



US Army Corps
of Engineers
Walla Walla District

Intercom

Vol. 34

No. 4

August-October 2007



**LoMo
Spillway Weir
arrives in Walla Walla District**

FROM WHERE I SIT



photo: Rick Haverinen

Jerry Ross has the catbird seat while operating the gantry crane at Lower Monumental Dam.

By Jerry Ross

Crane operations on a hydroelectric power project are a big responsibility.

Using the intake crane for example, operating from high above the work gives the advantage of a very good point of view where I can see riggers and other workers doing their part to get a job accomplished safely and in a timely manner.

As safety for employees is always in the forefront, I can see most of the operation, but for certain points of a

crane lift, I need to rely greatly on my rigger and ground people.

For mobile operations the crane is set up for many configurations and requirements, at different locations around the power plant.

All of the loads require good communications between the rigger and the crane operator for a safe and calculated lift. Safety and teamwork are a priority in a powerhouse and for all project operations. I also backup my rigger from my point of view. While I am calculating the load and radius, I double check that all is clear in the lifting zone and landing zone, and I check for any obstacles while the rigger is getting the load ready, as many of our picks are done using only radio and hand signals.



Jerry Ross

Lower Monumental Lock and Dam.

I enjoy craning and the satisfaction of safely doing a hard or complicated pick as part of the team.

Ross, a powerplant mechanic, is the crane operator at

Haverinen wins Mouton Award

Public Affairs' Rick Haverinen was named winner of the USACE 2007 Locke Mouton Award for Excellence in Command Information, one of the four Mouton Awards given by USACE Public Affairs to outstanding performers.

Haverinen won for spearheading an internally focused campaign designed to increase employee understanding of the Walla Walla District mission. Campaign components included video and newsletter productions.

Corps Ball

Nov 17

6-10 p.m.

Reid Whitman Campus Center

\$35 per person, semi-formal

RSVP by Nov 9, 527-7700



Intercom is an unofficial publication authorized by the provisions of Army Regulation 360-1. It is published bimonthly by the Public Affairs Office, Walla Walla District, U.S. Army Corps of Engineers. It has a distribution of 1,000 copies. It is digitally printed by the Document Automation and Production Service. Contents of the INTERCOM are not necessarily the official views of, or endorsed by, the U.S. Government, the Department of Defense, or the Walla Walla District, U.S. Army Corps of Engineers.

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On the Cover...

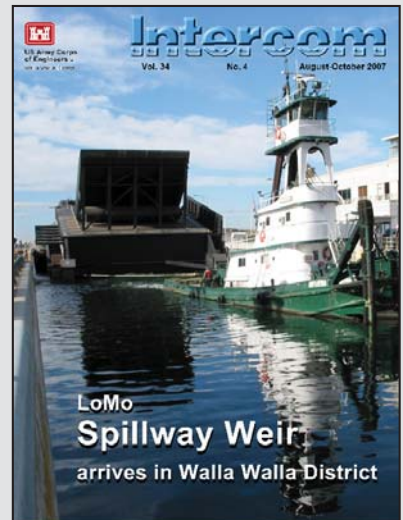


photo: Gina Baltrusch

The Removable Spillway Weir is shown transiting through McNary Lock and Dam enroute to Lower Monumental Dam. Spillway Weirs are designed to attract juvenile fish and assist them over a spillway in a less stressful more efficient manner than a conventional spillway. There are two other RSWs in existence, one at Lower Granite Dam and the other at Ice Harbor Dam.

LoMo crew rescues stranded boaters

By Joe Saxon

What began as a typical day for a fisherman soon spiraled into an emergency rescue with a happy ending.

Gary Clark of Kennewick was boating and fishing with his son eight miles above Lower Monumental Dam on Aug. 7 when wind and waves kicked up threatening to overwhelm their boat.

"The wind was getting stronger throughout the morning," Clark said, "so we decided to call it a day. But on our way back to the Devil's Bench boat landing, my motor started running poorly. We ran out of gas about two miles shy of the landing, and waves were coming over the stern of my 15-foot boat by the time we drifted to the south shore."

Jack Heffling was the Lower Monumental Dam operator who received the distress call and said, "I immediately contacted the Operations Manager, Roger Golladay told the local sheriff we would assist the boaters."

Heffling alerted mechanical crew foreman, Ron Standing,

who dispatched William Newton and Harold Clemens. Meanwhile, Heffling contacted the boaters who said "they were glad to hear we were coming because their vessel was being battered against the rocks on the south shore."

A thankful Clark said it was a "great relief that the Corps personnel arrived and towed my boat back to the landing. The two guys in the towing boat were very professional and courteous and I would like to thank them and the dam operator very much for helping me out of a potentially dangerous situation."

Golladay said the response was typical of the crew at Lower Monumental Dam and "exemplifies service at its best."

"When emergencies occur you can depend upon our men and women to step up and do the right thing. I'm proud of our response and I'm happy we were able to avert a serious incident," he said.



Harold Clemens, William Newton, Jack Heffling

District mourns loss of Tonia Elsey

By LaRhonda McCauley

Tonia Lee Elsey, 55, passed away following complications from a heart attack on Aug. 31, 2007, at Kadlec Medical Center, in Richland, Wash.

Elsey was born Jan. 9, 1952, in Kansas City, Mo., and was adopted in 1953 by Miller "Lee" and Elaine Alice Hatcher Lynch, whom she lovingly called "Mommy" and "Daddy." She moved with her parents to the Walla Walla area where she graduated from Walla Walla High School in 1970. During high school, she worked part time at Walla Walla District, U.S. Army Corps of Engineers, and Lewis Studio.

She began working at the City of Walla Walla in 1975 and that same year married Jerry Elsey and later divorced. They had two boys, Joe Thomas II (J.T.) and Jeremy Ray. She was very proud of J.T. and Jeremy. They definitely made the sun shine for her.

She was hired by Stokley USA in 1988 where she worked for eight years. She met Gary Thomas in May 1996 and moved to Waitsburg. She considered his children her own. She worked at Strauser Manufacturing and at Harold Electric from 1996 to 1999. She came back to Walla Walla District in April 1999 and worked there until her death.

She loved craft making, cooking,

and baking. Her family, neighbors, and co-workers could always count on goodies during the holidays. Some of her favorite recipes came from Paula Deen. She enjoyed working side-by-side with Denise and Laurie engineering new crafts to sell at upcoming bazaars and crafting items to give to her friends and family. She loved going on weekend getaways with her girlfriends, a stay in the mountains or a trip to Spokane to find the perfect yarn or that special trinket. She always made a special effort every holiday to find just the perfect gift for each and every member of her family and for her wide circle of friends.

She took pride in her home and yard and spent countless hours planning and planting her beautiful flower gardens. During the weekends in the spring and summer, Tonia and her companion, Gary, would turn their yard into an outdoor store, from selling antique furniture to trinkets and sometimes taking in a consignor or two. She was a warm, generous fun-loving person who welcomed everyone into her home. She had an outstanding sense of humor and knew how to make anyone laugh.



Tonia Elsey

She was very active in her community, volunteering on the Days of Real Sport parade committee and at the races, volunteering at the Walla Walla Fair and Frontier Days races, and wrapping hundreds of potatoes for the annual Commercial Club Salmon Bake. She was someone you could count on to be there with a smile to help.

She is survived by her mother of College Place; her companion at home; two sons and a daughter-in-law, Joe Thomas Jr. "J.T." Emily Elsey of Walla

Walla and Jeremy Elsey of Waitsburg; her companion's daughters, Marnie Eng of Vancouver, Wash., Taryn Thomas of College Place, and Courtney Streeter of Milton Freewater; three sisters, Debbie Lynch-Christian of Walla Walla, Judie Fries and Gloria Barbara Bigelow, both of Michigan; two brothers, William Russell of Missouri and Robert Russell of Illinois; her biological father, William Russell of Michigan; five grandchildren, several nieces and nephews, and many friends and co-workers who mourn her death. She was preceded in death by her father and a brother, Steven Lynch.

McCauley is Technical Editor in the Information Management Office.

State-of-the-art Spillway Weir arrives in Walla Walla District

Story and photos by Gina Baltrusch

The U.S. Army Corps of Engineers delivered on its commitment to improve dam-passage conditions for Endangered Species Act-listed fish in the Columbia River Basin with a third state-of-the-art spillway weir to assist outmigrating salmon in the lower Snake River.

The ten-story-high, 2 million-pound, steel-coated, fish slide arrived at Walla Walla District's Lower Monumental Lock and Dam near Kalohtus, Wash., at about 4:30 p.m. Oct. 23.

Two tugboats – one pushing from behind two grain barges and one pulling the weir from in front – made the 280-mile journey up two rivers in about three days, including an overnight stop at Finley, Wash.

During the trip, it passed six U.S. Army Corps of Engineers dams, each navigation lock testing the piloting skills of the captains of the tugboats Clarkston and Noydena.

It took about an hour to maneuver into a lock, inching forward along the downstream guidewall while the Noydena in front made side-to-side adjustments to ensure a straight approach. The locks are 86-feet wide – the weir is 84-feet-wide. With only two feet to spare around a \$15-million structure, Advanced American Construction, Inc., the contractor on the weir project, added steel bars on one side of the weir to act as “curb finders” to help guide it into the relatively narrow locks without damaging it. Once inside a lock, the weir with steel bars had about one foot of clearance on each side.



The weir will be fitted into spillway bay number eight at the dam. Spillway weirs allow juvenile salmon and steelhead to pass above the water surface under lower accelerations and lower pressures, providing a more efficient and less stressful dam passage route.

“This removable spillway weir (RSW) is one of three in existence in the world,” said Cary Rahn, Corps project manager for the weir. “The RSW concept will increase efficiency of the system, and pass more fish over the spillway, which diverts the juveniles away from the turbines and other by-pass structures, which will improve overall project survival numbers for out migrating juvenile salmon and steelhead.”

The spillway weir design has proven an effective means of providing a surface bypass route for fish, while retaining navigation, power production, irrigation and flood-risk-management benefits to the region. A prototype spillway weir was

installed at Lower Granite Dam on the lower Snake River in 2001. A second weir was installed during February 2005 at Ice Harbor Dam on the lower Snake River.

Testing at Lower Granite and Ice Harbor noted averages of 96-98 percent survival for fish passing via the fish slides.

Walla Walla District officials said programs like the spillway weir demonstrate the Corps' continued commitment to improving migration conditions for Endangered Species Act-listed fish.

“Recovering these listed species requires a comprehensive, science-based approach, and spillway weirs are one of the tools the Corps is using to build environmentally sustainable solutions for the nation's water resource challenges,” said Walla Walla District Commander Lt. Col. Anthony Hofmann. “It takes a lot of hard work by many dedicated people to bring something like this to fruition, and I applaud the efforts of all involved.”



Opposite page: Fish Biologist Brad Eby explains how the RSW operates. *Upper-left:* Cary Rahn, the spillway weir project officer, watches as towboats align their entry into the McNary lock. *Upper right:* Dean and Marge Bush of Hermiston, Ore., view the spillway weir's approach to McNary Dam. *Above:* The spillway weir transits through the McNary lock. Biological testing will follow installation at Lower Monumental Dam as District experts continue the Corps' pioneering efforts to recover endangered fish species. With the addition of this spillway weir, the Corps currently has various surface bypass improvements at six of its eight dams on the Columbia and Snake rivers – Bonneville, The Dalles, McNary, Ice Harbor, and Lower Granite dams, and plans to add surface bypass improvements at John Day and Little Goose dams in the future.





photo: Joe Saxon

Odyssey of the Spillway Weir

By Kevin Crum
Quality Manager/Value Engineer

So how did we arrive at this 2-million pound, 10-story high, 84-foot long fish slide?

It began in the 1990s with the Corps and other fish interests researching “surface passage” methods as an efficient and effective way to allow fish to pass dams.

With research, it was discovered that a high percentage of the fish populations travel in the upper 30 feet of the water column as they migrate downstream to the ocean. The dams’ spillway and the turbine design and configuration result in juvenile fish diving to depths of 50 to 60 feet to find the passage routes.

Armed with that knowledge, engineers and biologists began pursuing new technologies that would provide more surface-oriented passage routes for juvenile fish.

To test the effectiveness of surface passage, a prototype “surface collector” was installed at Lower Granite Dam on the lower Snake River in 1996. Success-

ful testing of the surface collector led to the full scale installation and testing of the prototype “removable spillway weir” (RSW) at Lower Granite in 2001.

The spillway weir allows juvenile salmon and steelhead to pass the dam near the water surface under lower accelerations and lower pressures, providing a safe and efficient passage route over the dam.

The design of the spillway weir is different from existing spillways with gates that open 50 feet below the water surface at the face of the dam and pass juvenile fish under high pressure and great velocities. The spillway weir, however, passes juvenile salmon and steelhead over a raised spillway crest, similar to a water-slide. To maintain the original capacity of the spillways for flood passage, the structure is designed to be “removable” by controlled descent to the bottom of the dam forebay.

The prototype weir installed in 2001 at Lower Granite Dam was considered a success, safely passing large numbers of juvenile fish, reducing delays at the dams,



Corps of Engineers file photo

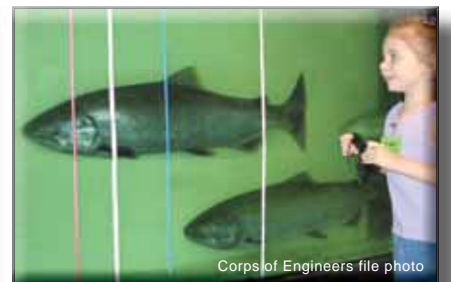
and providing a much more efficient spillway route than previous operations.

A second spillway weir was installed at Ice Harbor Dam in 2005 and a third is being installed at Lower Monumental dam.

When the system is completed on the Lower Snake River, adult fish will continue to pass upstream by ladders, and many juvenile fish can pass by spillway weirs downstream. Other surface bypass methods are being considered and implemented on the Lower Columbia River and at other non-Federal dams in the region.



photo: Joe Saxon



Corps of Engineers file photo

Top: Lower Monumental workforce and District staff view the arrival of the spillway weir. **Upper right:** Ice Harbor spillway weir. **Above:** A young visitor is enthralled viewing returning salmon. **Left:** The spillway weir has a snug fit locking through McNary Dam and Lock.

Sand Creek Byway gets green light



These kids seem to have found the perfect water hole in Sandpoint, Idaho. Corps of Engineers file photo



By Joe Saxon

Dwight Eisenhower was president when the Sand Creek Byway was first proposed for Sandpoint Idaho over 50 years ago.

Nine president's later, the byway took a step toward becoming a reality when the Corps issued a permit allowing Idaho Transportation Department (ITD) to conduct work in Sand Creek and the adjacent wetlands necessary to construct the Sand Creek Byway Project.

The permit specifically authorizes construction of a new bridge near the mouth of Sand Creek, as well as a pedestrian/bicycle pathway along the eastern edge of Sand Creek.

"The project involves construction of a new section of US Highway 95 starting at the north end of the Long Bridge and instead of curving to the left to enter Sandpoint, the new highway will continue straight across Sand Creek on a new bridge," said Brad Daly, chief of Walla Walla District's Regulatory Division.

It will then follow the railroad tracks along the east side of Sand Creek to a point where it will reconnect with the existing US Highway 95/US Highway 2 just north of the existing

bridge over Sand Creek north of Sandpoint.

This project is part of a four-phase effort to improve US 95 between Sagle and the Kootenai Cut-Off Road. This phase of the project is designed to "reduce traffic congestion and increase public safety by eliminating through traffic, especially truck traffic, from the streets of downtown Sandpoint," he said.

The byway is a contentious issue among some Sandpoint residents and the Corps received substantial public comments supporting the project and also comments raising concerns, issues and objections during the extensive review and comment period for this permit application.

The permit included numerous conditions to minimize impacts to Sand Creek and to mitigate wetlands proposed to be filled for construction of the project.

"The Corps' permit decision balances the needs of the public and community with protection of the aquatic resources of Sand Creek and its adjacent wetlands," Daly said.

The Corps issues or denies permits for the discharge of dredged or fill material into waters of the United States under authority of Section 404 of the Clean Water Act and for work in or affecting navigable waters of the U.S. under Section 10 of the Rivers and Harbors Act of 1899.

LOMO has clean



Not all screen stars in Hollywood

Rolling or “traveling” screens at Walla Walla District dams help prevent migrating fish from entering turbines and direct them to a fish collection system. But when you place the mechanisms under water and leave them for years, rust and time take a toll. The crew at Lower Monumental Dam will spend the next few years rebuilding their 19 fish screens, as it takes five workers about five weeks to refurbish each.

1 - A fish screen removed in May shows typical rusting. 2 - Stainless steel cleats on the fish screens have had their corners turned over to lock hex bolts from turning. Each corner must be straightened to disassemble the screen. Rusted drive chains will be replaced rather than rebuilding them. 3 - Utility Worker Pete Hobart prepares “sacrificial” anodes for mounting. The zinc metal lures underwater oxidation to decay it first rather than steel parts. 4 - Power Plant Mechanic Leo Janes uses a hydraulic jack to disassemble a drive motor. 5 - Power Plant Mechanic John Riser cleans up small parts in a sand blasting cabinet. 6 - Welder Harold Wentworth builds a custom tool for fish screen refurbishment. 7 - Leo Janes sand blasts large fish screen parts near the LOMO helipad; before and after photos 8a and 8b demonstrate how effectively the process works. 9 - Power Plant Mechanic Will Newton drills out fasteners from fish screen bars using a custom-made jig. 10 - A typical refurbished fish screen being reinstalled Sept. 4 at Lower Monumental Dam looks like new. 11 - Power Plant Electrician James Farver pours epoxy cement into a mold to waterproof a motor electrical connector. 12 - Painter Jamie Munson coats rebuilt fish screen parts to retard rusting under water.



Photos 1 and 10 by Sue Walton, LOMO Mechanical Engineer; other photos by Rick Haveninen

screen machine



District prepares Readiness XXI

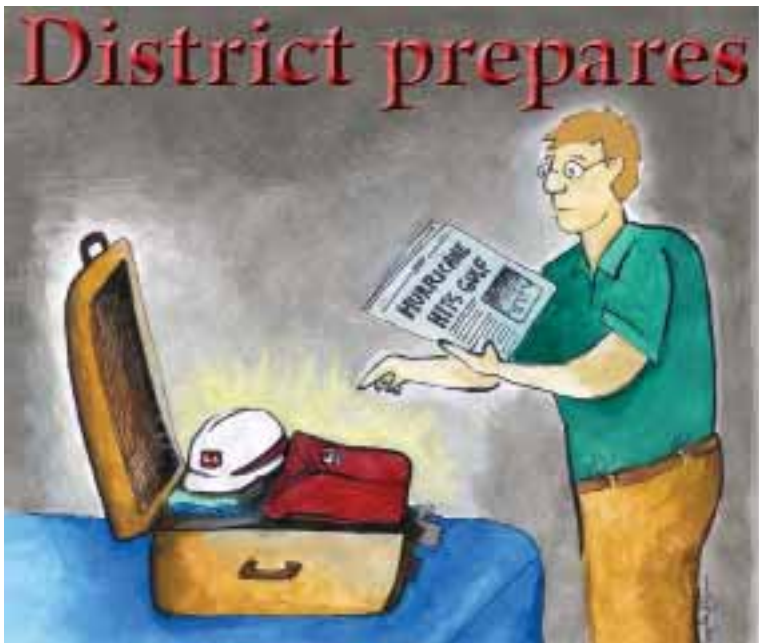


Illustration by Meghan Carlson

By Rick Haverinen

The Corps wants its troops to get ready for anything large that might happen with a new initiative.

“The public expects more out of the Corps nowadays because of Corps support to the global war on terrorism and Hurricane Katrina,” said Gayla Ernst, supervisory security and emergency management specialist in the Walla Walla District Readiness Branch. “They recognize that we do have emergency capabilities, and we need to be as prepared as we can be in emergency responses to meet public expectations.”



Gayla Ernst

The emergency management community in the Corps realizes that we’re not as trained and prepared as we could be.”

The new response capability vitamin shot is Readiness XXI.

“Like most initiatives, this initiative has a solid framework, but not solid edges,” Ernst said. “In other words, any action works that fits

within the mission based on the objective, which is to enhance our emergency response capabilities. Our preparedness level is not just domestic, but also for GWOT deployment.”

There are at least three new components within Readiness XXI that will get attention.

“We’re going to strengthen the training,” Ernst said, “and the criteria that makes us ‘green’ for the planning and response team. We want to be 100 percent ready, 100 percent of the time. Our team will have more functional training on how they get electrical generators through the deployment process, out to the field, and account for them. Right now, we have people on our teams that have never been on the ground during an emergency, nor have they had any true functional training. Readiness XXI will require that level of experience and training before they are deployed.”

A second initiative in Readiness XXI will have Corps civilians looking more like active duty troops.

“The Forward Engineering Support Teams, or FEST-A teams, are designed to be in place by August 2008,” Ernst said. “The concept is these teams will support Army brigade combat teams.

They’re made up of two military personnel and six civilians that will be trained and attached to eight different Corps districts around the country. The team in Northwest Division will be attached to Seattle District and they will support the brigade combat team at Fort Lewis.”

The third noticeable Readiness XXI plan is restructuring Corps components to look more like active duty military units.

“There is a proposal to change the organizational structure at division level,” Ernst said, “and it’s modeled after an Army G-3 organization. If implemented, this organization would include security and safety as the protection side. It would have the emergency management side and it would include five more staff people.”

Ernst’s section currently has seven employees, but the proposed changes are only for NWD and other divisions, giving them a better capability to plan for and respond to incidents.

Ernst said funding for additional local emergency response training is not yet on the horizon, but that the dollars seem very likely to soon flow toward developing at least the FEST-A support teams.

With Walla Walla District’s “best in the Corps” deployment volunteer ratio, Ernst said employees should make their interest in emergency operations known through the District’s Intranet site by visiting <https://w3.nww.usace.army.mil/apps/emds/>

Employees can also get there by opening the District Intranet home page, looking under “Organization Pages,” clicking on the “Operations” bullet, then clicking on the bullet for “Emergency Management.” This will link to a page that will have the language “Register to be a Volunteer” toward the top, and to the right of that click on “Emergency Management Deployment System.” The volunteer registration system includes copious notes and examples of how to work through it.

Meet the Power Teams

Walla Walla District has two power teams who can provide backup electrical power generation anywhere an emergency makes the service needed. The team members must volunteer for the assignment and must be qualified in specific skills needed, must be physically fit and have all immunizations required. Team members must sign a participation statement recognizing the assignment, and if called upon, agree to deploy. Permission is needed from the member’s supervisor.

Walla Walla District Power Team members are –

Team #1: David Coleman, action officer; Robert Wall, mission manager; Michael Deccio, mission specialist; Craig Rockwell, mission specialist; Judy Turner, mission Liaison; Patti Record, contract specialist; Leslie Harmon, logistics specialist; Kenneth Wandersheid, power quality assurance; and John Brennan, Power Quality Assurance.

Team #2: Carl Knaak, action officer; Richard Hilt, mission manager; Chad Rhynard, mission specialist; Ray Leean Walton, mission specialist; Robert Williams, mission liaison; Mary Van Sickle, contract specialist; Tami Vance, logistics specialist; Ronald Gosselin, logistics specialist; Kreg Buryta, power quality assurance; and George Peck, power quality assurance.

Architects have designs on NWW



photo: Rick Haverinen

Walla Walla District architects designed the juvenile fish facility at Lower Monumental Lock and Dam.

By Rick Haverinen

You might say that architects have designs on Walla Walla District.

At the time the District's headquarters building was on the drawing board in the early 1990s, the in-house architecture team consisted of Kevin Crum, Russ Thornton, Kyle Shaw, and Amoreena Roberts.

"We do a variety of things," Thornton said, "everything from doors, to roofs, to buildings."

Thornton is now senior member of the firm. Shaw has relocated to Seattle District. Crum has moved his practice to project management. So now the office shingle reads Thornton and Zak, as Kelli Zak is the junior partner.

One of Zak's current projects is designing a roof for the Bonneville Dam visitor center on the Washington State side of the Columbia. The building has a concrete plaza with seams through which rainwater finds unpredictable ways to penetrate, so a retrofitted roof over

the open area seemed the best cure.

"The structure is going to be environmentally friendly," Zak said, "We're trying to do a sensitive design where we will be incorporating energy-efficient ideas."

Probably the most visible examples of how the Walla Walla District architects have proven their designer mettle was to satisfy both biologists and engineers by cooking up the juvenile fish facilities. The observer beholds a pile of penne pasta in the form of metal pipes and holding tanks baked right into



Russ Thornton

a wedding cake of steel and brick buildings on multiple levels. There's a classical Greek look to the Lower Monumental fish facility office entrance. It's both gas works and college library.

Working in the District's headquarters building is one-stop shopping.

"With the Corps of Engineers, we're



Kelli Zak

all here in the same office," Zak said, "so collaboration is immediate. I've enjoyed working with others and learning the structural plus the mechanical and electrical engineering and the biology."

Thornton and Zak are currently designing a new juvenile fish facility for Lower Granite Dam. It's challenging because the lot on the south side of the river is narrow.

"There's a criteria for the slope of the flumes to minimize injury to the fish," Thornton said, "so we're working in arrangements of flumes, and all of these

associated fish-handling facilities."

Zak will devise spaces to free National Marine Fisheries Service personnel from their boxy shipping container-type structures they are working in to handle fish.

"It's crucial to the life safety code in making sure the employees working out there, and the visitors as well are allowed to get out in case of an emergency," Zak

said. "So we're going to update the facility and include those provisions."



Walla Walla District architects designed a headquarters building for a Fort Lewis battalion.

McNary TSWs take home report card



McNary received two different TSW versions on March 6.

photos: Rick Haverinen

By Rick Haverinen

Plans to accelerate deployment of Temporary Spillway Weir (TSW) have been put back on a low shelf until more is learned from research on the device.

The Temporary Spillway Weir is a research tool that is a scaled-down version of a Removable Spillway Weir (RSW) that weighs about 1,000 tons and so far has cost more than \$12 million each to construct. The TSW #2 device at McNary cost about \$1.9 million and weighs about 125 tons. TSWs allow researchers to test for distribution of migrating juvenile fish, efficiency of passage compared to conventional spillways and other routes, and fish injury. Walla Walla District installed two different examples of TSW at McNary Dam on March 19 and testing began almost immediately. TSW #2 is slightly more sophisticated than TSW #1, as it includes hydraulic tailpiece for additional flow support.

"We listened to the region, evaluated the data and could not be certain it would be a good idea to build any more TSW Ones," said Ann Setter, a Walla Walla District fish biologist. "We did get some data that suggested the survival rates for yearling Chinook were closer between the two structures."

Setter said the District and partner agencies are considering experimentally rearranging the positions of the two fish passage devices in 2008. TSW #1 was installed into McNary spillbay #22, closest

to the power house. TSW #2 was installed into spillbay #20. The devices can be moved by existing gantry cranes.

Data from the first season of fish passage testing is preliminary, but researchers concluded steelhead were more inclined to use the devices than were Chinook.

"I think it's safe to say that the TSW concept for surface passage works great, for collecting fish in the forebay," said Cary Rahn, the District's project manager.

Some of the testing included comparisons of how well tagged juvenile fish passed the dam via various routes, including the TSW, without injury. Other research included acoustic determinations of paths used by fish as they approach the dam.

"This is a simpler structure," Setter said, "and I think we got the benefit we expected to have with steelhead, that they spend less time in the forebay and take advantage of surface passage. Our spill passage efficiency isn't as high for yearling Chinook as it is for steelhead. But that's not totally unusual for places where we have RSWs."

Rahn said the initial plan was to install additional TSWs in 2008, but next year will now be used to research the

performance of the two existing devices. Portland District has fast-tracked TSW, as it is primarily a research tool. Two TSWs are planned for John Day Dam next year. Walla Walla District now expects a TSW to be installed at Little Goose Dam in 2009 instead of the earlier-planned RSW.

"We needed less than a year to take the TSW from a temporary concept for testing to decide whether or not it's what we wanted as a more permanent feature," Rahn said. "We're a bit disappointed we're not moving forward with construction, but the (fish interest) region is convinced it's the best thing to do."

The surface passage route for moving migrating juvenile salmon downstream below dams is now widely accepted as highly successful. Spillway weirs may be early technology for providing surface passage, as Rahn said 15 surface passage alternative strategies are now under consideration to accomplish the task.

They range from simple, such as TSW, to elaborate systems involving collection and channeling of fish.

"The 15 systems are kind of grouped," Setter said, "and there were probably three similar to TSW. So this was the simplest one of that group,

and it was tested both on efficiency of fish passage, and forebay behavior. Both of those worked together in terms of what we're trying to do to improve survival. We're thinking that we're not at the end point yet, since we only have steelhead doing really well with surface passage at this point."

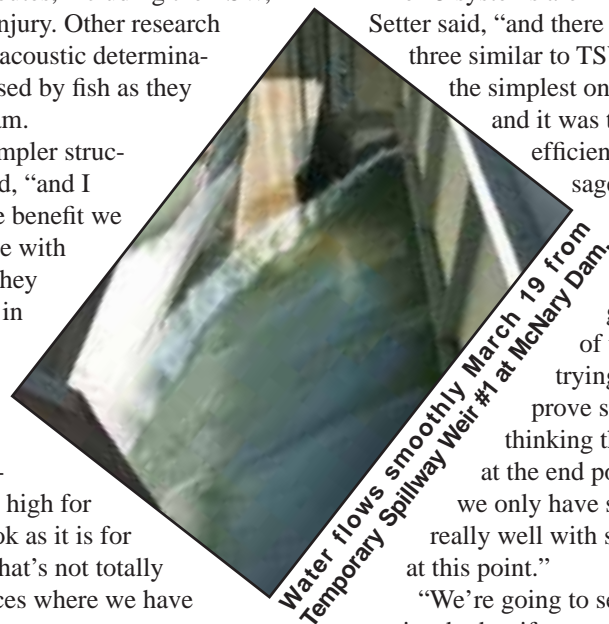
"We're going to see what other species do, but if we can't get Chinook to the higher survival passage route then some of the further options need to be explored."



Cary Rahn



Ann Setter



Water flows smoothly March 19 from Temporary Spillway Weir #1 at McNary Dam.

Corps tracks wayward fish at LOMO



photos: Rick Haverinen

Researchers are trying to learn why juvenile fish are delayed passing from Lower Monumental Reservoir to below the dam.

By Rick Haverinen

Fish are not going where we want them to go in Lower Monumental Reservoir.

Our expectation of migrating juvenile salmon is that they streak from their spawning grounds to the Pacific at all possible haste. However, Walla Walla District has discovered when juvenile fish get to Lower Monumental Reservoir, near Kahlotus, Wash., we lose track of them, and many have not been detected passing downstream of the dam.

“We had noticed that we had a number of fish that were never passing the (Lower Monumental) project, which is unusual for radio telemetry studies,” said Ann Setter, a Walla Walla District fish biologist.

The actual physical work of the study includes collecting migrating juvenile Chinook at Little Goose Dam, placing within each a passive “PIT” tag and a battery-powered acoustic tag, and releasing them a few miles below Little Goose. A small sample of gill is also removed to check their overall health and to determine their ability to adapt to a marine environment. There is some concern that the study fish are being eaten by predators, so this year a selection of catfish and small mouth bass are also being tagged. Last year’s study was the pilot and used radio tags, but they are active for only 10 days or so. This year’s acoustic tags are useful about 60 days.



The acoustic tags are only 16mm long, but each costs about \$250.

“We knew that we were going to be doing another survival study,” Setter said. “How can we better understand and put tougher an experimental design for the next year that would take into account what our previous results were, and so we wouldn’t lose 600-800 fish. Radio tags are several hundred dollars each, and it doesn’t help us with our survival estimates if those fish never pass the project. So we initiated a project last year collaboratively with Battelle and NOAA fisheries in the summer to collect smolts here at Little Goose, and then see what they do in the reservoir, and then also let’s collect hydraulic and weather data and see if there’s a relationship between what those fish do and those other data.”

One correlation noted by Battelle scientist Geoff McMichael was during the summer when the sun heated the river water. He observed layers of temperature stratification in the river.

“The solar heating can go down to about 18-20 feet,” McMichael said. “You’ve got cool water coming underneath and you’ve got this warm water on the top. With the wind blowing upstream through the canyon, it actually moved that warm layer on the top upstream.”

McMichael noted that migrating juvenile fish tended to stop at the same location during times when the reservoir temperatures were strongly stratified.

“You have 2-3 degrees difference between the surface temperature and the temperature at the bottom,” McMichael said, “and at the point about half-way down in the reservoir, where that strong stratification sets up, is the same place where the fish migration really drops off. We get fish starting to mill around.”

Part of the study will look at the reservoir’s environment once Lower Monumental’s Removable Spillway Weir is installed, which is expected to happen in November.

“The RSW is going to pass roughly 7.5 KCFS (or 7,500 cubic feet per second) when it’s operating. Our summer spill program passes 17 KCFS, so it will be a significant portion of that spill. What does that do to the warm surface layer? Did we eliminate that from setting up and therefore allow fish to continue moving?”



Research Scientist Geoffrey McMichael holds a young Chinook salmon after it has been surgically implanted with tags and sutured.

Around & about



Upper left: Senator Mike Crapo of Idaho visited Dworshak Dam Aug. 16 and toured the Nutrient Supplementation Program on Dworshak Reservoir while Maintenance Worker Bob Kaufman piloted the barge. Crapo's Aide Lindsay Northern is at left. **Lower left:** Congressman Bill Sali of Idaho's First District dropped in on Lower Granite Dam in August and received

briefings on the Corps' fish programs from Biologist Mike Halter. **Right:** The Walla Walla Fair observed Education Day Aug. 30 and Natural Resource Specialist Chris Alford had plenty of students to whom he could teach water safety. **Above:** District Commander Lt.Col. Anthony Hofmann addresses about 100 attendees at the VA Hospital's POW MIA Day activities.



photo: Tony Sijohn



photo: Deb Norton



photo: Randy Rahn



photo: Joyce McDonald

Top: Tony Sijohn's night view of Little Goose Lock and Dam. **Upper left:** Deb Norton photographs children in their water safety vests on Dworshak Reservoir. **Lower-left:** Randy Rahn captures his brother Cary cutting loose while water skiing. **Right:** Joyce McDonald highlights a beautiful Mariposa Day Lilly near Ice Harbor Dam.

HONORING ALL WHO SERVED

VETERANS
DAY

"I offer a salute, my gratitude and thanks
to the over 300 members of the Walla Walla District family
who have served, and to all of you who continue
to sacrifice and serve on behalf of this great nation of ours."

Lt. Col. Tony Hofmann, Commander

NOVEMBER 11, 2007



photo: Joe Saxon
poster: Veterans Affairs official 2007 Veterans Day poster