



Introduction

The Lower Grande Ronde 8-Digit Hydrologic Unit Code (HUC) watershed is 975,300 acres, in northeast Oregon and southeast Washington. Seventy-eight percent of the Lower Grande Ronde watershed is in Oregon, and the remainder is in Washington. The Oregon part of the watershed includes 176 farms, about half of which are between 50 and 1,000 acres.

The Snake Basin has four USDA-NRCS Service Centers and seven Soil and Water Conservation Districts (SWCD).

The Oregon part of the watershed is about fifty-fifty private and public land ownership. About ninety percent of the part of the watershed in Oregon is forested and in rangeland, and the remainder is in pasture, grasses, and grain crops.

Profile Contents

[Introduction](#)

[Physical Description](#)

[Landuse Map & Precipitation Map](#)

[Common Resource Area](#)

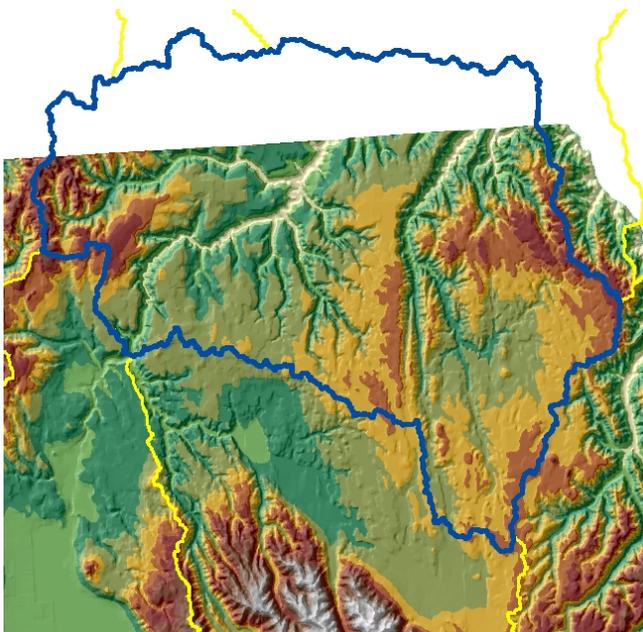
[Resource Concerns](#)

[Census and Social Data](#)

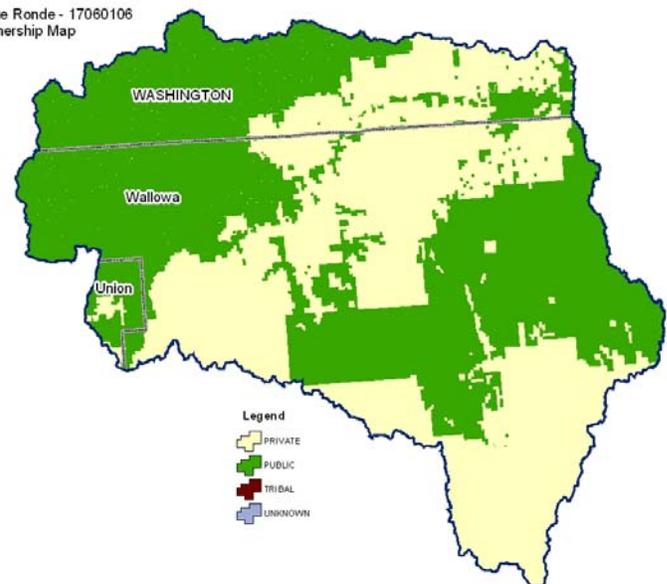
[Progress/Status](#)

[Footnotes/Bibliography](#)

Relief Map



Lower Grande Ronde - 17060106
Ownership Map



Physical Description

[Back to Contents](#)

ALL NUMBERS WITHIN THIS PROFILE ARE FOR OREGON ONLY

Land Cover/Land Use (NLCD ²)	Ownership - (2003 Draft BLM Surface Map Set ¹)							
	Public		Private		Tribal		Totals ^b	%
	Acres	%	Acres	%	Acres	%		
Forest	237,000	31%	140,900	19%	0	%	377,900	50%
Grain Crops	*	--	22,900	3%	0	%	23,200	3%
Conservation Reserve Program Land ^a	0	%	4,600	1%	0	%	4,600	1%
Grass/Pasture/Hay Lands	23,200	3%	34,000	4%	0	%	57,200	7%
Orchards/Vineyards	0	0%	0	0%	0	%	0	0%
Row Crops	0	0%	0	0%	0	%	0	0%
Shrub/Rangelands	125,800	17%	165,300	22%	0	%	291,100	38%
Water/Wetlands/Developed/Barren	*	--	*	--	0	%	*	--
Oregon HUC Totals ^b	388,100	51%	368,300	49%	0	0%	756,400	100%

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

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

b: Totals may not add due to rounding and small unknown acreages.

Special Considerations for this 8 Digit HUC:

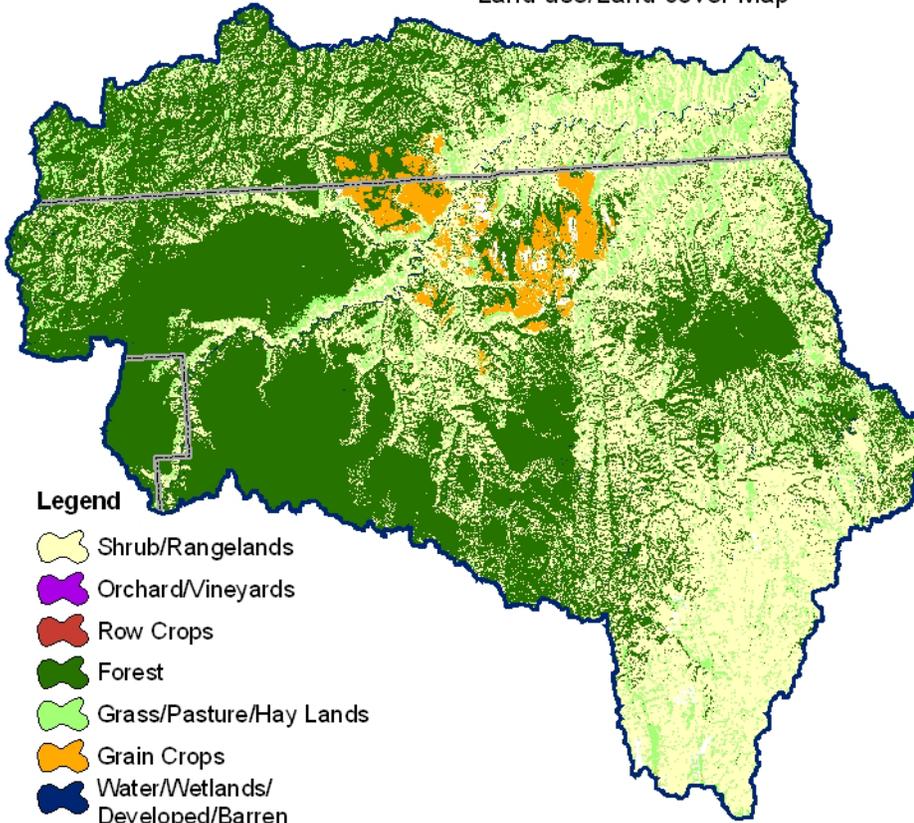
- Over fifty percent of the private forestland is industrially owned and managed.
- Pasture/Hay lands occur on cattle ranches and small farms.
- 218,900 acres of this hydrologic unit lies within the State of Washington

Irrigated Lands (1997 NRI ³ Estimates for Non-Federal Lands Only)	Type of Land	ACRES	% of Irrigated Lands	% of HUC
	Cultivated Cropland	0	--	--
Non-Cultivated Cropland	0	--	--	
Pastureland	0	--	--	
Total Irrigated Lands	0	--	--	

(Continued on the following pages)

17060106
Land use/Land cover Map

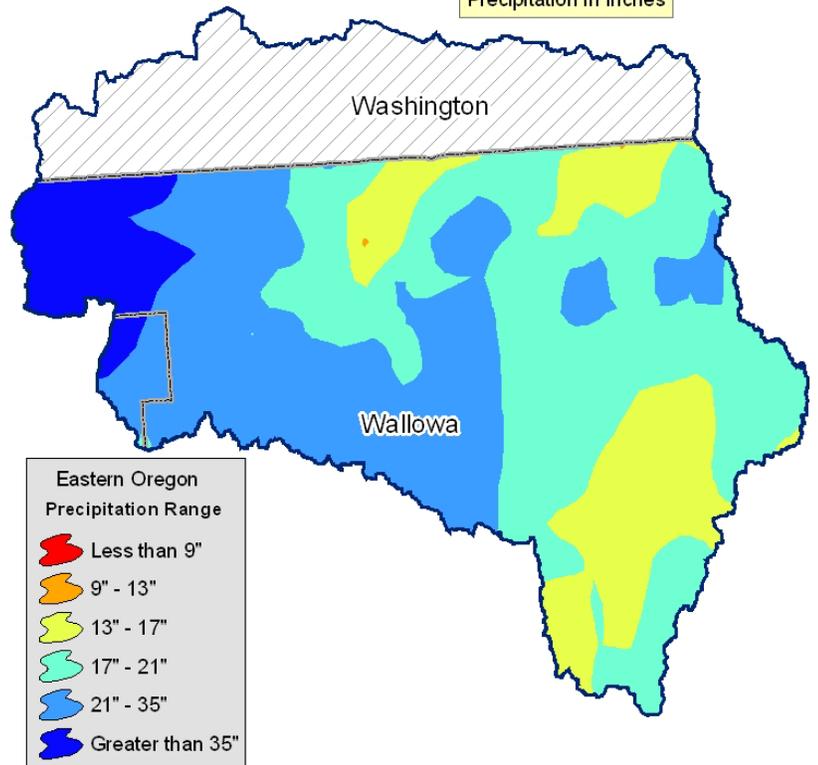
[Back to Contents](#)



Legend

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

17060106
Average Annual
Precipitation in Inches

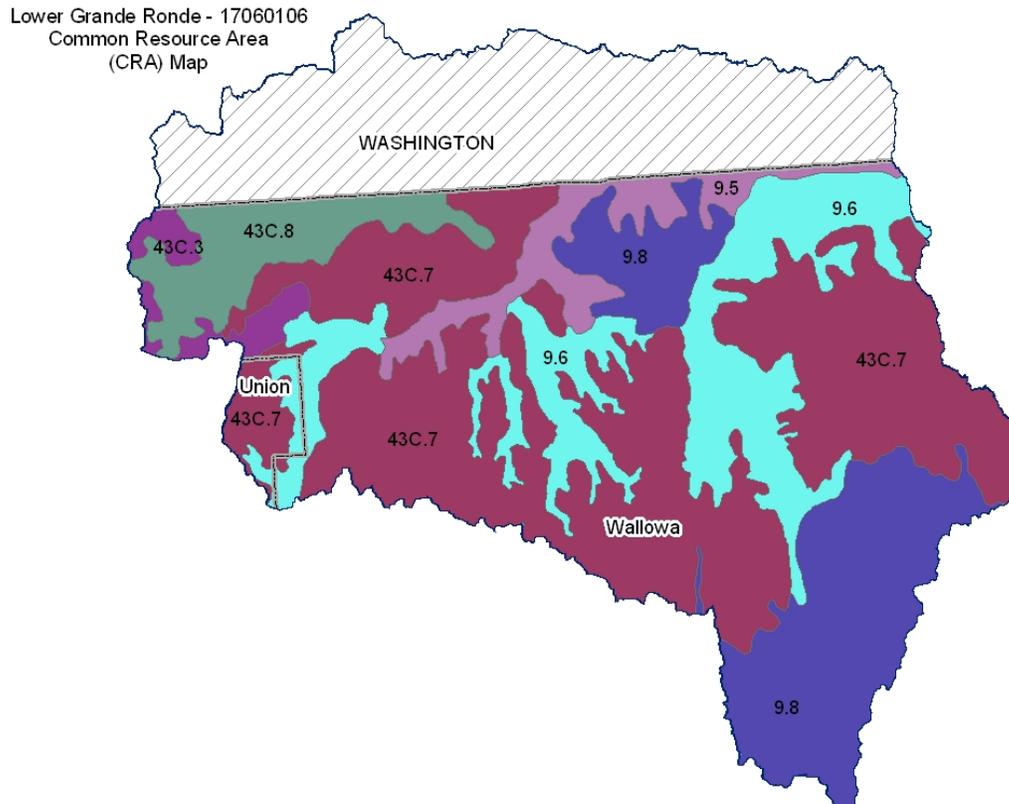


- Eastern Oregon
Precipitation Range**
-  Less than 9"
 -  9" - 13"
 -  13" - 17"
 -  17" - 21"
 -  21" - 35"
 -  Greater than 35"

Common Resource Area Map

[Back to Contents](#)

CRA Map - areas with a majority are listed below - for descriptions of every class within the HUC, go to: <http://ice.or.nrcs.usda.gov/website/cra/viewer.htm>



9.6 - Palouse and Nez Perce Prairies - Cool Canyons and Dissected Highlands: This unit is characterized by deeply dissected cool, moist canyon sideslopes of the Snake River drainage. This unit is at higher elevation but adjacent to unit 9.5 and also adjacent to forestland above the unit. The soils are typically moderately deep and shallow to bedrock. The dominant soil is Snell. Temperature regime is frigid; moisture regime is xeric. Precipitation is about 14 to 25 inches. Most areas are used for livestock grazing with Idaho fescue dominant.

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 the Watama, Bridgecreek, Hankins, Zumwalt, Hurwal and Ramo soil series. The soils are typically well drained and moderately deep to deep. Temperature regime is frigid; moisture regime is xeric. Precipitation is about 15 to 25 inches.

43C.7 - Blue and Seven Devils Mountains - Low Elevation Blue Mountain Forersts: This unit is a forested, uplifted basalt plateau. This unit is characterized by forested plateaus and highly dissected canyons having frigid temperatures. Slopes are nearly level to rolling except very steep in the canyons. Moisture regime is xeric and udic. Vegetation is dominated by grand fir, Douglas-fir and ponderosa pine. The soils in this unit typically have an ash mantle up to 20 to 30 inches thick.

43C.8 - Blue and Seven Devils Mountains - Blue and Seven Devils Mountains Dissected Uplands: This unit is characterized by deeply dissected forested mountain slopes. Temperature regime is frigid and the moisture regime is xeric. Vegetation is grand fir, Douglas-fir and ponderosa pine. The soils on the north facing slopes retain an ash mantle but south facing slopes lack this mantle due to erosion. Below about 4,500 feet elevation, the Douglas-fir forest changes abruptly to the grassland of the Warm Canyons and Dissected Uplands (CRA 9.5).

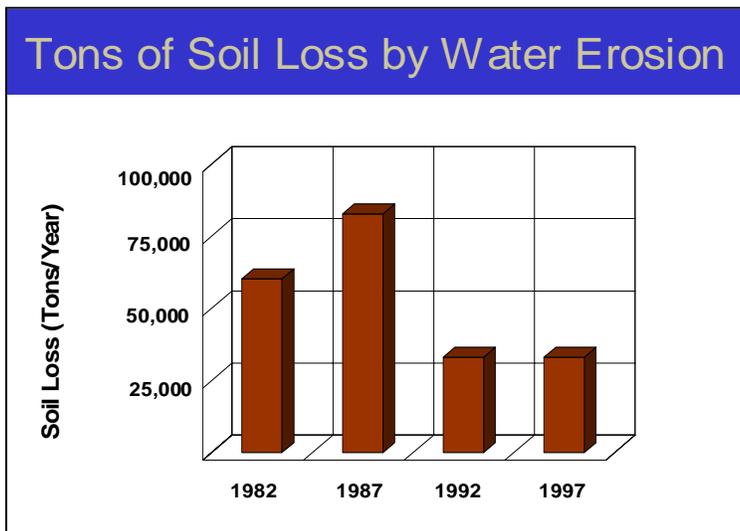
Physical Description – Continued

[Back to Contents](#)

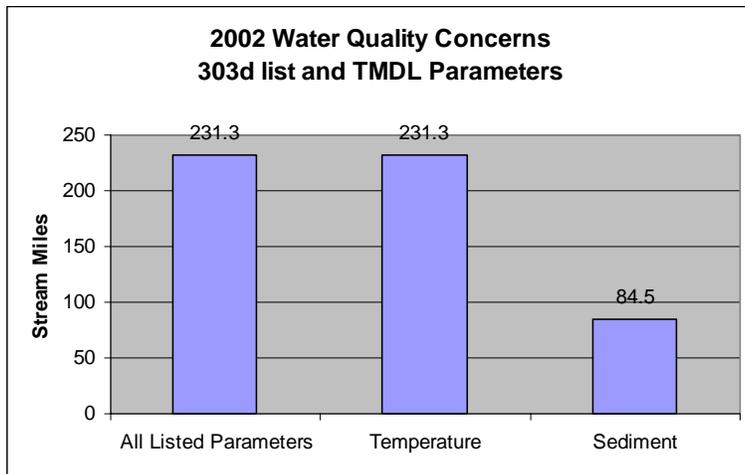
		ACRES	ACRE-FEET			
Irrigated Adjudicated Water Rights (OWRD ^{/4})	Surface	1,267	3,793			
	Well	1,086	3,251			
	Total Irrigated Adjudicated Water Rights	2,353	7,044			
Stream Flow Data	USGS 14120000 HOOD RIVER AT TUCKER BRIDGE, NEAR HOOD RIVER, OR	Total Avg. Yield	2,215,077			
		May - Sept Yield	1,013,851			
		MILES	PERCENT			
Stream Data ^{/5} <i>*Percent of Total Miles of streams in HUC</i>	Total Miles – Major (100K Hydro GIS Layer)	875	--			
	303d (DEQ Water Quality Limited Streams)	231	26%			
	Anadromous Fish Presence (Streamnet)	168	19%			
	Bull Trout Presence (Streamnet)	144	16%			
		ACRES	PERCENT			
Land Cover/Use ^{/2} based on a 100 ft. stretch on both sides of all streams in the 100K Hydro Layer	Forest	12,373	58%			
	Grain Crops	24	<1%			
	Grass/Pasture/Hay Lands	2,183	10%			
	Orchards/Vineyards	0	--			
	Row Crops	0	--			
	Shrub/Rangelands – Includes CRP Lands	5,670	27%			
	Water/Wetlands/Developed/Barren	961	5%			
	Total Acres of 100 ft stream buffers	21,211	--			
Land Capability Class (Croplands & Pasturelands Only) (1997 NRI ^{/3} Estimates for Non-Federal Lands Only)	I – slight limitations	0	--			
	II – moderate limitations	0	--			
	III – severe limitations	22,600	81%			
	IV – very severe limitations	900	3%			
	V – no erosion hazard, but other limitations	0	--			
	VI – severe limitations, unsuited for cultivation, limited to pasture, range, forest	0	--			
	VII – very severe limitations, unsuited for cultivation, limited to grazing, forest, wildlife	4,300	15%			
	VIII – misc areas have limitations, limited to recreation, wildlife, and water supply	0	--			
	Total Crop & Pasture Lands	27,800	3%			
	Confined Animal Feeding Operations – Oregon CAFO Permit – 12/2004					
Animal Type	Dairy	Feed Lot (Cattle)	Poultry	Swine	Mink	Other
No. of Permitted Farms	0	0	0	0	0	0
No. of Permitted Animals	0	0	0	0	0	0

Resource Concerns

[Back to Contents](#)



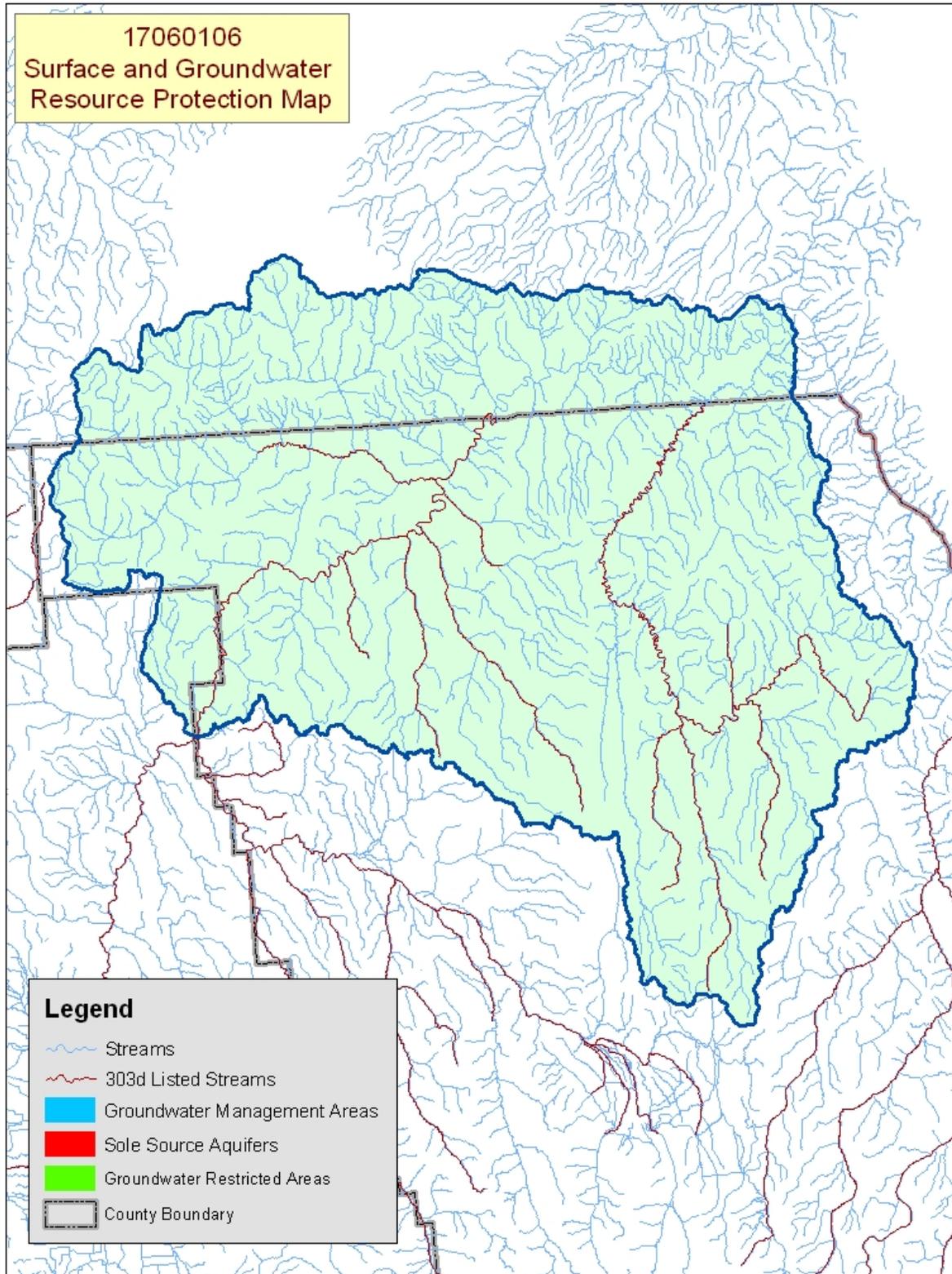
- ❖ Sheet and rill erosion by water on the subbasin croplands and pasturelands have been reduced by more than 27 thousand tons of soil per year from 1982 to 1997.
- ❖ NRI estimates indicate 8,400 acres of the subbasin agricultural lands still had water erosion rates above a sustainable level in 1997.
- ❖ Controlling erosion not only sustains the long-term productivity of the land, but 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 cultivated cropland fell 36 percent from 2.9 to 1.9 tons/acre/year from 1982 to 1997.



- ❖ All listed stream miles exceed state water quality standards for stream temperatures. Elevated stream temperatures may be due to inadequate riparian shade, stream channel widening, warm irrigation return flows, and other anthropogenic or natural sources.
- ❖ Stream reaches listed for sediment are affected by erosion on croplands and from streambanks.
- ❖ Conservation practices that can be used to address these water quality issues include erosion control, grazing management, irrigation water management and riparian buffers.

Watershed Projects, Plans, Studies and Assessments			
NRCS Watershed Projects ⁶		NRCS Watershed Plans, Studies & Assessments ⁷	
Name	Status	Name	Status
None		None	
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		NWPC Subbasin Plans & Assessments ¹⁸	
Watershed Council Assessments ¹¹			
Grande Ronde Model Watershed	To Be Completed Later	Lower Grande Ronde	

(Continued on page 8)



Resource Concerns - Continued

[Back to Contents](#)

Resource Concerns/Issues by Land Use							
SWAPA +H Concerns	Specific Resource Concern/Issue	Pasture\Hay	Grain Crops	Row Crops	Orchards\Nyrd	Shrub/Range	Forest
Soil Erosion	Sheet & Rill		X				
Soil Condition	Tilth, Crusting, Infiltration, Organic Matter		X				
Water Quality, Surface	Pathogens						
	Nutrients & Organics	X				X	
	Temperature					X	
Plant Suitability	To Site & Intended Use					X	
Plant Condition	Productivity, Health & Vigor	X					X
Plant Management	Establishment, Growth & Harvest	X					X
	Water – Quality & Quantity	X				X	
Animal Habitat, Wildlife	Water - Quantity & Quality		X				
	Food, Cover &/or Shelter					X	
Human, Economics	High Risk & Uncertainty					X	X
	Low or Unreliable Profitability	X	X				
Human, Political	Inadequate availability of Cost Share Programs	X	X			X	X

Grass/Pasture/Hay Lands

- Typical resource concerns are with the management of nutrients and forage productivity.
- On some operations, the lack of proper grazing management has lead to poor condition pastures.
- Low profits and lack of funding for conservation hinders further adoption.

Grain Crops

- Sheet & rill erosion and poor soil condition due to lack of adequate residue is common resource problem.
- Low profits and lack of funding for conservation hinders further adoption.

Shrub/Rangelands

- Rangelands can become infested with noxious weeds, annual grasses and shrubs due to inadequate forage and grazing management.
- Loss of riparian vegetation contributes to stream warming and nutrient loading.
- Lack of funding often limits conservation adoption.

Forest

- Much of the private forest lands are managed by private industrial owners who generally comply with state forest practices.
- Usually private non-industrial forestland is associated with small woodlots or rural homesites which are not actively managed for timber production.
- Lack of thinning and forest management can result in stagnate stands with low commercial value for wood products, livestock grazing or wildlife habitat.
- High costs, unreliable markets and inadequate incentive programs limit forest management activities on private, non-industrial forest lands.

FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES ^{/12}	
Threatened Species	Candidate Species
Marine – None Birds - Bald eagle Fish - Steelhead (Snake River Basin), Chinook salmon, Bull Trout (Columbia River population) Plants – McFarlane's four o'clock, Spalding's Catchfly, Howell's spectacular thelypody	Fish - None Birds – Yellow-billed cuckoo Amphibians and Reptiles – Columbia spotted frog Plants – Slender moonwort PROPOSED SPECIES None
ESSENTIAL FISH HABITAT ^{/13} - Chinook	

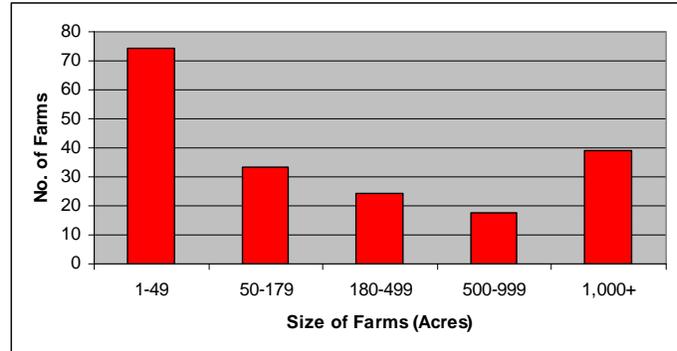
Census and Social Data^{/14}

[Back to Contents](#)

Number of Farms: **189**

Number of Operators: **315**

- Full-Time Operators: **113**
- Part-Time Operators: **202**

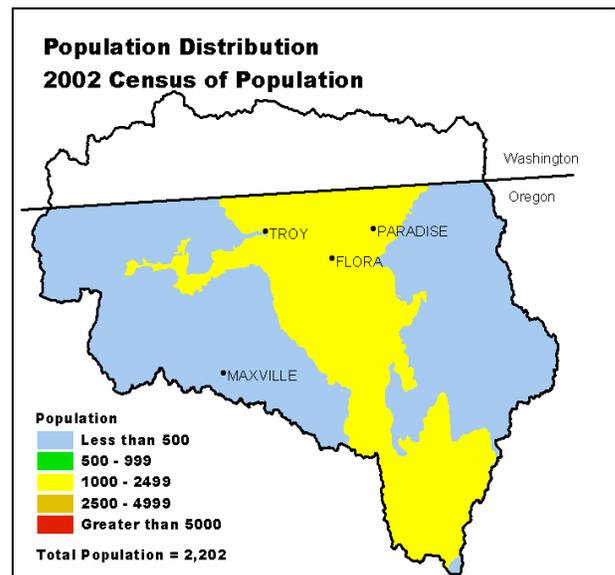
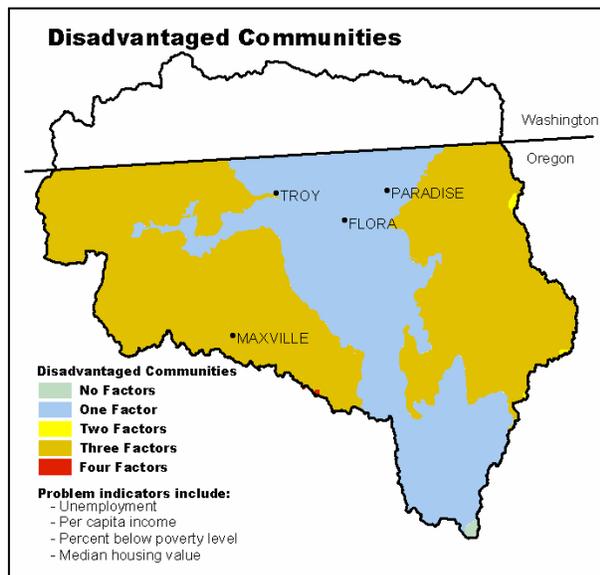


Estimated Level of Willingness and Ability to Participate in Conservation^{/15}:

Moderate to High

Evaluation of Social Capital^{/16}:

Low to Moderate – ranging from 49 to 52 of a possible 76.



Overall, individual conservation participation among Oregon farmers and ranchers in the Lower Grande Ronde watershed is average to slightly above average. Increasing individual conservation adoption may be possible by tailoring technical assistance to meet the specific needs of the watershed's ranchers and farmers, and by identifying additional incentives. Incentives related to family, stewardship, and the future of ranching in the watershed may be valuable enticements to encourage the adoption of conservation when monetary incentives alone are not successful.

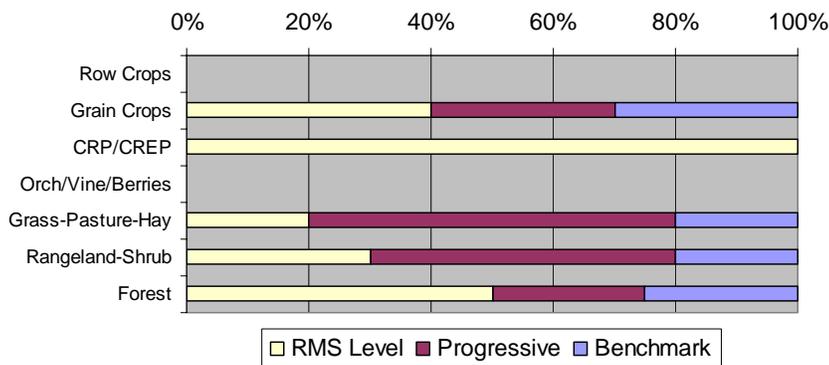
The agricultural community is supportive of conservation and has good leadership and widespread participation in most community activities. Expanding local conservation information and education programs throughout the watershed would be helpful. Individual adoption of conservation practices and systems may be accelerated by improving the awareness of natural resource problems and concerns within the community as a whole.

Progress/Status

[Back to Contents](#)

PRMS Data	FY99	FY00	FY01	FY02	FY03	Avg/Year	Total
Total Conservation Systems Planned (Acres)	526	360	2,359	988	5,169	1,880	9,402
Total Conservation Systems Applied (Acres)	29,293	470	1,611	7,122	4,616	8,622	43,112
Conservation Treatment Acres							
Waste Management (number)	0	0	0	0	0	0	0
Riparian Forest Buffers (acres)	0	0	83	108	588	156	779
Erosion Control (acres)	103	0	1,416	465	600	517	2,584
Irrigation Water Management (acres)	0	70	0	0	0	14	70
Nutrient Management (acres)	0	0	0	0	0	0	0
Pest Management (acres)	0	0	0	0	72	14	72
Prescribed Grazing (acres)	1438	680	0	5536	722	1675	8,376
Trees & Shrubs (acres)	25	0	52	60	26	33	163
Conservation Tillage (acres)	0	360	0	350	35	149	745
Wildlife Habitat (acres)	819	3	804	155	1065	569	2,846
Wetlands (acres)	0	0	0	0	0	0	0

Resource Status Cumulative Conservation Application on Private Lands



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

- ❖ Progress over the last five years has been focused on:
 - ~ Erosion control on grain.
 - ~ Prescribed grazing on grazing lands.
 - ~ Wildlife habitat management on riparian areas (CREP) and uplands (CRP).
- ❖ Resource Concerns have or are being addressed on 70% of the grain crops.
- ❖ Hay producers are predominantly operating at a RMS level.
- ❖ Most private industrial timber owners are doing good conservation work and are satisfying state forest practices.
- ❖ Private non-industrial forests, not managed for timber, usually are not meeting state forest practices.

Lands Removed from Production through Farm Bill Programs

- ❖ Conservation Reserve Program (CRP): **4,186 acres**
- ❖ Wetland Restoration Program (WRP): **none**
- ❖ Conservation Reserve Enhancement Program (CREP): **503 acres**

Footnotes/Bibliography

[Back to Contents](#)

All data is provided "as is". There are no warranties, express or implied, including 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, Federal, Tribal, State, and Local. This will be a seamless, statewide Oregon Public Ownership vector layer composed of fee ownership of lands by Federal, State, Tribal, County, and City agencies. The layer will be comprised of the best available data compiled at 1:24,000 scale or better and linework will match 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 or 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, Publication_Information: Publication_Place: Sioux Falls, SD USA, Publisher: U.S. Geological Survey, Online_Linkage: <http://edcwww.cr.usgs.gov/programs/lccp/nationallandcover.html>, Description: 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 due to 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/wrexport.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 Resource Conservation Service, Watershed Projects Planned and Authorized, <http://www.nrcs.usda.gov/programs/watershed/Purpose>.
7. Natural Resource 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 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 degree of social capital helps a community to be physically healthy, socially progressive, and economically vigorous. Low amounts of social capital typically result in community conflict, lack of trust and respect, and unsuccessful attempts to solve problems. The evaluation used 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>.