

**League of Women Voters of Umpqua Valley
Local Water Study
Phase One Report**



Main Stem of the Umpqua River. Photo taken July 2008.



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Phase One of this study explores how our county is managing the water of mainly the Umpqua River Basin. Our goal has been to provide a summary of what we have learned from interviews with county officials, research on the internet, publications and materials from other interested organizations.

Phase Two, which will be completed in a year, will explore the policy implications of the information contained in this interim report. Local League members will discuss the materials from both reports, develop a policy consensus and issue an official position statement.

This interim report was compiled by the Local Water Study Committee of the League of Women Voters of Umpqua Valley. The committee members are: Robin Wisdom, Sally McKain, and Anna Willman.

Water from different resources is withdrawn both for use and for consumption in diverse human activities. The term use refers to all human activities for which some of the withdrawn water is returned for reuse (e.g., cooking water, wash water, and wastewater). In contrast, consumption means that the withdrawn water is non-recoverable. For example, evapotranspiration of water from plants is released into the atmosphere and is considered non-recoverable.

Source: BioScience. October 2004. Water Resources: Agricultural and Environmental Issues. Vol. 54 No. 10. p. 3.

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The Umpqua Watershed

The Umpqua river system is one of southern Oregon's best remaining salmon and steelhead streams on the West coast. The North Umpqua River's deep and relatively straight east-west canyon reveals a cross-section of the region's geological past, from the Mt. Mazama-dominated High Cascades geology to the east and much older geology of the Western Cascades Geologic Province.

Prehistoric peoples lived here when Mt. Mazama erupted about 7,700 years ago, and because of this, the area is one of the most abundant archaeological sites in Oregon.¹

The Umpqua River Basin consists of 2,996,000 acres and uniquely shares the same general geographic boundary as Douglas County, which is an area of 5,071 square miles extending from the Pacific Ocean to the Cascade Mountain range. It is the largest watershed draining into the Oregon coast south of the Columbia and the 11th largest drainage basin in the State of Oregon.²

The Umpqua Basin is part of the Southern Oregon Coastal Basin which includes the drainages of the Umpqua, Rogue, and several coastal rivers.³



In the wild and scenic section Rattlesnake Mountain overlooks the North Umpqua River.

The three main rivers of the Umpqua watershed are the North Umpqua River (106 miles long), the South Umpqua River (104 miles long), and the main stem of the Umpqua (112 miles long).⁴

There are also many other water bodies in Douglas County besides rivers. There are 104 reservoirs, 6 basins, 1125 streams and rivers, 70 lakes, 48 dams, 22 waterfalls, 25 mines, 5 swamps, and 26 bays.⁵

The North Umpqua River

The source of North Fork of the Umpqua River is Maidu Lake less than a mile from the Cascade Crest,⁶ Mt. Thielsen, elevation 5,980 ft, in the Mount Thielsen Wilderness. It flows from the Cascade Range to the Pacific coast. The bedrock geology in the headwaters is High Cascades Quaternary volcanic rock type. The stream then passes through the Western Cascades geologic province dominated by the Little Butte Volcanic series.⁷

In 1988, Congress designated 33.8 miles of the North Umpqua River as a Wild and Scenic River and classified it as recreational. The wild section begins at the confluence of Rock Creek (river mile 35.5) near Swiftwater Bridge and ends at Soda Springs (river mile 69.3). There are five resources listed as "Outstanding Remarkable Values: Fish, Water, Recreation, Scenery, and Cultural Resources."⁸

There are three areas with wilderness designation on the North Umpqua: Boulder Creek (19,100 acres), the Rogue-Umpqua Divide (33,000 acres) and Thielsen (55,100 acres) for a total of 107,200 acres. (The Umpqua National Forest contains one million acres.)

The North Umpqua River is cooler in the summer than the South Umpqua. The North has High Cascade impacts, but the South does not. The High Cascades serve the North watershed with storage capacity, the porous pumice-covered aquifers from which the North Umpqua springs forth in Lake Maidu, attributed to be its headwaters. The High Cascades receives more snow providing melt water much later into the season than in the Western Cascades. Also, temperatures are much cooler in the summer in the North, mainly because of the high volume of cold water flowing out of the bedrock.

The North's water quality is described as "good," although in the summer it gets warmer with a lower flow. Thus, nutrient problems occur. For instance, below the two powerstation reservoirs beneath Soda Springs Dam and Tokatee in the Pacificorp eight-dam complex, algae blooms in the summer time.

Naturally occurring nitrogen and phosphorus in the water is usually taken up by plants on the streambank as the river flows. However, because the stream water is forced through pipes into a canal and then replaced into the river, the water contains the full load of nitrogen and phosphates, thus causing concentrations of algae below powerstations.⁹

The South Umpqua River

The headwaters of the South Fork of the Umpqua River is in the western Cascades north east of the town of Tiller, Oregon and about 12 miles west of Diamond Lake. Almost the entire South Fork basin is dominated by the Western Cascades geologic province. The North and South rivers join downstream of the City of Roseburg.

The South Umpqua River is a tributary of the Umpqua River in southwestern Oregon. It drains part of the Cascade Range east of Roseburg. The river runs through a remote canyon in its upper reaches in the Rogue-Umpqua Divide Wilderness and then emerges in the populated South Umpqua Valley near Roseburg.

The South Umpqua subbasin is the most populated and most challenged with respect to water quality. Over the last 100 years of forest management both private and public, the South Umpqua River riparian zones (streambanks) have been severely degraded.¹⁰

The Main Stem of the Umpqua River

The North and South Umpqua Rivers meet below Roseburg at River Forks Park and join to create the main stem of the Umpqua River that flows through ancient sandstones of Eocene age to the Pacific Ocean.¹¹ The mouth of the Umpqua River is in the town of Reedsport, Oregon.

Similar to the South Umpqua this river stretch is not as pristine as the North Umpqua. This is because there is less public land ownership around those rivers. The

Main Stem Umpqua River. Photo taken July 2008.



Umpqua National Forest UNF) protects the North Umpqua and upper South Umpqua Rivers. Tree harvest is much more aggressive on private land in Oregon.

Fisheries on the Umpqua Rivers

The Umpqua is one of Oregon's most important producers of spring chinook, fall chinook, winter steelhead, summer steelhead, coho, and sea-run cutthroat trout. The Umpqua system accounts for more total and wild coho spawners than any other river system in Oregon and about 15% of coho spawners coast-wide.¹²

According to the Umpqua National Forest anadromous fish, such as Coho and Chinook salmon and steelhead (sea-run trout) and rainbow, brown and cutthroat trout, swim, feed and spawn in the rivers and streams of the Forest.¹³

In the 1930s the entire South Umpqua watershed was inventoried and the data was vastly different from today's. The South was a larger producer of salmon than the North. It was warmer than the North but not too warm to support fish. Now it's too warm to support salmon in the summer.

Coho are having difficulty in the South Umpqua where they were once abundant. Summer steelhead are extinct. Water is 100% appropriated on the South Umpqua River with about 10% left for fish. Winter steelhead is the best run on the South, not as in the past. There's been huge habitat loss. Juvenile salmon spend two or three years in their natal stream before going to the ocean. Their survival depends on the quality and quantity of fresh water.

Small mouth bass, an invasive species, have taken over fish and fauna on the South Umpqua. The river is dominated by 90% small mouth bass.

The Smith River is considered to be similar and part of the estuarine of the main Umpqua as both have similar geology and hydrology. There's no small mouth bass in the Smith River yet. The bass don't like salt water and the mouth of the Smith is in the estuarine of the Umpqua River. Evidently no one has planted small mouth bass farther up the Smith.¹⁴

Regulating the Umpqua

In 1955, Oregon established "Minimum perennial streamflows" which are administrative rules in basin programs that set (usually monthly) flow levels for fish, water quality and recreation. Newer water rights must yield to these "minimum" flows, which means to reserve a minimum amount of water from further appropriation that will conservatively serve fish, water quality or recreation needs. Minimum streamflows were established on the Umpqua in 1958.

In 1987, the Oregon Legislature created instream water rights to address some of the problems of minimum instream flows. The new statutes provided an improved means for protecting instream flows by broadening the kinds of uses eligible for instream flow protection and brought the Parks system in as a key player in instream matters. The Umpqua River basin was the first in the state to receive instream flow protections under the appropriation system.

Instream “public” uses are: recreation, pollution abatement, navigation, conservation, maintenance, and enhancement of aquatic life, wildlife, fish and wildlife habitat, any other ecological value (ORS 537.332).¹⁵

Water Quality

Water quality trends in the main stem Umpqua are mixed. Comparing minimum seasonal Oregon Water Quality Index (OWQI) values water quality in the Umpqua basin ranges from good (North Umpqua River site) to very poor (Deer Creek site). Water quality data were routinely collected by the DEQ Laboratory in 1986-1995.¹⁶

Section 303(d) of the federal Clean Water Act requires each state to develop a list of water bodies that do not meet standards, and to submit this list to the U.S. Environmental Protection Agency every two years. The “303(d) list” provides a way for Oregonians to identify and prioritize water quality problems. The list also serves as a guide for developing and implementing watershed pollution reduction plans to achieve water quality standards and protect beneficial uses.

In 2002 the Oregon 303(d) list includes more than 13,300 stream miles that are listed for at least one water quality pollutant. Exceedances of temperature and bacteria are the most common, followed by dissolved oxygen. The 1998 303(d) list included more than 13,700 stream miles that were listed for at least one pollutant. About 5,000 miles have been added since the 1998 303(d) list for at least one pollutant.¹⁷

Total Maximum Daily Loads (TMDLs): defined amounts of pollutant that can enter water and still maintain beneficial use for water.

Nutrient enrichment is the underlying cause for most of the Umpqua Basin's 303(d) listings for dissolved oxygen, pH, phosphorus, chlorophyll and aquatic weeds/algae. Elevated stream temperatures and water which has little natural capacity for nutrient assimilation due to the area's geology contribute to the problems. Both nonpoint and point sources contribute nutrients, but streams with wastewater treatment plants typically show the most impact, particularly in the late summer and fall.

There are also 31 listings for dissolved oxygen, pH, phosphorus, chlorophyll and excess algae. Most of these listings (29) are addressed by Total Maximum Daily Loads (TMDLs). One fall-winter-spring dissolved oxygen listing (for Calapooya Creek) has changed as a result of revised standards, and further monitoring is needed to determine pollution limits.

The TMDLs address 219 out of 262 listings of impaired waterbodies in the Umpqua Basin, and almost one third of Umpqua Basin streams. Implementation of the waste load allocations and load allocations is expected to bring those waterbodies back into compliance with water quality standards to protect beneficial uses. The other 43 listings will await new methods or additional data before TMDLs or other assessments are completed.¹⁸

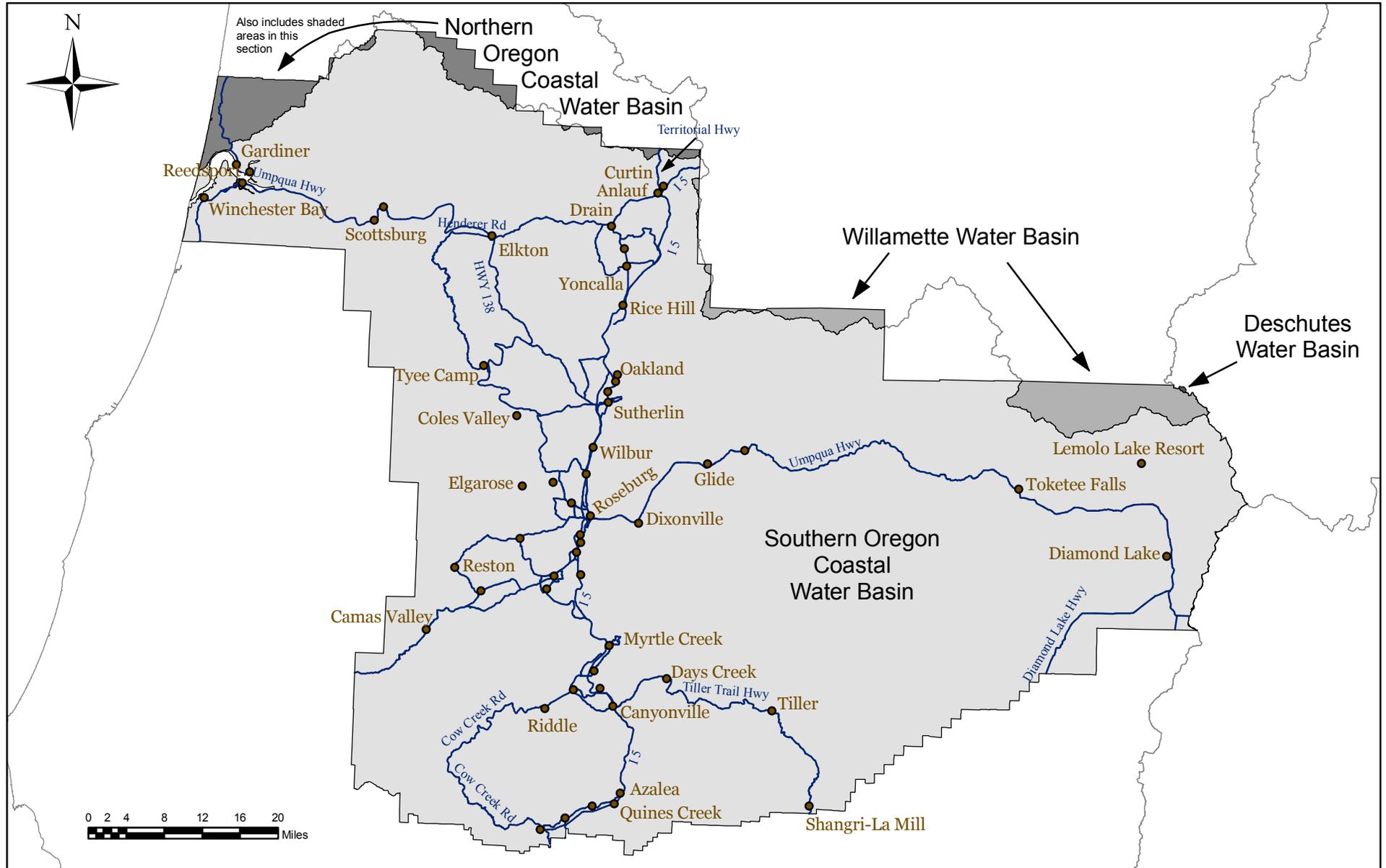
Oregon Administrative Rules (OARs) Specific to the Umpqua Basin

340-041-0320 —Beneficial Uses to Be Protected in the Umpqua Basin – This table shows which river segments are protected as designated uses dated November 2003.

340-041-0324 —Approved TMDLs in the Basin – addresses one TMDL for Little River for temperature, pH and sediment dated January 29, 2002.

340-041-0326 —Water Quality Standards and Policies for this Basin – sets maximum pH levels for marine, estuarine waters and Cascade lakes above 3000 ft altitude; sets a maximum for total dissolved solids, turbidity and summer time effluent concentrations to be authorized by the DEQ.¹⁹

PURS Water Basins - Douglas County



This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information. ODA Map Number 1028. Proj: Lambert Conformal Conic, NAD 83.

Drinking Water in Douglas County

There are 41 water systems operating in Douglas County according to the State Health Division website, www.oregon.gov/DHS/ph/dwp/index.html. These include both small and large populations, from 10 for the Rice Hill West Subdivision to 28,800 for the City of Roseburg, at Winchester. A detailed list is available at this website, PWS - public water systems - registration numbers. Reports can be accessed with these numbers.

All but four public water systems use ground water wells as main sources, and three use springs. The rest use surface water of rivers, creeks or lakes.

The 2006 census estimated the population of the county to be 105,117 persons. The majority of them (approximately 84,068) use surface water as a source for drinking water. The remainder (20,149) are assumed to be using wells, springs, or other sources. This percentage is about 80% surface water, and 20% ground water. This factor is obtained by subtracting the number of users of the 41 public water systems from the total population. This is necessary since information about water used from private wells is not completely known or recorded. Well registration is a recent state requirement and many wells are not recorded with the state. There are thousands of well logs registered with the county, but no agency is monitoring wells, or has data on what they are used for. Also abandoned wells are not always reported to the water resources department. Only when property is sold is there a requirement for testing wells, at the expense to the seller.

All 41 water systems are monitored by the public health department for coliform, arsenic, chemical detection, lead, copper, and nitrates. Reports for these are available online.

Only one water testing provider for drinking water exists in the county. This is Umpqua Research Company, 626 NE Division, Myrtle Creek. For testing of coliform and nitrates it currently costs \$38, and for arsenic, an additional \$32. A complete array of tests including metals costs \$200. Some well owners test twice a year for coliform, summer and winter, as water levels influence the chance of contamination, according to staff at this facility.

Monitoring of water occurs under the coordination of the State Health Department and the Department of Environmental Quality. Within the state they have information on 15,000 water facilities or land uses that may release contamination to 2038 public drinking water sources. The Water Policy Review Board - WPRB - and the Water Resources Department - WRD - overlap each other in working with our local Water Master. There is also a Strategic Water Planning Group (as of 1983) involved with the Umpqua Basin Program, for surface and ground water management. These programs include interests of the Oregon Department of Agriculture and Oregon Department of Forestry. But the final say comes from the Health Division about drinking water, whether there is a public risk or not.²⁰

Dave Williams, District #15 Water Master, enforces water rights and responds on a complaint driven basis from the public. Since all of the waters of Oregon are managed by the State for beneficial use, including the use of fish, the fact that the Umpqua Basin's waters are over appropriated makes this a challenging job.²¹ (For more information on the role of the Water Master, see Appendix A)

There is stored water at Galesville and Ben Irving impoundments, for additional distribution, but this water is limited due to snow melt and rainfall amounts each season.

The increasing population of the county results in increasing need for clean drinking water. Conservation of water is inherent in water rights, as the law requires use without waste. However, the additional rule that if the water right is not used, it can be forfeited after five year, may confuse some into "over-using" their right, with the misconception they may lose their water right. There have been situations where owners of water rights continue to withdraw water, even when it is not needed, to insure they are not challenged by a complaint from a neighbor.²²

Land planning decisions can occur without analysis of available water, or of affecting nearby wetlands. The Water Master can comment on Conditional Use Permits only. The Planning Department grants Land Partition Permits.

In the 1970's the Health Department investigated risks to the public of exposure to Red Rock Road, and the waste from the Bonanza mine, located six miles east of Sutherlin. High levels of arsenic in private wells were found, and testing of drinking water can be done for free in certain areas. The road was also capped to prevent further red rock dust from exposure to the public.²³

Another toxic site is the Formosa mine, 25 miles south of Roseburg. Storm water runoff has released approximately 5 million gallons of acid rock drainage annually. This puts about 30,000 pounds of dissolved copper, zinc, and other metals into Middle Creek and the South Fork, and Cow Creek. Severe degrading of the habitat of the waters includes coastal steelhead trout, and Oregon coastal coho salmon. This site is on the National Priorities List - NPL - and reclamation efforts have to date not been completely successful. Significant concentration of metals is still detected in all source samples collected at the site.²⁴

Winston, Oregon has a successful pharmaceutical take-back program to keep prescription drugs out of the water supply. After just one month of this new program, Police Chief Scott Gugel reported that their city of 5,000 people had returned enough medication containers to fill a 55-gallon trash bag, and enough multicolored pills to fill a 2 and 1/2 gallon bucket.²⁵

The Oregon Association of Clean Waters Agencies estimates that 1 million prescriptions are filled, but unused annually in Oregon. Some of which are simply flushed down the toilet. There is a bill introduced during the 2009 legislature to involve pharmaceutical manufactures and drug companies to help people dispose of unwanted medicine.

In Melrose there was a complaint driven reassessment of a drinking water system used by 58 families. After four decades of use the River Bend West Water Association was threatened with losing their drinking water. Under the federal Safe Drinking Water Act, water designated for irrigation cannot be used for drinking unless it is treated to remove bacteria. The water system was drawing water that was initially permitted only for irrigation. The entire system now requires a filtration system that would be monitored by the water association, including periodic testing. And additional water rights may be available from Galesville Reservoir, for cost, to replace the households that have domestic rights from an unnamed seasonal stream that dries up during the summer.²⁶

Most water regulation is complaint driven, and testing for contaminants depends on the interest of different parties. If a person lives near a toxic site, or has knowledge of reports from neighbors, they may take the extra steps to test their drinking water. Most consumers of water from public systems assume their water is pure. When problems arise within a water treatment system, DEQ offers best practices to

correct the problem. If the contaminant in the water could be a public health risk, the Health Department takes action. So, with more understanding of how the unique basalt underground reservoirs interact in the Umpqua Basin, and that both temperature, chemical household discharges, and nonpoint source runoff affects the water we drink, there appears an increasing need for subsidized testing to occur. Education for the public based on increasing conservation and the value of buffers like wetlands, could put protecting our drinking water on every community's agenda.

Wastewater Treatment and uses in Douglas County

Wastewater Monitoring

In Oregon wastewater treatment plants are self monitoring. Facilities permitted by the DEQ are typically required to conduct laboratory analyses on wastewater discharges to determine if permit limitation are being met. The results are submitted to the DEQ in a discharge monitoring report (DMR). Manually tracking of DMR is slow, but DEQ's Management Services Division is developing a centralizing compliance database to track all agency enforcement efforts.

The DEQ does inspections of wastewater treatment plants as time permits. With limited staff complaints are what alert the DEQ staff to most violations.

The wastewater treatment facilities are public entities that often are run by contracted companies like CHM2Hill Engineering to run the treatment plants.

Local Treatment Plant Issues

Many cities in Douglas County are facing higher sewer rates in order to repair or replace failing treatment plants. The new plants and upgrades are necessary, not only because of age of these facilities, but also because new standards for wastewater being returned to the rivers are much stricter now than when the original plants were designed.

A brief summary of the current status of wastewater systems in different Douglas County municipalities follows.

Oakland has had to raise their rates due to increasing chemical costs alone. According to the city council the plant has no money for repairs or replacement if anything should break.²⁷

Winston-Green is planning a wastewater upgrade and reuse which includes:

- A 3.5 mgd wastewater treatment plant upgrade.
- Achievement of effluent levels meeting the Oregon Department of Environmental Quality Level II requirements for water recycling.
- Pumping 1.0 mgd of recycled water to the 600-acre Wildlife Safari animal park near Roseburg.²⁸

Riddle recently received a Community Development Block Grant (CDBG) of \$654,000 to improve its wastewater treatment plant, which is over 30 years old and has exceeded its original design life.

Operation of the **Glide** treatment plant on the North Bank road, formerly operated by the county, has been handed over to the users, creating a new Glide-Idleld Sanitary District.

Myrtle Creek is building a new state of the art treatment plant which serves and is jointly owned by both Myrtle Creek and Tri City. The new plant, which had been designed to last twenty years, will be up to the standards set by the DEQ and EPA for years to come. “It’s up to standards that aren’t even set yet” said Myrtle Creek Superintendent Steve Turner. The new plant cost more than \$10 million and is being constructed around the old one, which was built in 1971. Funding for the new plant came from the Oregon Economic and Community Development Department, a special Myrtle Creek Public Works fund and primarily, a loan from DEQ.²⁹

Myrtle Creek will also participate in a new statewide study being conducted by Oregon State University to determine the extent of drug use across Oregon through an analysis of local wastewater systems. The concept is simple, according to City Administrator Aaron Cubic: It’s like taking a urine sample from the entire community.³⁰

Roseburg received notice from the Oregon Department of Environmental Quality in October 2006 that it would no longer be allowed to dump treated wastewater into the Sough Umpqua during the summer months.

The U.S. Geological Survey did a study in cooperation with Douglas County, of the effects of nutrient loading on water quality in the South Umpqua River Basin, which showed that five wastewater-treatment plants contributed less than 15 percent of the flow, but more than 90 percent of the nitrogen and phosphorus in the South Umpqua River during low streamflows in summer.³¹

The discharge of elements used to treat the water, such as nitrogen, phosphorus, ammonia and chlorine, had boosted the algae content of the river with serious negative consequences for the fish population.

The new restriction meant that the Roseburg Urban Sanitary Authority (RUSA) has had to figure out what it was going to do with the 3 million gallons of effluent produced daily by its 10,000 customers. While the existing plant has plenty of capacity – it’s designed to process 7.9 million gallons per day – the challenge was to create a system that would keep the harmful effluents out of the South Umpqua. At the same time, failure to return the water to the South Umpqua during the proscribed months could result in lowering summertime water levels, which would also endanger the fish.

RUSA considered several alternatives, including using the wastewater to irrigate a golf course, or to fertilize a poplar plantation, but these would not have absorbed enough of the harmful effluent, according to Ron Thames, interim manager for RUSA.

After consulting with engineers, the agency finally determined to create a natural treatment system that will be the first of its kind in the state. RUSA will pump its treated wastewater to a 340-acre ranch, located a half-mile west of the treatment plant. The effluent will be distributed across the ranch, creating wetlands, ponds and lush hillsides as the fluids seep into the land and act as fertilizer.

The seepage will eventually find its way to Sylman Creek, keeping it flowing in the summer, and to the South Umpqua River, keeping the water flow high, but only after the harmful nutrients have been deposited in the ground.

“The whole idea is to have a cleaner, healthier South Umpqua for the fish,” Thames explained, while noting that’s also a mandate from the Environmental Protection Agency.

On the ranch, which RUSA began purchasing more than 10 years ago, wildlife should flourish as the hillsides remain green and lush year-round. The project is expected to be in service within 18 months.

The cost of the project, which will include digging ditches and ponds and installing pumps and piping, is estimated at \$10 million and requires a rate increase for RUSA customers.

However, this cost is minimal when compared to the potential costs (estimated to be as high as \$134 million) of building a new treatment plant or upgrade capable of dealing with the summertime wastewater.³²

Reuse of Wastewater

Other, ongoing forms of the re-use of wastewater in Douglas County, include Sutherlin’s use of recycled wastewater to water its golf course and RUSA’s use of methane gas (a by product of biosledge) to heat its treatment plant buildings and offices. Liquid and cake sludges are also being spread on fields, returning organic matter and nutrients to the soil.

Buying and Selling of Water in Douglas County

Water is a publicly owned and managed resource in the state of Oregon. To use (and sell) water, individuals and entities need a water right from the state for all surface water and for any underground (well) water above the amount of 5,000 gallons per day.

The city of Roseburg has a water right from the state (the Oregon Water Resources Department) for water from the Umpqua basin, and sells that water to individual customers for domestic use and to businesses for commercial use. A business might use the water in its manufacturing process, or it might resell the water, for example in providing jugs of water for water coolers in offices, or, like the Water Depot, in filling water tanks for individuals out in the country whose homes not attached to the city water lines.

For companies like the Water Depot, the city sells a bulk water permit for \$50 per month, which allows them to draw large amounts of water to resell. On top of their monthly fee, these companies pay the same rate per unit as regular water customers.

A few individuals who don’t have access to city water lines have their own water trucks and buy from the city in bulk as well, delivering their own water to their homes for domestic or agricultural use.³³

Ray Henas of The Water Depot has a bulk water permit – can get it 24/7 at the airport or weekdays at City depot on Diamond Lake Blvd. The Water Depot passes on the cost of the water, plus time and travel.

Flurry Supply started the water delivery business more than 20 years ago when oil companies were drilling in the Roseburg area. The oil companies were required to fill up the holes they drilled with water

and Flurry Supply brought the water for that. Then afterwards they made use of the equipment for individual water delivery.

Flurry Supply did not have a permit. They got the water directly from their own business water faucet, and were billed for it like a regular customer. Without a permit, they were not allowed to charge their customers for the water, but just charge a hefty delivery fee based on the distance they carried the water.

The equipment is expensive – big truck, a \$13,000 pump, \$400 tires, etc. Ray Henas, would like to get out of the business because it keeps him tied down – can't go on vacation, takes time away from his ranch – but it's a job.

He thinks of it as an important service he provides. Many people tell him they don't know what they would do without him. He tries to keep the cost reasonable.³⁴

Appendix A: The Role of the Water Master

In Oregon there are 20 districts served by state Water Masters. The Umpqua Basin is District 15 with Dave Williams as a state employee. He enforces the rights of water users based on the rules of the Department of Water Resources. [interview with Dave Williams 3-21-08, in his office, Sally McKain]

Most of his job results from complaints from water users, and during times of water shortage, he notifies those who must be cut off their use. This law is from 1909 when the Prior Appropriation Doctrine was passed. And because most of the surface water in Oregon is over appropriated, this is a challenging effort, to balance the varied uses of both in stream water rights and out of stream water rights. The final step comes from the date of the water right, with the earliest users cut off last, or never.

Water in Oregon is owned by the public. [Water Rights in Oregon Marcy 2008, WRD booklet for public use.] Most uses require permits, whether for ground water, springs, or rivers and creeks. A fundamental purpose for permits is to insure the water be used, without waste, and have beneficial use. Currently, there are some exemptions allowed:

- Natural springs that do not form a channel and flow off the property.
- Stock watering from a source that has no diversions or modifications.
- STEP - Salmon and Trout Enhancement Programs.
- Fire control, water withdrawal in emergencies, or fire fighting training.
- Forest management such as slash burning and mixing pesticides.
- Certain land management practices.
- Rainwater collection from impervious surfaces.

Ground water exempt uses include:

- Stock watering.
- Lawn or noncommercial garden, not more than one-half acre.
- Single or group domestic purposes, not exceeding 15,000 gallons/day.
- Single industrial or commercial purposes, not exceeding 5,000 gallons/day.
- Down-hole heat exchange uses.
- Watering school grounds, ten acres or less within critical ground water areas.

Water rights are attached to the land, and must be maintained without a gap of five years. If not utilized, the right may be lost.

The right to store water also requires a permit. Ponds or reservoirs of any size may be allowed from higher stream flows during winter months. To use the stored water from the pond or reservoir needs an additional or secondary permit.

There are other rules about limited licenses for short term or fixed duration. And there are rules for temporary transfer of use of a water right, and for special transfers to change the point of diversion or for use on another parcel as long as the change does not injure other users.

The Water Resources Department approves water rights for protecting fish and for recreational uses. These “instream water rights” were established in 1987. The Departments of Fish and Wildlife, Environmental Quality, and Parks and Recreation may apply for water rights to minimize the effects of pollution, and to establish minimum flows to support fish habitat.³⁵

Endnotes

¹ Kerr, Andy. 2004. *Oregon Wild: Endangered Forest Wilderness*, p. 132.

² North Umpqua Wild & Scenic Environmental Assessment, 1992, page. 12

³ *Partnership for the Umpqua Rivers Action Plan*, June 2007. p.3

⁴ Department of Environmental Quality. *Umpqua Basin TMDL: Overview and Background*. chpt1overview.pdf. Accessed 4/26/09 from <http://www.deq.state.or.us/wq/tmdls/umpqua.htm>.

⁵ Accessed on 4/26/09 from <http://www.placenames.com/us/41019/ppl/>.

⁶ Kerr, Andy. 2004. *Oregon Wild: Endangered Forest Wilderness*, p. 132.

⁷ Pacific Coast Watershed Partnership. Accessed on 4/6/09 from <http://www.pacificwatersheds.net/coastalnetwork/umpqua.htm>.

⁸ Accessed on 2/2/09 from <http://www.oregon.com/rivers/northumpqua.cfm>.

⁹ Jeff Dose, Fisheries Biologist, Umpqua National Forest. Personal communication on 4/21/09.

⁹ Retrieved on April 23, 2009 from <http://www.surcp.org/>. Also personal communication with Stanley Petrowski on 3/27/09.

¹¹ Pacific Coast Watershed Partnership. Accessed on 4/6/09 from <http://www.pacificwatersheds.net/coastalnetwork/umpqua.htm>.

¹² *Partnership for the Umpqua Rivers Action Plan*, June 2007. p.3

¹³ Umpqua National Forest. Accessed on 4/23/09 from <http://www.fs.fed.us/r6/umpqua/about/>.

¹⁴ Jeff Dose, Fisheries Biologist, Umpqua National Forest. Personal communication on 4/21/09.

¹⁵ Bastasch, Rick. 2006. *The Oregon Water Handbook: A Guide to Water and Water Management*. pp. 112-113.

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- ³¹ This report is available online. [Download the report \(PDF, 0.8 MB\)](#) (*Adobe PDF Reader required; version 5 or higher preferred.*) A printed version of the full report is available free (while supplies last) from: U.S. Geological Survey, 10615 S.E. Cherry Blossom Drive, Portland, OR 97216 (ph: 503-251-3201, e-mail info-or@usgs.gov) and (at a nominal charge) from: U.S. Geological Survey, Information Services, Box 25286, Denver, CO 80225 (ph: 1-888-ASK-USGS, e-mail infoservices@usgs.gov).
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