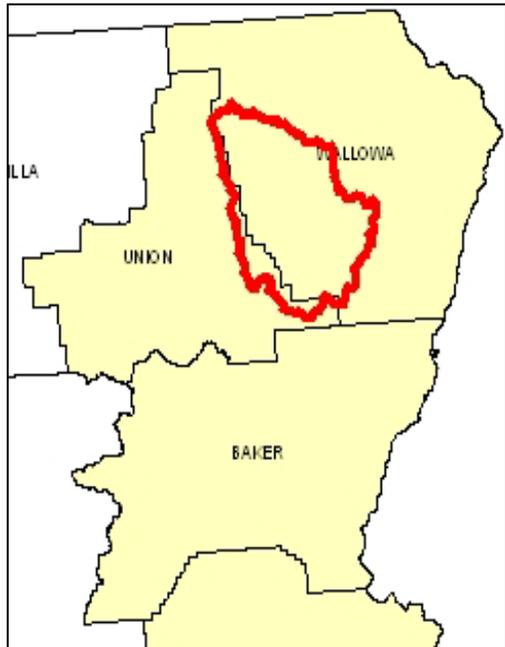


Introduction

The Wallowa River 8-Digit Hydrologic Unit Code (HUC) subbasin is comprised of 612,800 acres, mostly in Wallowa County. Forty-six percent of the subbasin is forestland, twenty-nine percent is rangeland, and eleven percent is hayland and pastureland. The subbasin is about 50 percent public land and 50 percent private land. There are four permitted Confined Animal Feeding Operations (CAFOs) and 5,570 permitted animals in the subbasin. Major resource concerns include poor water quality due to streambank erosion, sediment, and loss of riparian vegetation; invasive, noxious weeds; lack of water for irrigation; and loss of wildlife habitat. High costs, unreliable profits, and low community well-being limit the diffusion of conservation among ranchers in the Wallowa River subbasin.

There are 272 operations and 452 farmers and ranchers in the subbasin. Most are aware of local resource concerns, have a positive stewardship attitude, and are implementing conservation; however, many perceive the cost of conservation to be prohibitively high. Additional technical and financial assistance and greater community support for conservation are needed.

The NRCS Enterprise Service Center, Wallowa Soil and Water Conservation District, and Grande Ronde Model Watershed Council provide much of the conservation assistance in the subbasin.

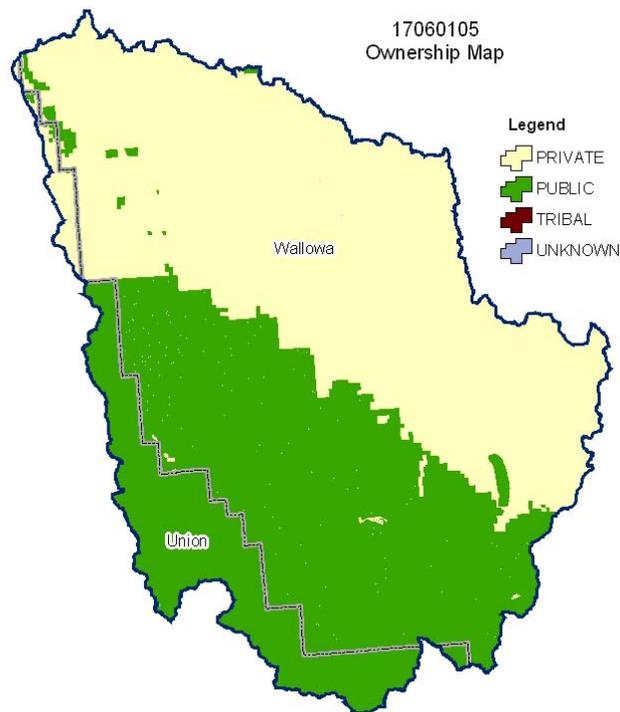
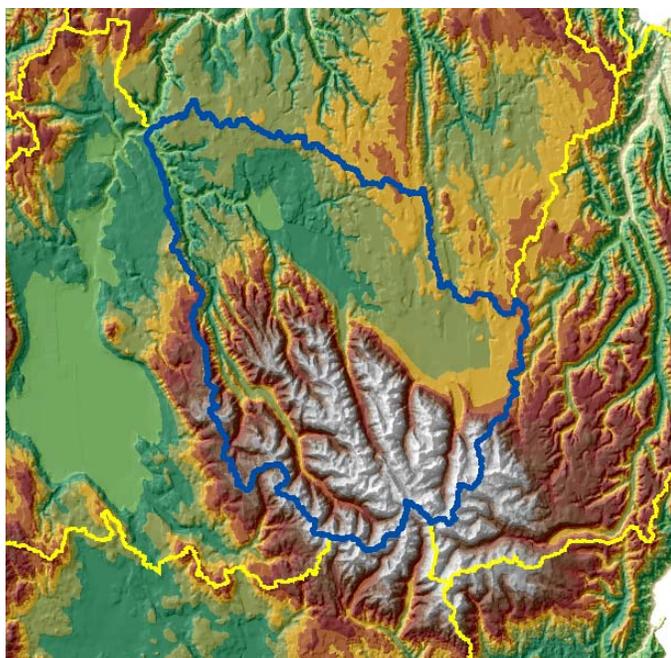


Profile Contents

[Introduction](#)
[Physical Description](#)
[Land Use Map & Precipitation Map](#)
[Common Resource Area](#)

[Resource Concerns](#)
[Census and Social Data](#)
[Progress/Status](#)
[Footnotes/Bibliography](#)

Relief Map



Physical Description

[Back to Contents](#)

ALL NUMBERS IN THIS PROFILE ARE FOR OREGON ONLY

Land Cover/Land Use (NLCD ²)	Ownership - (2003 Draft BLM Surface Map Set ¹)						Totals	%
	Public		Private		Tribal			
	Acres	%	Acres	%	Acres	%		
Forest	185,100	30%	95,100	16%	0	0%	280,200	46%
Grain Crops	*	---	21,300	3%	0	0%	21,300	3%
Conservation Reserve Program Land ^a	0	0%	14,000	2%	0	0%	14,000	2%
Grass/Pasture/Hay	*	---	61,900	10%	0	0%	68,400	11%
Orchards/Vineyards	0	0%	0	0%	0	0%	0	0%
Row Crops	0	0%	0	0%	0	0%	0	0%
Shrub/Rangelands	51,200	8%	126,800	21%	0	0%	178,000	29%
Water/Wetlands/Developed/Barren	46,900	8%	*	---	0	0%	50,900	8%
Oregon HUC Totals ^b	289,700	47%	323,100	53%	0	0%	612,800	100%

*: 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:

- Over 50 percent of the private forestland is industrially owned and managed.
- Both irrigated and nonirrigated grain is grown in the watershed.
- Pastureland and hayland are on cattle ranches and small farms.

Irrigated Lands (1997 NR ³ Estimates for Non-Federal Lands Only)	Type of Land	ACRES	% of Irrigated Lands	% of HUC
	Cultivated Cropland	3,900	10%	0%
	Uncultivated Cropland	27,400	68%	4%
	Pastureland	9,100	23%	1%
	Total Irrigated Lands	40,400	100%	6%

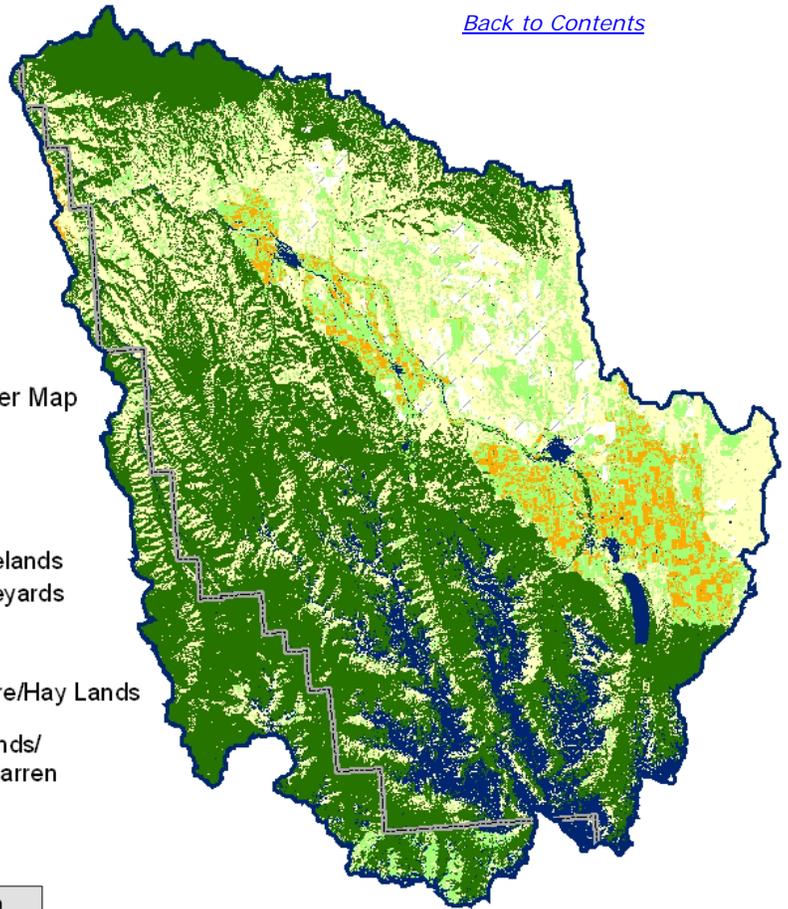
(Continued on the following pages)

[Back to Contents](#)

17060105
Land use/Land cover Map

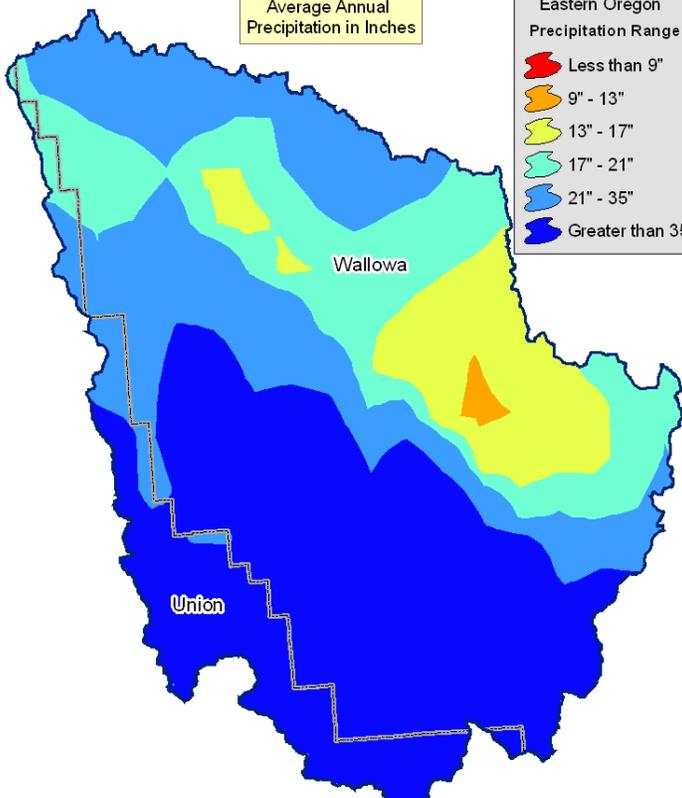
Legend

-  Shrub/Rangelands
-  Orchard/Vineyards
-  Row Crops
-  Forest
-  Grass/Pasture/Hay Lands
-  Grain Crops
-  Water/Wetlands/
Developed/Barren



17060105
Average Annual
Precipitation in Inches

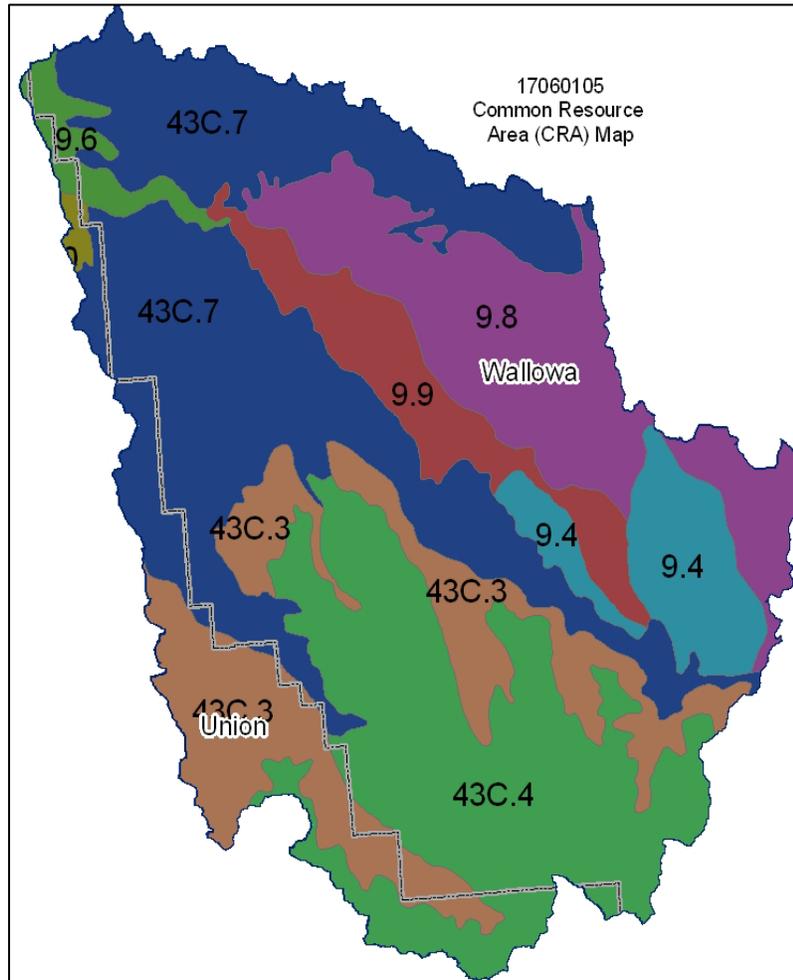
- Eastern Oregon
Precipitation Range
-  Less than 9"
 -  9" - 13"
 -  13" - 17"
 -  17" - 21"
 -  21" - 35"
 -  Greater than 35"



Common Resource Area Map

[Back to Contents](#)

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>



9.4 – Palouse and Nez Perce Prairies - Deep Loess Foothills: This unit is characterized by the lower northwest-facing slopes of the eastern Blue Mountains. It is characterized by deep and very deep loess deposits on hills and terraces. The soils are dominantly those of the Athena, Imbler, Palouse, Lostine, and Ladd series. The temperature regime is mesic, and the moisture regime is xeric. The mean annual precipitation is 15 to 24 inches. Most areas are used as cropland.

9.8 – Palouse and Nez Perce Prairies - Zumwalt Plateau: This unit is characterized by nearly level to gently sloping old terraces and basalt plateaus. The dominant soils are those of the Watama, Bridgecreek, Hankins, Zumwalt, Hurwal, and Ramo series. The soils typically are well drained and are moderately deep to deep. The temperature regime is frigid, and the moisture regime is xeric. Precipitation is about 15 to 25 inches.

9.9 – Palouse and Nez Perce Prairies - Grande Ronde-Lostine Flood Plains: This unit is characterized by flood plains and old lakebeds in the Grande Ronde Basin and along the Lostine River. The soils are well drained to somewhat poorly drained and are in the lowest positions on the landscape. The dominant soils are those of the Catherine, LaGrande, Hot Lake, and Conley series. The temperature regime is mesic, and the moisture regime is xeric. Precipitation is about 12 to 25 inches. Most areas are used as cropland,

and drainage maintenance maybe necessary.

43C.3 – Blue and Seven Devils Mountains - High Elevation Blue and Seven Devils Mountains Forests: This unit is characterized by forested plateaus that have a cryic temperature regime. These areas characteristically have deep snowpack and a very short growing season. The moisture regime is udic. The dominant vegetation is subalpine fir, Engelmann spruce, and larch. Streams follow fault lines, have steep gradients, and have eroded, deep canyons. Land uses include grazing, logging, recreation, and wildlife habitat.

43C.4 – Blue and Seven Devils Mountains - Subalpine Zone: This unit is characterized by subalpine vegetation and is associated with areas of rock outcrop in the Eagle Cap Wilderness Area. The temperature regime is cryic, and the moisture regime is udic. The vegetation is dominantly subalpine fir, Engelmann spruce, larch, and lodgepole pine.

43C.7 - Blue and Seven Devils Mountains - Low Elevation Blue Mountains Forests: This unit is a forested, uplifted basalt plateau. It is characterized by forested plateaus and highly dissected canyons that have frigid temperatures. Slopes dominantly are nearly level to rolling but are very steep in the canyons. The moisture regime is xeric or udic. The vegetation is dominantly grand fir, Douglas-fir, and ponderosa pine. The soils in this unit typically have a mantle of ash as much as 20 to 30 inches thick.

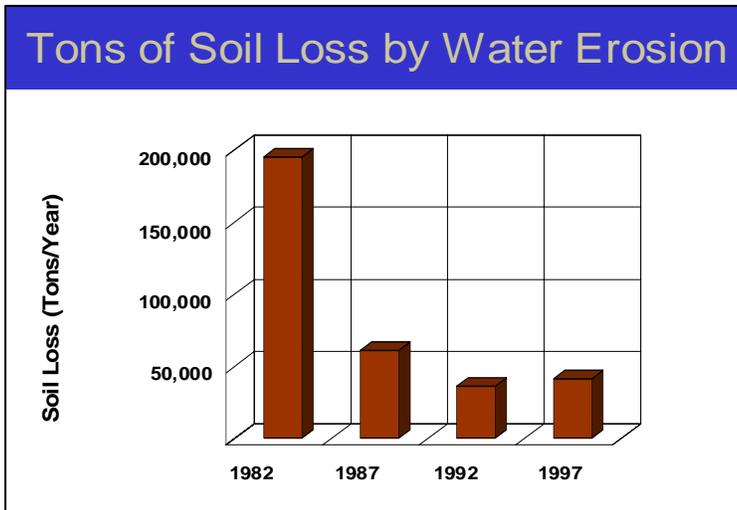
Physical Description – Continued

[Back to Contents](#)

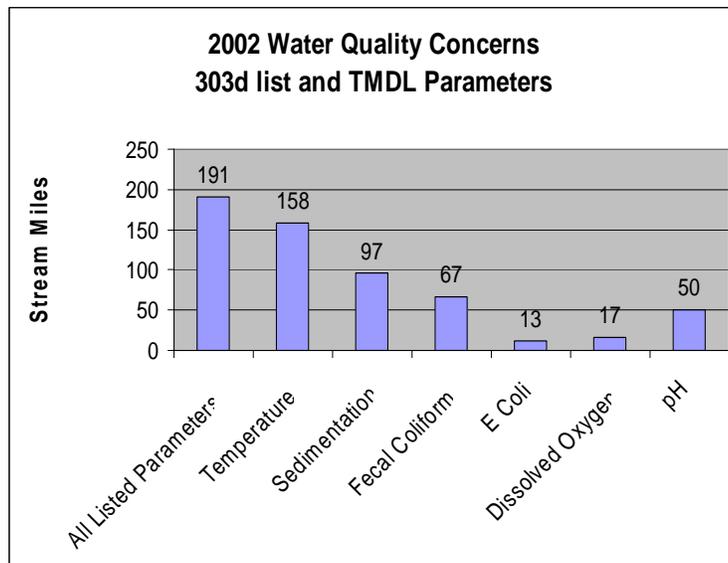
		ACRES	ACRE-FEET			
Irrigated Adjudicated Water Rights (OWRD ⁴)	Surface	93,240	288,750			
	Well	2,807	8,694			
	Total Irrigated Adjudicated Water Rights	96,047	297,444			
Stream Flow Data	USGS 13327500 WALLOWA RIVER AT JOSEPH, OR	Total Avg. Yield	82,278			
		May – Sept. Yield	68,914			
		MILES	PERCENT			
Stream Data ⁵ <i>*Percent of Total Miles of Streams in HUC</i>	Total Miles – Major (100K Hydro GIS Layer)	769	---			
	303d/TMDL Listed Streams (DEQ)	191	25%			
	Anadromous Fish Presence (StreamNet)	81	11%			
	Bull Trout Presence (StreamNet)	177	23%			
		ACRES	PERCENT			
Land Cover/Use ² Based on a 100-foot stretch on both sides of all streams in the 100K Hydro GIS Layer	Forest	14,275	52%			
	Grain Crops	1,370	5%			
	Grass/Pasture/Hay	3,895	14%			
	Orchards/Vineyards	0	0%			
	Row Crops	0	0%			
	Shrub/Rangelands – Includes CRP Lands	6,490	24%			
	Water/Wetlands/Developed/Barren	1,412	5%			
	Total Acres of 100-foot Stream Buffers	27,441	---			
Land Capability Class (Croplands & Pasturelands Only) (1997 NRI ³ Estimates for Non-Federal Lands Only)	1 – slight limitations	0	0%			
	2 – moderate limitations	3,400	4%			
	3 – severe limitations	40,000	52%			
	4 – very severe limitations	25,900	34%			
	5 – no erosion hazard, but other limitations	0	0%			
	6 – severe limitations; unsuitable for cultivation; limited to pasture, range, forest	5,900	8%			
	7 – very severe limitations; unsuitable for cultivation; limited to grazing, forest, wildlife habitat	1,700	2%			
	8 – miscellaneous areas; limited to recreation, wildlife habitat, water supply	0	0%			
	Total Croplands & Pasturelands	76,900	---			
Confined Animal Feeding Operations – Oregon CAFO Permit – 12/2004						
Animal Type	Dairy	Feedlot	Poultry	Swine	Mink	Other
No. of Permitted Farms	0	4	0	0	0	0
No. of Permitted Animals	0	5,570	0	0	0	0

Resource Concerns

[Back to Contents](#)



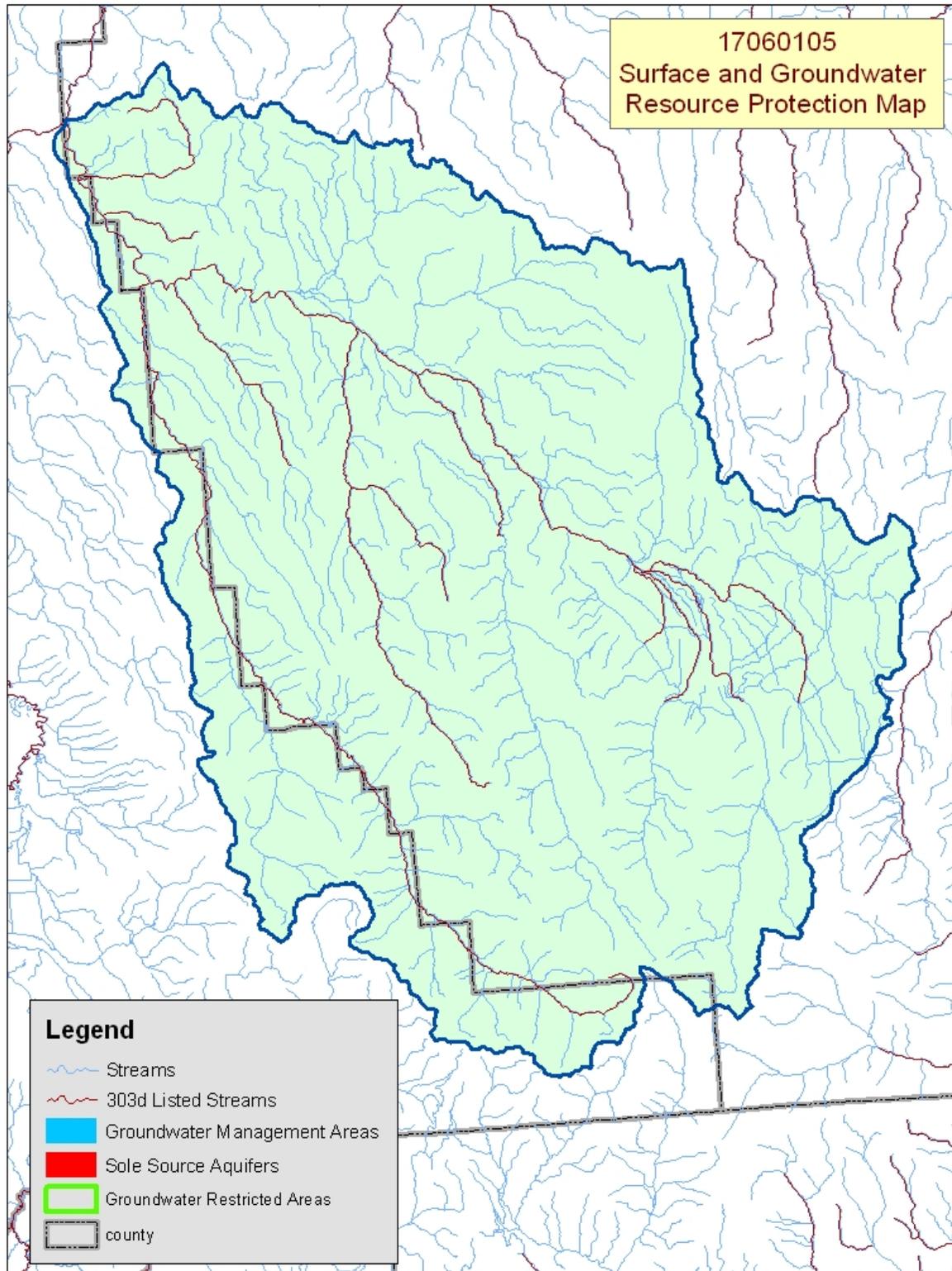
- ❖ Sheet and rill erosion by water on the cropland and pastureland have been reduced more than 150,000 tons of soil per year from 1982 to 1997.
- ❖ NRI estimates indicate 5,200 acres of the agricultural lands still had water erosion rates above a sustainable level in 1997.
- ❖ Controlling erosion not only sustains the long-term productivity of the land, but it also affects the amount of soil, pesticides, fertilizer, and other substances that move into the Nation's waters.
- ❖ Through NRCS programs, many farmers and ranchers have applied conservation practices to reduce the effects of erosion by water. As a result, erosion rates on the cropland and pastureland fell 79 percent, from 2.2 tons/acre/year to 0.5 ton/acre/year, from 1982 to 1997.



- ❖ Eighty-three percent 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, water withdrawals, and other anthropogenic or natural causes.
- ❖ Irrigation-induced, sheet and rill, and streambank erosion are sources of sediment affecting water quality. In addition, cropland agriculture can contribute nutrients to area streams, which in turn can stimulate growth of aquatic weeds and algae.
- ❖ Fecal coliform can be indicative of livestock waste, 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 erosion control, crop residue management, grazing management, nutrient management, irrigation water management, and use of riparian buffers.

Watershed Projects, Plans, Studies, and Assessments			
NRCS Watershed Projects ⁶		NRCS Watershed Plans, Studies, and Assessments ⁷	
Name	Status	Name	Status
None	None	Westside/Poley Allen Irrigation Preliminary Plan	Active
ODEQ TMDL's ⁸		ODA Agricultural Water Quality Management Plans ⁹	
Name	Status	Name	Status
Grande Ronde River Basin	Data Collection	Wallowa	Completed
OWEB Watershed Council ¹⁰		Watershed Council Assessments ¹¹	
Grande Ronde Model Watershed		Lostine Watershed Assessment	
		NWPCC Subbasin Plans and Assessments ¹⁸	
		Grande Ronde River	

(Continued on page 8)



Map Footnote [417](#)

Resource Concerns - Continued

[Back to Contents](#)

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	Sheet and Rill		X				
Soil Condition	Tilth, Crusting, Infiltration, Organic Matter		X				
Water Quantity	Water Management for Irrigated Land	X	X				
Water Quality, Surface	Nutrients and Organics					X	
	Suspended Sediments and Turbidity		X				
Plant Suitability	Site and Intended Use Suitability					X	X
Plant Condition	Productivity, Health, and Vigor	X				X	X
Plant Management	Establishment, Growth, and Harvest	X				X	X
Animal Habitat, Domestic	Water - Quantity and Quality					X	
Animal Habitat, Wildlife	Water - Quantity and Quality					X	
Human, Economics	High Capital/Financial Costs	X	X			X	X
	Low or Unreliable Profitability	X	X			X	X
Human, Social	Low Community Well-Being	X	X			X	X

Grass/Pasture/Hay

- Better irrigation water management is practiced in areas used for alfalfa and grass hay than in areas of pasture.
- In some areas of pasture, a lack of proper grazing management has lead to its poor condition.
- Areas of pasture commonly are adjacent to streams, which can contribute to streambank erosion, sedimentation, and elevated temperatures as a result of loss of riparian vegetation.

Grain Crops

- Sheet and rill erosion and poor soil condition due to lack of adequate residue are common resource problems.
- Low profit commonly hinders the adoption of conservation practices.

Shrub/Rangeland

- Rangeland can become infested with noxious weeds, annual grasses, and shrubs due to inadequate forage and grazing management.
- Loss of riparian vegetation contributes to the warming and nutrient-loading of streams.
- Low profit and high capital cost commonly hinder the adoption of conservation practices.

Forestland

- Much of the private forestland is managed by private industrial owners who generally comply with State forest practice act requirements.
- Private, non-industrial forestland commonly is associated with small woodlots or rural homesites that are not actively managed for timber production.
- Lack of thinning and forest management can result in stagnate stands that have low value for commercial wood products, livestock grazing, and wildlife habitat.
- High cost, unreliable markets, and inadequate incentive programs limit forest management activities on private, non-industrial forestland.

FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES ¹²	
THREATENED SPECIES	CANDIDATE SPECIES
Mammals-Canada lynx	Birds – Yellow-billed cuckoo
Birds – Bald eagle	Amphibians and Reptiles – Columbia spotted frog
Fish – Bull trout, Steelhead, Chinook salmon	Plants- Slender moonwort
Plants – McFarlane's four o'clock, Spalding's catchfly	PROPOSED SPECIES None
ESSENTIAL FISH HABITAT ¹³ - Chinook	

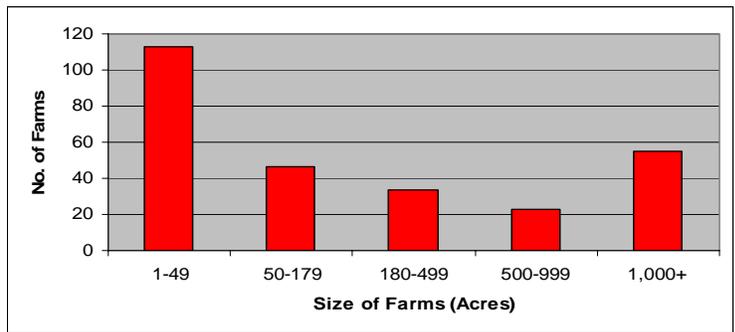
Census and Social Data^{/14}

[Back to Contents](#)

Number of Farms: 272

Number of Operators: 452

- Full-Time Operators: **162**
- Part-Time Operators: **290**
-



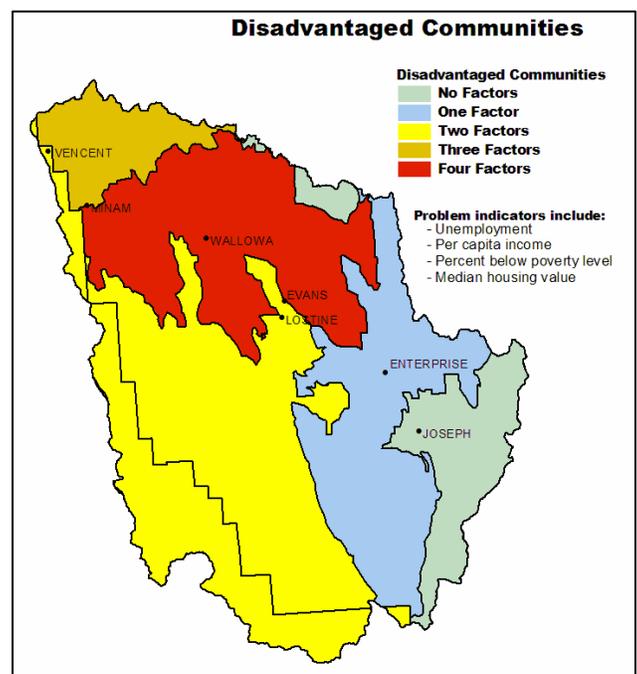
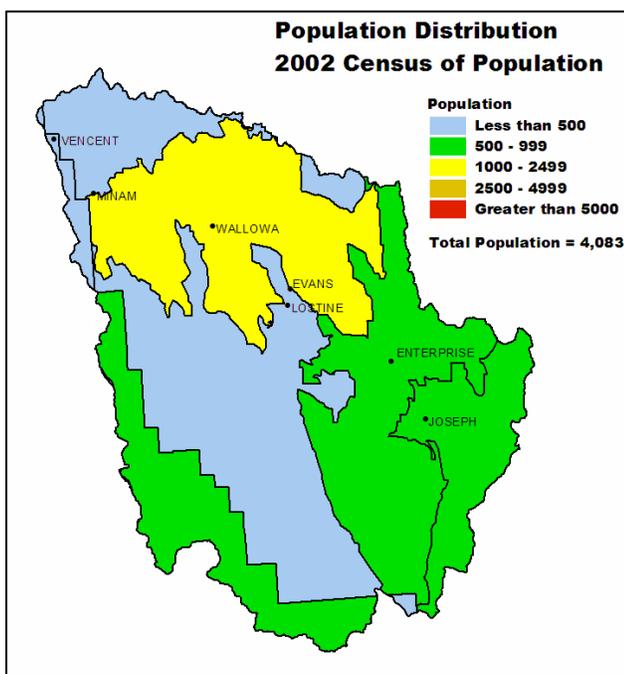
Estimated Level of Willingness and Ability to Participate in Conservation^{/15}: **HIGH**

Most operators in the Wallowa River subbasin are well-educated, full-time ranchers and farmers who are aware of local resource concerns, have a positive stewardship attitude, seek out conservation information, and are implementing a conservation plan. While they tend to perceive a positive effect of conservation on local resource concerns, they also perceive the cost of conservation to be prohibitively high. There is inadequate financial assistance and *timely* technical assistance in the subbasin, and many ranchers perceive government regulations to be a threat to their management autonomy of the resources on their land.

Additional technical and financial assistance and other risk-reducing incentives may increase the adoption of conservation in the subbasin.

Evaluation of Social Capital^{/16}: **LOW**

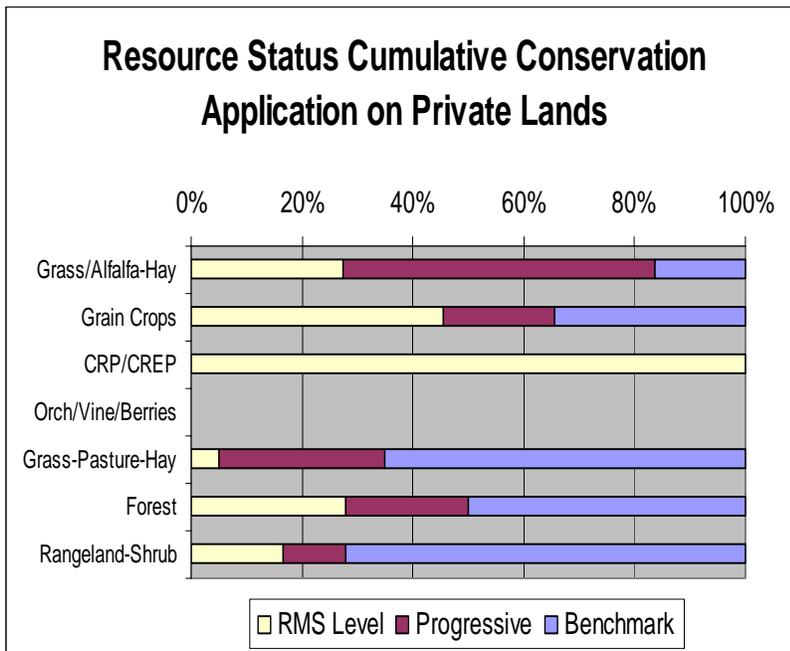
Social capital and the ability of the community to solve problems and support conservation is estimated to be low throughout most of the Wallowa River subbasin but is somewhat higher near towns and rural community centers. The small population and remoteness of the subbasin make it difficult for communities to be effective and bring about change. Residents in some communities are active in church, civic, and community projects, and most residents support one another. Many farmers and ranchers, however, hold a pessimistic outlook for the future of profitable agriculture in the subbasin.



Progress/Status

[Back to Contents](#)

PRMS Data	FY99	FY00	FY01	FY02	FY03	Avg/Year	Total
Total Conservation Systems Planned (Acres)	13,962	9,353	611	621	6,498	6,209	31,045
Total Conservation Systems Applied (Acres)	7,227	6,449	132	317	20,562	6,937	34,687
Conservation Treatment (Acres)							
Waste Management	0	0	0	0	0	0	0
Buffers	0	110	46	60	224	88	440
Erosion Control	1,967	2,635	115	429	194	1,068	5,340
Irrigation Water Management	2,110	172	160	614	770	765	3,826
Nutrient Management	0	0	0	0	0	0	0
Pest Management	0	0	0	0	14	3	14
Prescribed Grazing	4,722	30,380	9	0	6,920	8,406	42,031
Trees & Shrubs	8	4	0	43	9	13	64
Conservation Tillage	1,220	0	0	0	0	244	1,220
Wildlife Habitat	731	365	37	449	543	425	2,125
Wetlands	0	0	0	0	0	0	0



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

- ❖ Progress over the last 5 years has been focused on:
 - ~ Erosion control and irrigation water management in areas used for grain and hay.
 - ~ Prescribed grazing on grazing land.
 - ~ Wildlife habitat management.
- ❖ Hayfields generally are managed at a higher level than are pastures.
- ❖ Many of the dryland grain farms still practice conventional tillage.
- ❖ Prescribed grazing is practiced on a majority of the grazing land. Problems remain with noxious weeds and water management for livestock and wildlife.
- ❖ Most private, industrial timber owners are doing good conservation work and are satisfying State forest practice act requirements.
- ❖ Private, non-industrial forests that are not managed for timber commonly are not meeting State forest practice act requirements.

Lands Removed from Production through Farm Bill Programs

- ❖ Conservation Reserve Program (CRP): **13,647 acres**
- ❖ Wetland Restoration Program (WRP): **None**
- ❖ Conservation Reserve Enhancement Program (CREP): **373 acres**

Footnotes/Bibliography

[Back to Contents](#)

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/wrlexport.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
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

Footnotes/Bibliography Continued

[Back to Contents](#)

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.

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.
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
 - 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>.