

RSB JC UPDATE

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Lab Report: Water Quality Continues To Improve

Many Roza-Sunnyside farmers have redoubled efforts to clean up irrigation return flows. This is quite an accomplishment considering the trials and tribulations caused by this year's drought.

"More farmers and growers recognize the value of water quality. Having a year like this helps emphasize the conservation and efficiency components of the program and illustrate conservation can complement our Water Quality Program," said Ron Van Gundy, Roza Irrigation District (RID) Manager.

The net result: as more farmers strive for increased efficiency, water quality continues to improve.

Although statistically still mid-stream — that is the irrigation season is not quite over and data will continue to be collected through the fall — water quality has undoubtedly continued to improve during the 2001 irrigation season.

All four primary joint drains (Granger Drain, Sulphur Creek Wasteway, Spring

Creek, and Snipes Creek) have seen reductions in suspended sediment and continue to hold steady well below the 2002 TMDL objective. Granger Drain is the only joint return drain that may finish the season above the 90th percentile 25 NTU goal, but it is closing in.

SVID Assistant Manager/Operations Don Schramm anticipates the numbers will be improved over last year.

"It's still uncertain how the numbers will pan out by the close of the irrigation season," said Schramm. "But it seems the trend remains solid and going in the right direction."

Bill Rice, RSBOJC Water Quality Specialist, noted that there's a misconception that return flows are so low this year that water quality will naturally improve. "But that's not accurate," he said. "Most of the primary joint drains are on par with historical flows — or close enough for this not to be a measurable factor."

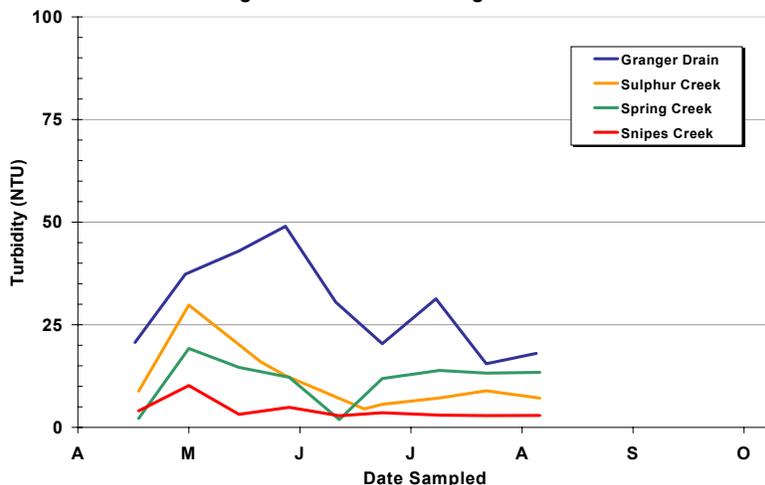
Even during a drought and with maxi-

mized efficiency, the drains will always return irrigation run-off, collecting surface and ground flow drained from thousands of upland acres.

Who deserves the credit, then? The farmers. "Since the program was implemented in 1997, it's the farmer who has paid for it, worked at it, and engendered fundamental changes in irrigation practices. These new technologies, management techniques, and perspectives are why our water quality is improving," said Schramm.

According to Jim Trull, SVID District Manager, "I am confident that together we can accomplish our goal" (25 NTU by 2002 at all drain spill points to the Yakima River). "We've come a long way, and it's been tough, but we're closing in on it every day, every month, every irrigation season."

**Seasonal Variability of Turbidity Measurements
Drainage Outlet Sites 2001 Irrigation Season**



In This Issue

Water Quality	1
SYCD Sub-Basin Study	2
Soil Moisture Probe Demo Project	2
RSBOJC Loan Program Results	3
Salmon On Rise	3
RSBOJC Completes Drain Habitat Study	4

SYCD Takes A Close Look At Sub-basin Water Quality

During the 2000 irrigation season, the South Yakima Conservation District (SYCD) collected water quality samples three days per week in sub-basins 5 and 10 of Sulphur Creek.

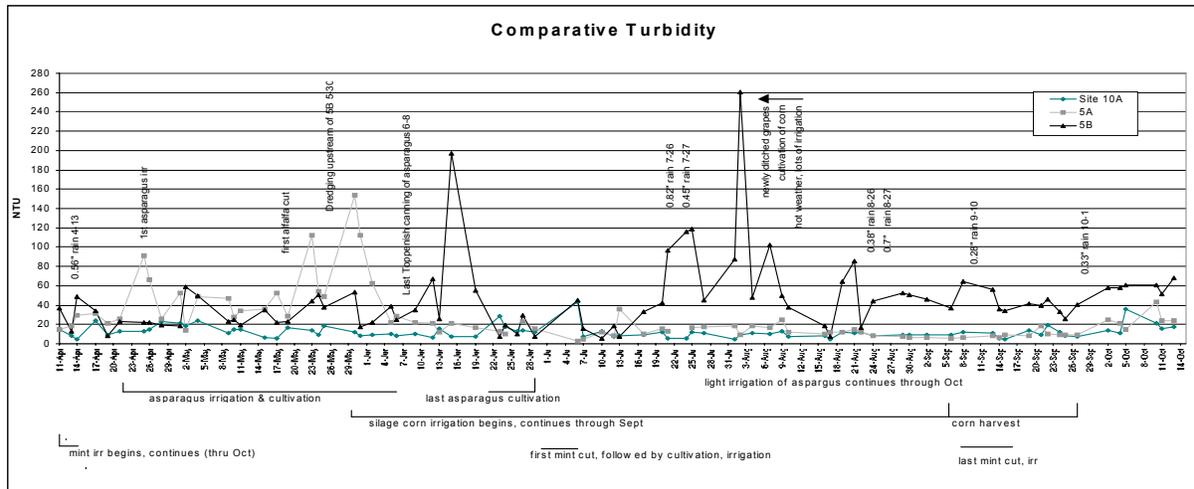
The results and conclusions have been compiled in the draft report, "Sulphur Creek BMP Evaluation Project 2000."

One of the highlights from the report: In 1994, sub-basin 10 had the highest total suspended solids loading of the entire watershed.

By 2000, sub-basin 10 had cleaned up so much that turbidities met the 2007 goal of the Lower Yakima suspended sediment TMDL (Total Maximum Daily Load)—seven years ahead of schedule.

The improvement in water quality was likely due primarily to converting over 20% of the irrigated acres in the sub-basin from rill to sprinkler, drip, or another more efficient method during those years.

If you would like a copy of the report or more information, please contact Marie Zuroske, SYCD, at 837-7911.



Soil Moisture Probe Demo Project A Huge Success

The RSBOJC Soil Moisture Probe Demonstration Project is nearing completion of its inaugural irrigation season. Twenty farmers are participating in the program and have successfully increased on-farm water conservation and efficiency.

The project is a partnership initiative being sponsored by several organizations, including the United States Department of Agriculture, RSBOJC, Washington State University Cooperative Extension, United States Bureau of Reclamation, and California Polytechnical Institute.

The purpose of the project is to increase on-farm water use efficiency while educating irrigators about the value of soil moisture probes as a water management tool.

The project duration is two years, but many farmers have already expressed interest in seeing the project continue.

Here are some quick facts about



the project:

Many different irrigation methods are being monitored, including wheel lines, rill, over-head sprinkler, drip, and micro-spray. Crop types include asparagus, alfalfa, grapes, hops, corn, pears, mint, and cherries.

Participating farmers received two probes with three sensors each at no cost.

Students from California Polytechnical Institute completed dis-

tribution-uniformity evaluations earlier this year and perform ongoing monitoring of the project, offering farmers valuable feedback about managing their irrigation method to improve results.

"Surprisingly, most of the recommended changes were as simple as cleaning a filter or adjusting an irrigation schedule," said Lori Brady, Sunnyside Valley Irrigation District (SVID) District Engineer. "The soil moisture probes provided valuable insights and feedback, showing farmers the impact of their irrigation practices."

With minor adjustments, farmers saw improved efficiencies and lower operational costs.

Water quality also benefits, since increased efficiency means less runoff.

"The program is a success." Said Mark Barnett, Roza Irrigation District

Soil Moisture Probe
continued on page 4

Now Is Time To Upgrade Rill Irrigation Systems

The total amount dispersed for the RSBOJC Loan Program as of August 2001 is \$2.6 million, which covers approximately 4500 acres.

Both districts are currently receiving applications and already have approximately \$2 million allocated for scheduled projects, with \$5 million still available.

The RSBOJC encourages all qualified landowners to take advantage of the loan program. It will be ending—at the earliest—fall of 2002. Although there is a possibility it will be extended through the fall of 2003, the only way to secure some low interest funding for an on-farm irrigation upgrade is to sign up now.

The objective of the Loan Program is to help landowners comply with the RSBOJC water quality policies.

Securing a funding source lifts some of the financial burden off farmers and enables them to implement on-farm irrigation projects to improve existing rill irrigation practices or upgrade their irrigation delivery system.

These projects ultimately improve the quality of irrigation return flows. Some of the basic guidelines of



Pictured above is a brand new overhead sprinkler system made possible through the loan program. The farm previously rill irrigated. According to the farmer, the new system has saved him time and money, plus enabled him to better manage his water quality.

this program:

- 1% interest rate
- Priority will be based on the first come first serve basis
- Loan repaid in 4 annual payments
- Payment amounts will be billed on annual irrigation assessments

For more information, please contact Lori Brady, Sunnyside Valley Irrigation District (SVID) District Engineer at (509) 837-6980, or Mark Barnett, Roza Irrigation District (RID) Engineer at (509) 837-5141.

Farmers have indicated that the loan program represents a great opportunity to leverage low interest financing on-farm.

Based on total acres enrolled, the following percentages show the break down of selected irrigation delivery system upgrades:

· Solid Set Sprinkler	33%
· Pivots	31%
· Drip	28%
· Pump Back Stations	5%
· Wheel Lines	2%
· Hand Lines	1%

Yakima River Basin Salmon Numbers Continue To Rise

Chinook

Fall chinook salmon runs to the Yakima River, measured at Prosser, Washington are stable.

It's estimated that 70% of spawning occurs below Prosser Dam (the number of fall chinook above Prosser Dam, since 1983, is shown in graph below). The entire Yakima River run over this time period may have ranged

from 773 to 5373 adult chinook salmon.

Fall chinook runs to the Yakima River are harvested by Tribal, sport, and commercial fisheries in the ocean, Columbia River, and Yakima River.

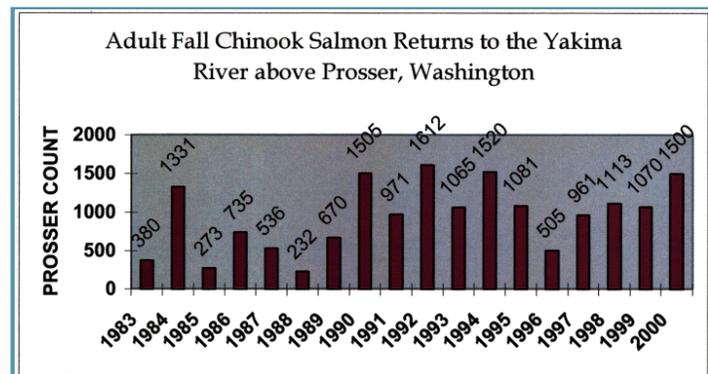
Coho

Coho salmon returns to the

Yakima River are predominantly hatchery fish. Coho were nearly extinct due to over harvesting by commercial fisheries in the lower Columbia River.

In recent years hatchery programs, harvest limitations, and improved ocean conditions have dramatically increased coho returns to the Yakima River.

Coho runs to the Yakima River are harvested by Tribal, sport, and commercial fisheries in the ocean and Columbia Basin.



Wild Steelhead

Although steelhead are listed as a threatened species in the Mid-Columbia region, recent analyses by the National Marine Fisheries Service suggest Yakima River steelhead runs are relatively stable and productive compared to other Columbia River runs.

It's believed that Yakima River runs are not at a significant risk of extinction now or in the foreseeable future.

Sport and commercial harvest is not allowed on wild steelhead in the Columbia Basin.

RSBOJC Completes Drain Habitat And Fish Studies

By **Pat Monk**, Yakima Basin Joint Board Fish Biologist

Two studies were recently completed for the Roza-Sunnyside Board of Joint Control (RSBOJC). The first study identified the fish species that inhabit the drain networks in Granger Drain, Sulphur Creek Wasteway and associated laterals, Spring Creek, Snipes Creek, and Corral Creek wasteways.

The second study measured the quality of fish habitat conditions in these drains and the Moxee Drain, with an emphasis on habitat conditions for salmon and trout. The studies found that the natural conditions of the landscape in the Yakima Valley, such as the geology and topography, are the primary factors influencing the amount and quality of fish habitat in the drains, rather than local agricultural practices.

The fish study revealed that adult salmon are being attracted to various drains and wasteways where they attempt to spawn and lay their eggs. Coho salmon placed 92 redds in Sulphur Creek Wasteway and 69 redds in the lower Snipes and Spring creeks in October and November of 2000. Signs of both chinook salmon and steelhead or rainbow trout spawning activity were scarce, and these fish species were not abundant in the drains.

The coho spawning in Sulphur Creek Wasteway apparently did not reproduce successfully, based on the low density of emergent fry (0.07 fish/100m²) observed during surveys.

In contrast, 4.73 fish/100m² juvenile coho were observed in lower Snipes and Spring creek wasteways, suggesting that fish spawning in these wasteways may be reproducing successfully.

The fish communities in Granger Drain and Sulphur Creek Wasteway were mostly minnows and suckers, whereas juvenile salmon were the most abundant

fish species observed in Snipes Creek Wasteway and in lower Spring Creek Wasteway.

The habitat study surveyed 43 miles of irrigation return-flow channels in the lower Yakima Basin during February and March of 2001 to determine their ability to support salmon and trout. Six drain networks were surveyed in the Roza and Sunnyside irrigation districts with three located in flat low-lands of the northwest area (Sulphur, Granger, and Moxee) and three in natural stream gullies of the southeast area (Snipes, Spring, and Corral).

Consistent differences in habitat features were found between drains in these two areas, and the differences were related to the natural conditions of the landscape such as gradient and geology.

Stream habitat was generally poor for salmon and trout in drains to the northwest (low flatlands) of the area surveyed. Moxee, Granger, and Sulphur creeks, had gradients of only 0.3-0.4% and flowed through areas of silt and sand deposits.

Silt and sand are poor habitat for salmon and trout spawning, and they composed 45%-100% of spawning habitat in every reach of Moxee, Granger and Sulphur drains. For the most part these are man-made, excavated drain channels which don't provide much salmon or trout habitat.

In contrast, stream habitat was fair to good for natural production of salmon and trout in the southeast drains, Corral, Snipes and Spring creeks. These natural channels had gradients around 1%, flowed through areas of basalt geology, and had suitable amounts of gravel and cobble for fish spawning and rearing.

Numerous beaver ponds, favored by coho for rearing, were present in Snipes and Corral drains providing important habitat for trout and salmon.



Soil Moisture Probe

continued from page 2

(RID) Engineer. "Farmers are impressed and pleased with the value of these probes as management tools, and with the ease of implementing this on-farm."

The soil moisture data loggers used in the project are comparatively inexpensive and give farmers an accurate snap-shot of soil moisture trends.

For more information about the data loggers, produced by the M. K. Hansen Company, visit their web page at www.mkhansen.com, or call (509) 884-3318.

Farmers interested in purchasing a unit can visit Muffett and Son's or call (509) 882-2500.

www.ybsa.org

The **Yakima Basin Storage Alliance**, a new proponent for more water storage, needs your support. Log on to learn why the Yakima Basin needs more water storage and find out how you can help.

The Roza-Sunnyside Board of Joint Control (RSBOJC) publishes the **RSBOJC UPDATE** biannually for landowners. All articles, letters and other items submitted to RSBOJC for use in its landowner newsletter become the property of RSBOJC which is authorized to use any item submitted, without payment or compensation to the person submitting the item, in any newsletter or other publication of RSBOJC. RSBOJC reserves the right to edit all items submitted. Mike Miller, Chairman; Doug Simpson, Vice-Chairman; Robert Golob, Ric Valicoff, Ken Lisk, Dave Michels, David Minick, John Newhouse, Dean Sizer, Douglas Vining, Harry Visser, Jim Willard, Directors. Officers: Ron Van Gundy, Secretary; James W. Trull, Treasurer. Address comments to: Joe Schmitt, Editor, P.O. Box 239, Sunnyside, WA 98944.