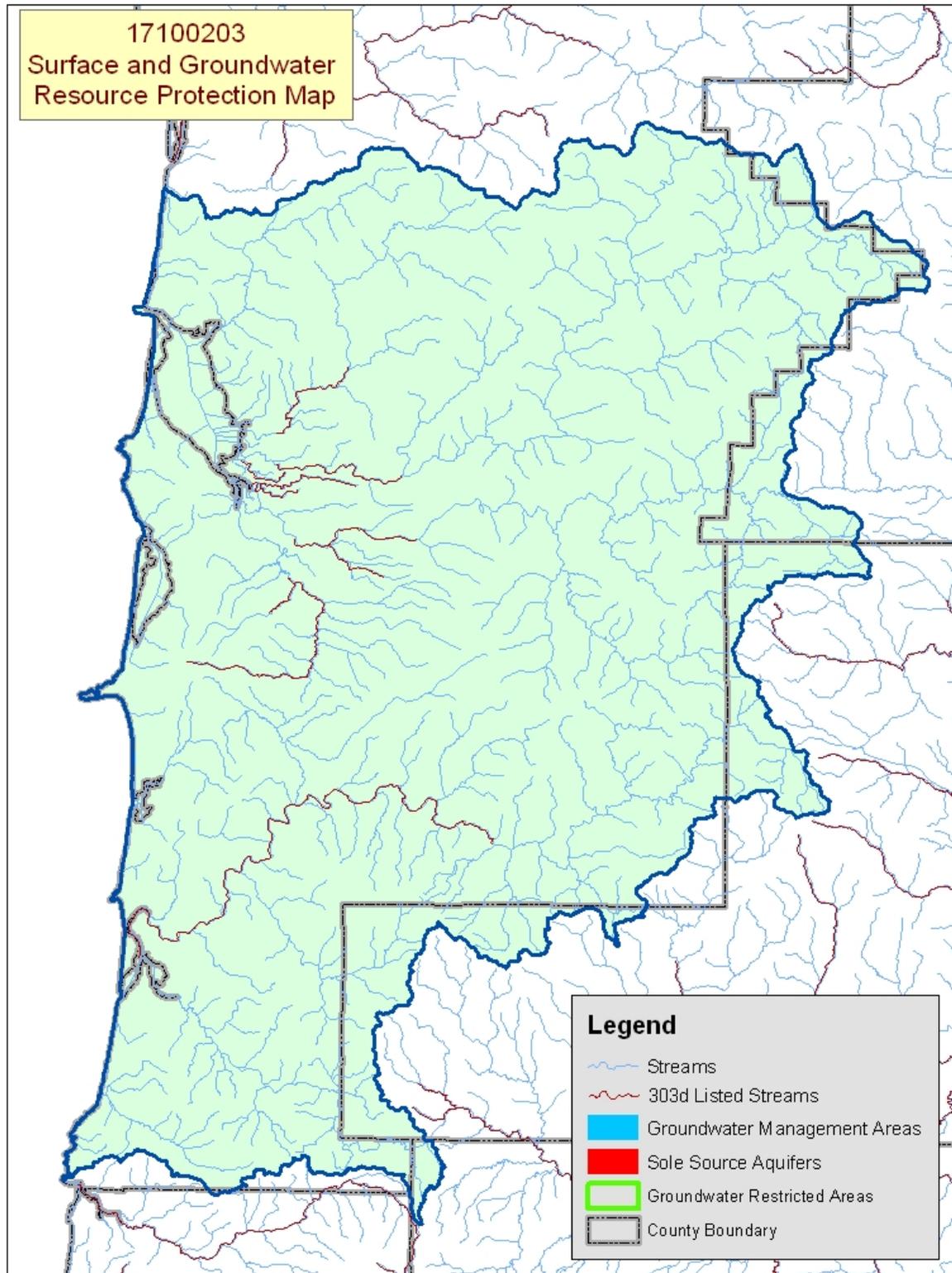
**Tons of Soil Loss by Water Erosion:** Due to the limited amount of non-Federal cropland and pastureland within this HUC, no reliable NRI soil loss estimates are available.



- ❖ Seventy-three percent all of the listed stream miles exceed State water quality standards for temperature. Elevated stream temperatures may be due to inadequate riparian shade, stream channel widening, and other anthropogenic or natural causes.
- ❖ Fecal coliform can be indicative of livestock wastes, but it also is associated with improperly operating onsite sewage disposal systems.
- ❖ Conservation practices that can be used to address these water quality issues include livestock waste management, grazing management, and use of riparian buffers.

Watershed Projects, Plans, Studies, and Assessments			
NRCS Watershed Projects <sup>6</sup>		NRCS Watershed Plans, Studies, and Assessments <sup>7</sup>	
Name	Status	Name	Status
North Side Big Nestucca Lower Tillamook Bay	Active 1986 Active 2001	Lower Tillamook Bay Watershed Plan	Completed 2001
ODEQ TMDL's <sup>8</sup>		ODA Agricultural Water Quality Management Plans <sup>9</sup>	
Name	Status	Name	Status
North Coast Subbasins Tillamook Bay	Completed Completed	North Coast	Completed
OWEB Watershed Council <sup>10</sup>		Watershed Council Assessments <sup>11</sup>	NWPCC Subbasin Plans and Assessments <sup>18</sup>
Nestucca/Neskowin Watershed Council, Tillamook Bay Watershed Council		Tillamook Bay National Estuary Plan, Kilchis Watershed Assessment, Miami River Watershed Assessment	None

(Continued on page 8)



Map Footnote [417](#)

**Resource Concerns - Continued**

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Resource Concerns/Issues by Land Use							
SWAPA +H Concerns	Specific Resource Concern/Issue	Grass\Pasture\ Hay	Grain Crops	Row Crops	Perennial Crops (Orch/Vine/ Berries)	Shrub/Range	Forest
Soil Erosion	Streambank	X					
Soil Condition	Soil Compaction	X					
Water Quantity	Ponding & Flooding	X					
Water Quality, Surface	Nutrients & Organics	X					
	Temperature	X					X
	Pathogens	X					
	Aquatic Habitat Suitability	X					X
Air Quality	Undesirable Odors from Agricultural Sources	X					
Plant Condition	Productivity, Health, & Vigor	X					X
Animal Habitat, Wildlife	Food, Cover, &/or Shelter	X					X
Human, Economics	High Capital/Financial Costs	X					
	High Management Level Required	X					
Human, Political	Inadequate Availability of Cost Share Programs	X					
	Lack of Technical Assistance	X					

**Grass/Pasture/Hay**

- Resource concerns such as soil compaction, nutrients and organics, pathogens, and odors are typical for areas that have a high number of livestock.
- Noxious weeds can be a significant problem, especially on overgrazed pastures.
- Pasture condition overall is good; however, some health and vigor problems may occur because of prolonged grazing and the impact of wildlife.
- Smaller, hobby operations also commonly suffer from inadequate forage management.
- Livestock waste and wildlife might impact offsite aquatic suitability for oyster production and other organisms.

**Forestland**

- Over one-half of the private forestland is under industrial forest management.
- Invasive, noxious weeds (Japanese knotweed, purple loosestrife, and tansy ragwort) are a major concern.
- Much of the private, non-industrial forestland is used as rural homesites and recreational property. Only a portion is used for long-term timber production.

**Other Concerns**

- Wind erosion occurs in the dune areas near Pacific City.
- Streambank erosion occurs along all streams and tributaries.
- Frequent flooding occurs along lowland streams, and the concern is increased by bedload deposition and inadequate stream outlets.

FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES <sup>12</sup>	
<b>THREATENED SPECIES</b>	<b>CANDIDATE SPECIES</b>
<b>Marine</b> – Steller (northern) sea lion <b>Birds</b> – Marbled murrelet, Western snowy plover, Bald eagle, Brown pelican, Short-tailed Albatross, Northern spotted owl <b>Fish</b> – Coho salmon <b>Invertebrates</b> – Oregon silverspot butterfly <b>Plants</b> – Nelson's checker-mallow	<b>Fish</b> – Steelhead <b>Birds</b> – Streaked horned lark
	<b>PROPOSED SPECIES</b> None
<b>ESSENTIAL FISH HABITAT</b> <sup>13</sup> - Chinook, Coho	

## Census and Social Data<sup>/14</sup>

**Number of Farms: 413**

**Number of Operators: 717**

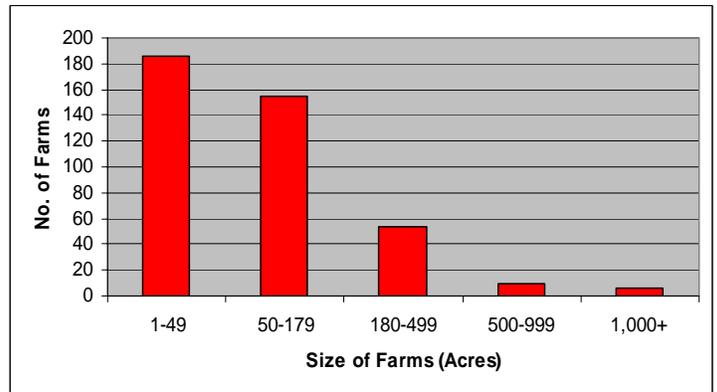
- Full-Time Operators: **289**
- Part-Time Operators: **428**

## Estimated Level of Willingness and Ability to Participate in Conservation<sup>/15</sup>:

**High** (large acreage operators);

**Low** (small acreage operators)

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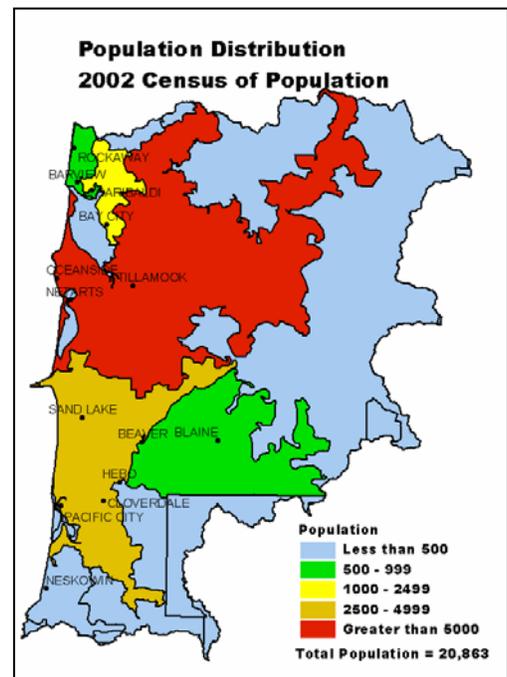
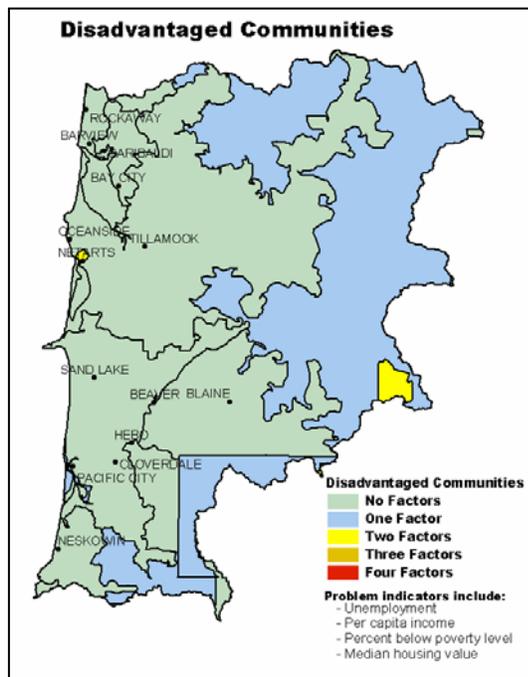
Operators of viable commercial dairy operations of more than 180 acres are reported to understand and appreciate the benefits of conservation and have a history of conservation adoption. They tend to have the ability and stewardship attitude amenable to practicing conservation and natural resource management.

Smaller acreage operators (less than 180 acres) and absentee landowners tend to lack awareness of local resource concerns, lack resources to adopt conservation practices, and require significantly more time to inform, persuade, and assist with natural resource management. Absentee landowners tend also to lack ties to the community that are normally requisite to widespread conservation diffusion in a watershed.

## Evaluation of Social Capital<sup>/16</sup> **Low**

Social capital in the Wilson/Trask/Nestucca watershed and the community's ability to successfully address local resource concerns tends to be low. The community's greatest strength is its ties to agricultural organizations. The community gets good participation in civic activities, public meetings, and community projects.

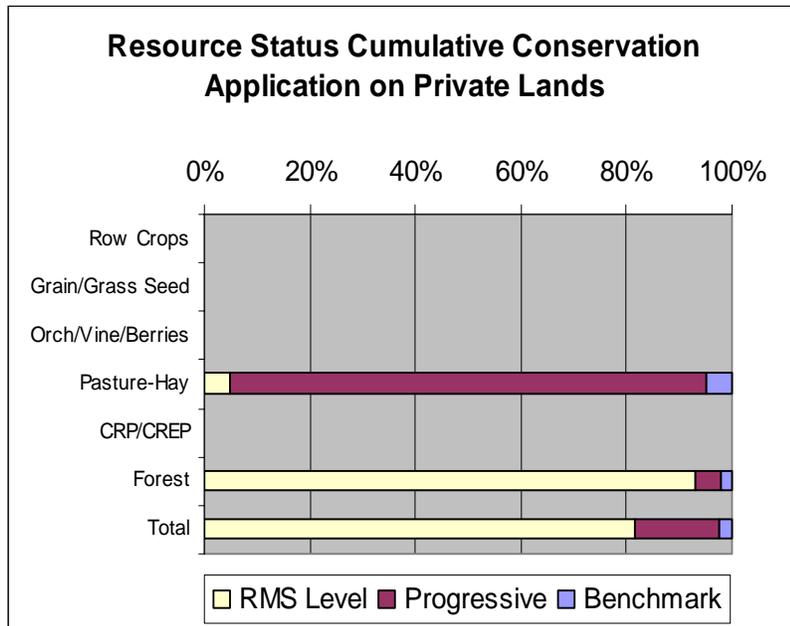
Social capital might improve if local leaders were able to increase the general public's participation (including minorities) in community issues and decisions. Participation of all local landowners (full-time, part-time, and absentee) in farm, ranch, and environmental organizations would likely help the community more successfully address local resource concerns.



### Progress/Status

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PRMS Data	FY99	FY00	FY01	FY02	FY03	Avg/Year	Total
Total Conservation Systems Planned (Acres)	2,100	3,273	1,720	199	3,034	2,065	10,326
Total Conservation Systems Applied (Acres)	1,364	1,673	2,368	0	2,187	1,518	7,592
<b>Conservation Treatment Acres</b>							
Waste Management (Number)	14	7	6	6	6	8	39
Buffers (Acres)	0	0	0	0	0	0	0
Erosion Control (Acres)	1	0	0	0	0	0	1
Irrigation Water Management (Acres)	0	0	0	0	0	0	0
Nutrient Management (Acres)	521	596	475	0	536	426	2,128
Pest Management (Acres)	5	1,008	1,372	0	0	477	2,385
Prescribed Grazing (Acres)	424	1,851	2,021	105	1,038	1,088	5,439
Trees & Shrubs (Acres)	16	101	70	0	0	37	187
Conservation Tillage (Acres)	0	0	0	0	0	0	0
Wildlife Habitat (Acres)	27	302	61	0	0	78	390
Wetlands (Acres)	9	21	7	0	57	19	94



- ❖ Progress over the last 5 years has been focused on:
  - ~ Nutrient and pest management and prescribed grazing on CAFOs.
  - ~ Wildlife habitat management in riparian and wetland areas.
- ❖ Most commercial dairies are at the progressive level. Ownership turnover and high capital costs have kept conservation adoption to the RMS level.
- ❖ Focus during the last decade has been on meeting State CAFO permit regulations. Attention now is turning toward practices such as pasture and wildlife habitat management.
- ❖ Private industrial forestland owners typically do not work with NRCS and SWCDs; however, their land commonly complies with State forest practices act requirements.
- ❖ Some of the non-industrial, private forestland is used for long-term timber production, but most is used as rural homesites or recreational property.

*Estimates are based on information received from local conservationists in the watershed.*

### Lands Removed from Production through Farm Bill Programs

- ❖ Conservation Reserve Program (CRP): **None**
- ❖ Wetland Restoration Program (WRP): **None**
- ❖ Conservation Reserve Enhancement Program (CREP): **None**

**Footnotes/Bibliography**

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All data is provided "as is." There are no warranties, express or implied, including the warranty of fitness for a particular purpose, accompanying this document. Use for general planning purposes only.

1. Ownership Layer – Source: The 1:24,000 scale public ownership layer is the land ownership/management for public entities, including Federal, Tribal, State, and local entities. This is a seamless, statewide Oregon Public Ownership vector layer composed of fee ownership of lands by Federal, State, Tribal, county, and city agencies. The layer is comprised of the best available data compiled at 1:24,000 scale or larger, and the line work matches GCDB boundary locations and ORMAP standards where possible. The layer is available from the State of Oregon GIS Service Center: <http://www.gis.state.or.us/data/alphalist.html>. For current ownership status, consult official records at appropriate Federal, State, and county offices. Ownership classes grouped to calculate Federal ownership vs. non-Federal ownership by the Water Resources Planning Team.
2. National Land Cover Dataset (NLCD) - Originator: U.S. Geological Survey (USGS); Publication date: 19990631; Title: Oregon Land Cover Data Set, Edition: 1; Geospatial data presentation form: Raster digital data; Publisher: U.S. Geological Survey, Sioux Falls, SD, USA; Online linkage: <http://edcwww.cr.usgs.gov/programs/lccp/nationallandcover.html>; Abstract: These data can be used in a geographic information system (GIS) for any number of purposes, such as assessing wildlife habitat, water quality, pesticide runoff, land use change, etc. The State data sets are provided with a 300-meter buffer beyond the State border to facilitate combining the State files into larger regions.
3. ESTIMATES FROM THE 1997 NRI DATABASE (REVISED DECEMBER 2000) REPLACE ALL PREVIOUS REPORTS AND ESTIMATES. Comparisons made using data published for the 1982, 1987, or 1992 NRI may produce erroneous results. This is because of changes in statistical estimation protocols and because all data collected prior to 1997 were simultaneously reviewed (edited) as 1997 NRI data were collected. All definitions are available in the glossary. In addition, this December 2000 revision of the 1997 NRI data updates information released in December 1999 and corrects a computer error discovered in March 2000. For more information: <http://www.nrcs.usda.gov/technical/NRI/>
4. Irrigated Adjudicated Water Rights – Water Rights Information System (WRIS), Oregon Water Resources Department, <http://www.wrd.state.or.us/maps/wlexport.shtml>
5. StreamNet is a cooperative venture of the Pacific Northwest's fish and wildlife agencies and tribes and is administered by the [Pacific States Marine Fisheries Commission](#). StreamNet provided data and data services in support of the region's fish and wildlife program and other efforts to manage and restore the region's aquatic resources. Official StreamNet website: <http://www.streamnet.org/>
6. Natural Resources Conservation Service, Watershed Projects Planned and Authorized, <http://www.nrcs.usda.gov/programs/watershed/Purpose>.
7. Natural Resources Conservation Service, Watershed Plans, Studies, and Assessments completed, [http://www.nrcs.usda.gov/programs/watershed/Surveys\\_Plng.html#Watershed%20Surveys%20and%20Plan](http://www.nrcs.usda.gov/programs/watershed/Surveys_Plng.html#Watershed%20Surveys%20and%20Plan)
8. Oregon Department of Environmental Quality Total Maximum Daily Loads, <http://www.deq.state.or.us/wq/TMDLs/TMDLs.htm>
9. Oregon Department of Agriculture, Agricultural Water Quality Management Plans, [http://www.oregon.gov/ODA/NRD/water\\_agplans.shtml](http://www.oregon.gov/ODA/NRD/water_agplans.shtml)

## Footnotes/Bibliography Continued

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10. Oregon Watershed Enhancement Board, <http://oregon.gov/OWEB/WSHEDS/index.shtml>
11. Watershed Assessments completed by local watershed councils following the Oregon Watershed Assessment Manual, [http://oregon.gov/OWEB/docs/pubs/ws\\_assess\\_manual.shtml](http://oregon.gov/OWEB/docs/pubs/ws_assess_manual.shtml).
12. NRCS Field Office Technical Guide, Section II, Threatened and Endangered List.
13. Magnuson-Stevens Fishery Conservation and Management Act, Public Law 94-265. As amended through October 11, 1996.
14. Data were taken from the 2002 Agricultural Census and adjusted by percent of HUC in the county or by percent of zip code area in the HUC, depending on the level of data available. Data were also taken from the U.S. Population Census, 2000.
15. Conservation participation was estimated using NRCS Social Sciences Technical Note 1801, [Guide for Estimating Participation in Conservation](#), 2004. Four categories of indicators were evaluated: Personal characteristics, farm structural characteristics, perceptions of conservation, and community context. Estimates are based on information received from local conservationists in the watershed.
16. Social capital is an indicator of the community's ability and willingness to work together to solve problems. A high amount of social capital helps a community to be physically healthy, socially progressive, and economically vigorous. A low amount of social capital typically results in community conflict, lack of trust and respect, and unsuccessful attempts to solve problems. The evaluation is based on NRCS Technical Report Release 4.1, March, 2002: [Adding Up Social Capital: An Investment in Communities](#). Local conservationists provided information to measure social capital. Scores range from 0 to 76.
17. [Surface and Groundwater Resource Protection Map](#)
  - a. 2002 303d Listed Streams designated by Oregon Department of Environmental Quality and approved by the Environmental Protection Agency, Section 303d Clean Water Act, <http://www.deq.state.or.us/wq/303dlist/303dpage.htm>
  - b. Groundwater Management Areas designated by the Oregon Department of Environmental Quality, Oregon Revised Statutes – Ground Water ORS 468B.150 to ORS 468B.190, <http://www.deq.state.or.us/wq/groundwa/wqgw.htm>
  - c. Groundwater Restricted Areas designated by Oregon Water Resources Commission, Oregon Department of Water Resources, [http://egov.oregon.gov/OWRD/PUBS/aquabook\\_protections.shtml](http://egov.oregon.gov/OWRD/PUBS/aquabook_protections.shtml)
  - d. The Sole Source Aquifer (SSA) Protection Program is authorized by Section 1424(e) of the Safe Drinking Water Act of 1974 (Public Law 93-523, 42 U.S.C. 300 et. seq), <http://www.epa.gov/safewater/ssanp.html>
18. Subbasin assessments and plans are developed by local groups (SWCDs, watershed councils, tribes, and others) as part of the Northwest Power and Conservation Council's fish and wildlife program in the Columbia River Basin. This program is funded and implemented by the Bonneville Power Administration. <http://www.nwcouncil.org/fw/subbasinplanning/Default.htm>.