



PRESIDENT'S NOTES



Gridlock

Joe Mentor, Jr., President, AWRA Washington Section

The big event in Seattle this last month was the annual convention of the American Association for the Advancement of Science. The convention allowed scientists from around the country to share ideas and learn from each other's work.

The conference made the news on a regular basis. The story that caught my eye was on February 14, on the front page of the Seattle Times. "Global Warming Hitting Northwest Hard, Researchers Warn," read the headline. According to the story, the presenters' conclusion was that earlier warnings about future water shortages in the Northwest were accurate, and perhaps even understated. The Times reported University of Washington professor Ed Miles as saying that "if you think the water fights we have now are intense ... you ain't seen nothing yet."

Meanwhile, in Olympia, our State Legislature was nearing midpoint of its 2004 Special Legislative Session. Once again, water policy "reform" is a big issue. But don't expect any solutions. I have been following these issues for over 20 years now, and I have never seen a more polarized debate. Environmentalists, tribes, utilities, farmers and developers all have descended on the Capitol, such as it is. Yet they are like the proverbial ships passing in the night. Everyone wants to talk, and no one wants to listen to any one else's perspective. Some water users advocate positions that could dry up countless salmon-bearing rivers and streams. They want a 40-year hiatus from relinquishment, retroactive of course to cover past nonuse of water. They will attempt to hold all other legislative proposals hostage until they get exactly what they want. Some environmentalists and tribes want instream flow legislation that would leave thousands of property owners with no viable water supplies, especially in rural areas of the state. Water policy reform to them is a surrogate for land use control. Their strategy in my opinion is a devious attempt to avoid an open debate on growth issues.

The stakes are enormously high, for our region, and for our profession, and many of those in the front lines are acting recklessly and perhaps irresponsibly. Our Chapter as an organization sits on the sidelines. Our membership includes combatants from both sides. Consequently, we try not to become involved. Instead, we plan conferences, and dinner meetings. That's all that we do. Our gatherings are good ones to be sure, and they provide a place where all parties can gather and discuss issues of mutual concern. But I can't help but think that we are missing an opportunity to become more relevant.

The stakes are enormously high, for our region, and for our profession, and many of those in the front lines are acting recklessly and perhaps irresponsibly. Our Chapter as an organization sits on the sidelines. Our membership includes combatants from both sides. Consequently, we try not to become involved. Instead, we plan conferences, and dinner meetings. That's all that we do. Our gatherings are good ones to be sure, and they provide a place where all parties can gather and discuss issues of mutual concern. But I can't help but think that we are missing an opportunity to become more relevant.

I have a growing feeling that it's time to change our approach. If we can't succeed to resolve the problems we face today, how can we possibly face the future Ed Miles and others predict for our region? Fights over water policy only will become more intense, and the solutions harder to achieve. The approach we are taking today reduces water policy disputes to slogans, and positions. It does nothing to solve problems. Unresolved water policy issues are crying out for leadership. Maybe it's time we try as an organization to help provide it.

Our Board of Directors is planning a strategic planning retreat in May. We hope to identify and offer to you, the members, suggestions for our Chapter to increase its relevancy in the face of increasingly acrimonious debates about water policy. This is your organization, not just ours. Please give us your input.☺

Inside this issue:

- River-Aquifer Exchanges in the Methow River Basin
- Water Banking Comes to Washington
- Part 2: Water Resources on a Continental Scale
- April 1st Dinner Meeting with Alan Stay

River-Aquifer Exchanges in the Methow River Basin

Chris Konrad, U.S. Geological Survey, Tacoma, WA.

River-aquifer exchanges are important hydrologic processes in the Methow River Basin, regulating the availability of water for in-stream and out-of-stream uses. The limited availability of water resources in the Methow River Basin is most evident for rivers and streams in the late summer and early autumn, when surface water continues to be appropriated for agricultural and domestic uses but also provides habitat for spawning and rearing of endangered salmon (upper Columbia River Basin spring chinook).

The Methow River drains over 1,800 mi² (square mile) in north central Washington and is a tributary to the Columbia River. There is a steep precipitation gradient across the basin, with high-altitude areas on the western side of the basin receiving approximately 80 in. (inches) annually and areas in the lower river valley receiving 12 in. Most of the Methow River Basin and all of its headwaters are in the Wenatchee-Okanogan National Forest. The largest towns are Twisp and Winthrop. The Methow River Basin is shown in Figure 1.

Mean annual discharge of the Methow River near Pateros (USGS station 12449950) for water years 1960-2002 was 1,550 ft³/s (cubic feet per second), which is equivalent to annual runoff of 1.1 million acre-ft (acre-feet). Hydrologic processes in the Methow River Basin reflect the distinct seasons in the region's climate, characterized by cold winters with abundant snowfall at higher altitudes and warm, dry summers. During the spring and early summer, snowmelt recharges shallow aquifers and raises streamflow. By late summer, however, snow has melted from most of the basin and precipitation (either snow or rain) generally is scarce until fall or winter. Streamflow is unevenly distributed during the year, with high flows in late spring and early summer and low flows in late summer and winter. As a result, the availability of water resources is limited from late summer through winter.

Ground-water discharge from unconsolidated sedimentary deposits in the Methow River Basin is the primary source of baseflow in the Methow and Twisp Rivers. Unconsolidated aquifers, in turn, are recharged by infiltration of snowmelt and rainfall, ground-water flow from adjacent unconsolidated or bedrock aquifers, and seepage from rivers and irrigation canals. The location, rate, and seasonal patterns of exchanges between ground water and surface water were investigated in the Methow and lower Twisp River valleys by calculating gains and losses of streamflow for individual reaches of each river. Gains and losses were calculated on a daily basis for water years 2001 and 2002 in four reaches of the Methow River and one reach of the Twisp River where continuous records of major inflows and outflows were available. Gains and losses of streamflow for nine

reaches of the Methow River and four reaches of the Twisp River were calculated for three low-flow periods (September 11-14, 2001, February 11-14, 2002, and September 17-19, 2002) to provide additional spatial resolution of river-aquifer exchanges.

Daily exchanges between ground water and four reaches of the Methow River from Lost River to near Pateros were estimated with a surface-water discharge balance using continuous records for water years 2001 and 2002 from streamflow gages in the basin (table 6). The four reaches are from the Lost River to Goat Creek, from Goat Creek to the Chewuch River, from the Chewuch River to Twisp River, and from the Twisp River to Pateros (fig. 1). The Methow River from the Lost River to Pateros had an annual mean gain of 97 ft³/s in water year 2001 and 27 ft³/s in water year 2002. Total daily gains for the four reaches where daily exchanges between the river and aquifer were calculated equaled 150,000 acre-ft in water year 2001 and 154,000 acre-ft in water year 2002 (table 8). The total daily losses, however, increased from 88,000 acre-ft in water year 2001 to 207,000 acre-ft in water year 2002. The higher losses during water year 2002 represent increased recharge of the unconsolidated aquifer by the river that may have been a consequence of both low ground-water levels brought about by the drought during water year 2001 and near-average streamflow, particularly during the middle to late summer when aquifer recharge by the river is at its highest levels. In both years, there were three distinct seasonal patterns in river-aquifer exchanges at the reach scale: consistent losses from Lost River to Goat Creek, consistent gains from Goat Creek to Winthrop, and seasonally dependent gains and losses from Winthrop to Twisp and Twisp to Pateros. Gains in streamflow were relatively steady between water years 2001 and 2002 in all reaches except from Lost River to Goat Creek, which had smaller gains during water year 2001, the drier year, than water year 2002. Similarly, all of the reaches had greater losses during water year 2002 than water year 2001.

The Methow River had a net gain of 139 ft³/s in September 2001, which was 58 percent of daily mean discharge near Pateros on September 12, 2001. The net gain decreased slightly in February 2002 to 113 ft³/s, which was 40 percent of daily mean discharge near Pateros on February 13, 2002. In September 2002, the Methow River had a net gain of 116 ft³/s, which was 39 percent of daily mean discharge near Pateros on September 17, 2001. The net gain, which represents ground-water discharge to the river, was inversely related to streamflow, with the largest gains during the lowest flows.

Three reaches consistently gained flow during low-flow periods: Goat Creek to Winthrop, RM 45 to RM 43, and Twisp River to Beaver Creek.

Two reaches of the Methow River consistently lost flow: Lost River to Goat Creek and Chewuch River to RM 45. The largest exchanges occur upstream of Winthrop. Downstream of Winthrop, the relative and absolute magnitudes of exchanges were smaller and were less consistent over time.

The largest losses during low-flow conditions were from Lost River to Goat Creek, where the Methow River has had periods of no flow in 9 of 13 years from water years 1991 to 2003, despite perennial flow in the Methow River above Lost River, in the Lost River, and in Early Winters Creek. The Methow River above Lost River and its tributaries flow out of surrounding mountains, where they have steep channels confined by narrow valleys with only thin alluvial deposits over bedrock. Downstream of Lost River, the thickness of alluvial deposits in the Methow River valley increases to as much as 1,000 ft and its width increases from less than 1,000 ft to as much as 1.2 mi. As a result of the increased width and thickness of the deposit, ground-water levels are likely to be lower than the river surface, promoting recharge of the unconsolidated aquifer by the river.

The largest gains during low-flow conditions were from Goat Creek to Winthrop, where ground water consistently discharged to the river. Most of the gain for each period was concentrated between Goat Creek and RM 56. The consistent gain in this location may depend on a number of factors, but the downstream decrease in the thickness of the unconsolidated basin-fill sediments from Mazama to Winthrop is likely to be the primary reason.

A daily discharge balance for the lower Twisp River from Newby Creek to near Twisp was calculated from continuous-streamflow records collected at stream-

flow gages. The lower Twisp River had an annual mean gain of 3.7 ft³/s in water year 2001 and 3.9 ft³/s in water year 2002. Magnitudes of daily exchanges were larger in 2002 than in 2001, despite the similar annual mean gains. Total daily gains for the reach were equal to 4,700 acre-ft in water year 2001 and 9,200 acre-ft in water year 2002. Total daily losses for the reach were equal to 2,000 acre-ft in 2001 and 6,400 acre-ft in 2002.

During low-flow conditions, river-aquifer exchanges in the lower Twisp River exhibit a seasonal pattern of large gains during late summer and losses or small gains during winter. The lower Twisp River had a net gain of 15 ft³/s on September 11, 2001, which was 45 percent of daily mean discharge near Twisp, a net loss of -3.8 ft³/s in February 2002, which was 7 percent of the Twisp River discharge measured below Buttermilk Creek on February 14, 2002, and a net gain of 17 ft³/s on September 18, 2002, which was 53 percent of daily mean discharge near Twisp. High flows in the river and ground-water flow from glacial terraces and unconsolidated sediments filling side valleys such as Elbow Coulee are likely to recharge the unconsolidated aquifer in the lower valley, which then discharges to the river during summer. In addition, recharge of unconsolidated sediments from irrigation-canal seepage ceases in early autumn. In response, ground-water flow from surrounding aquifers to the unconsolidated aquifer is likely to decrease during the autumn and winter before recharge from snowmelt begins again in the spring. ❧

*This article is based on a recently completed USGS report on water resources in the Methow River basin. The complete report is available on-line at:
<http://water.usgs.gov/pubs/wri/wri034244/>.*

UW Student Chapter Update

The UW student chapter of AWRA would like to thank board member **Pete Sturtevant of CH2MHill** for speaking at a student chapter event held in the stately Forest Club Room in the College of Forest Resources on January 29th. Pete shared the stage with **Dr. Richard Horner, Associate Research Professor at the UW**, and both spoke about stormwater retrofit projects in urban neighborhoods in Seattle. The talk attracted students from Landscape Architecture, Public Affairs, Forest Resources, and Civil Engineering. **Thanks again, Pete and Rich!**

Learn more about the WA-AWRA: The Washington State Chapter of the AWRA fosters educational and professional development. Student support is provided in the form of two annual student fellowships, sponsorship of a student chapter at the University of Washington, and underwriting of a special meeting in the early summer hosted by the student chapter and open only to student, faculty, and Section members. Inter-organizational support is fostered with local, interstate and international organizations. Abimonthly or quarterly newsletter is published containing in-depth analysis and editorials of current issues. Brown-bags are organized on special issues as they arise. Several dinner meetings are held throughout the year providing good food and good company followed by a presentation by featured guests. We also offer an employment page where positions wanted and available are posted. A dedicated board of 15 members meet regularly to plan, organize and facilitate events.

Water Banking Comes to Washington

Joe Mentor, Jr., Mentor Law Group, PLLC

I. INTRODUCTION

Traditional water rights transfers must be approved by state water resources agencies and sometimes by state courts. Obtaining agency or court approval for water transfers can be time consuming and costly and may be cost-prohibitive altogether when seeking to satisfy smaller water needs. Variations on traditional water transfers have evolved in many states in response to increasing costs, permitting delays and growing water shortages. Many of these variations are referred to as "water banks." These so called water banks have become an increasingly common method of addressing instream and out-of-stream water needs.

The term "water banking" means different things around the West. Generally, however, "water banking" is an institutional process specifically designed to facilitate water transfers. More specifically, water banking means the "deposit" of any water use entitlement with a person or entity that makes it available for withdrawal by the transferor or another person or entity, either at the same time or place or later in time or at another place.

At least ten western states have authorized water banking in some form, varying greatly from state to state in operation or in the purposes served. The main purpose of many water banks is to make water available to other, third party users. Most of these banks essentially operate as an exchange between willing sellers and interested buyers. Some water banks operate at least in part to facilitate instream flow transfers. Others operate primarily to facilitate domestic, municipal or supplemental irrigation transfers. Most banks operate at a regional level within a state, usually at a watershed or basin level, rather than statewide.

II. WATER BANKING FUNCTIONS

A water bank can perform several key functions, serving as an intermediary or as a facilitator. The water bank as intermediary serves as a "depository," where valid water use entitlements are "banked" for withdrawal at a later time or by different parties. In some states, water banks are formed to establish and hold water mitigation credits, which may be used or sold. Another variation of water banking describes programs similar to aquifer recharge, where surface water is stored or banked as groundwater for later withdrawals.

As a facilitator, a water bank can act as a brokerage or clearing house. Water banks decide who is eligible to rent or buy water from a bank and establish rules for transfers. Water banks can evaluate water rights transfers to determine which rights can be transferred, and the extent to which transfers can be accomplished without detriment or injury to third parties.

III. WATER BANKING IN WASHINGTON

In 2003, the Washington Legislature passed and the Governor signed ESHB 1640, a bill titled "An act relating

to authorizing water banking within the trust water program." The bill establishes a pilot water banking program in the Yakima Basin. The bill also directed Ecology to undertake a stakeholder process involving a variety of water resource interests to determine other water banking concepts and locations in Washington State.

The water banking process established in ESHB 1640 is tied explicitly to the water right transfer statute, RCW 90.03.380, and to 90.42 RCW, the state trust water program. If a water right holder seeks to have a water right managed for water banking purposes, that water right is transferred to the Trust Water Program. At the time of the transfer into Trust, the water right is subject to review under RCW 90.03.380 based on the foreseeable temporary or permanent uses for the water right. When those future water demands exist, the water right or a portion of the water right can be assigned to that new water use or user so long as the new use is consistent with the future use reviewed under RCW 90.03.380 at the time the water right was transferred to the Trust Water Program.

ESHB 1640 has both similarities and differences to water banking programs in other states. Most notably, ESHB 1640 does not authorize the establishment of a "water bank" as an entity in and of itself, either within or outside Ecology. While other states have authorized independent banks, the concept did not receive support in the Washington Legislature. Instead, water banking is explicitly authorized as one of the purposes of the Trust Water Program, a program already existing in state law.

ESHB 1640 addresses many of the shortcomings found in Washington's current reallocation system. Most notably, the water banking process is intended to make the voluntary reallocation of small quantities of water more cost effective. ESHB 1640 will allow portions of a single water right to be transferred to new uses on an as-needed basis, which will allow water users to obtain only the actual quantity of water required. In addition, because water rights are reviewed under RCW 90.03.380 at the time the water right is transferred to the Trust Water Right Program, specific future uses can be pre-approved. This will serve to reduce the time required for transfers of small quantities of water – perhaps the most unpredictable transaction cost under the existing water right transfer process.

The Washington Department of Ecology has been moving ahead to implement ESHB 1640 and to encourage water banking in the Yakima Basin generally. Last summer, using funding from the Bonneville Power Administration, Ecology established a work group to examine institutional constraints that may exist. The work group concluded that there were several "water banks" already in operation in the Yakima Basin, and so a new water bank entity was unnecessary. Instead, the work group recommended that Ecology and the U.S. Bureau of Reclamation establish an entity to be known as the

Yakima Water Exchange," whose principal mission would be to facilitate water banking transactions by other entities. Presumably, Ecology will include the work group's recommendations as part of its Report to the Washington State Legislature, required under ESHB 1640.

IV. CONCLUSION

Water banking is a concept that seems to enjoy widespread support, even though most people don't have a clear idea of what specifically can be accomplished with a water bank. Support for the concept reflects the fact that water transfers generally have become well ac-

cepted as the primary means of meeting future water supply needs in Washington and throughout the western United States. The Yakima Basin is fertile ground for innovation in Washington, primarily because of certainty for water rights ownership resulting from the Ecology v. Acquavella basin-wide water adjudication. As water banking evolves in the Yakima Basin, lessons learned can be used to develop a statewide program in the future.

Joe Mentor, Jr. practices water and natural resources law with Mentor Law Group, PLLC. He currently is serving as President of the AWRA's Washington Chapter.

From: <http://wdfw.wa.gov/do/weekendr/weekendr.htm> (03/09/04)

Hundreds of sandhill cranes are gathering in the Columbia Basin for an annual feeding and resting stopover on their journey from California wintering grounds to Alaska breeding sites. Their numbers will peak next month at close to 15,000 birds - more than half of all the Pacific Flyway's cranes. See the northcentral region wildlife viewing report and visit the [Othello Sandhill Crane Festival's website](http://www.othellosandhillcranefestival.org/) (<http://www.othellosandhillcranefestival.org/>) for details on the seventh-annual event. Across the Cascades, wintering birds-including spectacular trumpeter swans, falcons and bald eagles-are still on view in northern Puget Sound lowlands.

Freshwater fishers are running out of places where they can cast a line, especially with the recent closure of several rivers to all fishing for the protection of weak **steelhead** stocks. The rivers that closed March 1 are the Skagit (from mouth to the Dalles Bridge at Concrete and including Fisher Slough) the Skykomish, the north fork Stillaguamish, the Puyallup and the Carbon. The Green River also remains closed to fishing because of low steelhead returns. **Trout** anglers should keep an eye on WDFW's catchable trout plant weekly report page, at <http://wdfw.wa.gov/fish/plants/weekly/> on the Internet.

Backyard birders should be on the lookout for the season's first **hummingbirds**. Some neighborhoods are fortunate enough to have year-round resident **Anna's** hummingbirds, but the majority of the Puget Sound's hummingbirds are only seasonal visitors - and they're on their way. **Rufous** hummingbirds have already been spotted in the extreme southwestern corner of the state, and the tiny birds will likely start showing up in the Puget Sound region shortly.

The winter **blackmouth** fishery has been predictably unpredictable this year, with anglers finding fish one day, then little or no action for days afterward. There have been reports of big fish hitting the landing nets in places like Thatcher Pass, between Blakely and Decatur islands in the San Juans, and along the Kitsap shoreline of Puget Sound. "Fishing in the San Juan Islands and the northern portions of the region definitely seems better than points south," said WDFW blackmouth manager Chuck Johnson. "And those anglers who fish with spoons or other hardware behind a dodger off a downrigger seem to be consistently outperforming the moochers who are fishing either gear or bait off the bottom." Johnson said inexperienced anglers would be better off trolling than mooching. "It's harder to get the hang of mooching and you can spend a lot of time dealing with hook-ups on dogfish and other species. You usually don't have those problems when you're trolling, and you can cover much more water." Marine areas 7 and 8-1 remain open to blackmouth fishing through March 31. Marine areas 8-2 and 11 are open through April 10, and Marine Area 9 is open through April 15.

APRIL AWRA DINNER MEETING:
TRIBES AND THE ENDANGERED SPECIES ACT

FEATURING: ALAN STAY
MUCKLESHOOT INDIAN TRIBAL ATTORNEY

DATE: APRIL 1ST, 2004
TIME: 5:30 SOCIAL FOLLOWED BY PROGRAM AT 7:00 PM

PLACE: HALE'S BREWERY AND PUB, 4301 LEARY WAY NW (In the Fremont neighborhood of Seattle)

Online directions can be found at: <http://www.halesales.com>

Alan Stay, Muckleshoot Indian Tribal Attorney, will be our guest speaker at the next AWRA dinner meeting on April 1st at Hale's Brewery and Pub and talk on "Tribes and the ESA". Alan has worked for Indian Tribes his entire professional career since graduating from the University of Washington Law School. He started work in 1971 with the Navajo Tribe. In 1974 he worked for the Muckleshoot Indian Tribe on the case leading to the Judge Boldt's decision in the early 80's defining the Tribe's share of salmon harvest. For the next 15 years he worked for the Colville Confederated Tribes involved in resource planning and management issues. In the last 7 years Alan has returned to the Muckleshoot Indian Tribe addressing Endangered Species Act and related needs for the Tribe.

REGISTRATION

Registration is (please circle those that apply): \$22 for members, \$27 for non-members, or \$10 for student members if received by March 26th. There is a \$12 no dinner option. Late fee is an additional \$5. If using a complementary corporate sponsorship, please enclose the certificate.

Name: _____ Total: \$ _____

Organization: _____

Address: _____

Email: _____ Phone: _____

Detach and mail with payment (checks payable to AWRA, Washington Section) to
CH2M HILL,
Carolyn Butchart,
PO Box 91500,
Bellevue, WA 98009.

Inquiries: Carolyn Butchart, (425) 233-3297 or cbutchar@CH2M.com

Water Resources on a Continental Scale: One Man's View from a Bicycle

Part 2 – *This is a continuation of an article in the January-February Newsletter.*

Pete Sturtevant, CH2MHill

It was on Day 21, the halfway point of my cycling odyssey, that I finally left the Great Plains and entered the hill and lake country of western Minnesota. I was seeing trees again. Lakes of all sizes began to appear regularly. They had names such as White Earth, Elbow and Bad Medicine. By the afternoon I had entered into the Mississippi Basin. That night I camped at Itaska Lake State Park, the source of this mighty river. The lake, itself, is fairly large but one can cross its outlet by hopping across a few stepping stones. My legs were unusually stiff this day as I had made my best one-day mileage: 124 miles. For the next day and a half I continued through lake country with water resources in abundant display. Passing one particularly large lake, Leech Lake (Fishing Capital of MN) I was unable to see the land at the far end of the lake! I crossed the Mississippi a second time as the river finally began its long journey to the south. The stream was a bright red which surprised me as I'd always heard it was relatively clear upstream of its juncture with the Missouri. Reaching the eastern side of Minnesota one afternoon, I came to the edge of a great escarpment. Before me to the east lay the western end of Lake Superior, stretched out like a great sea. It was an unforgettable sight. I whizzed downhill into Duluth and for the first time in weeks enjoyed a campsite almost free of mosquitoes.

I followed the southern shore of Lake Superior to the delightful Town of Bayfield, Wisconsin. Here, the Apostle Islands lay offshore, very reminiscent of our San Juan Islands, complete with a ferry. Unfortunately, as with most of the exciting attractions I encountered along the way, I had no time to get out to the islands. I did, however, take the afternoon off from the 95-degree heat and enjoy a cool dip in the lake. Actually the lake is rather cold but no worse than what I had grown up with swimming in the Pacific Ocean in my Home Town of San Diego. For the next four days and nearly 500 miles I followed the southern lake shore through Wisconsin and the Upper Peninsula of Michigan. As advertised, this lake is really huge and it presented several very welcome opportunities for scenic food stops and camping. I spent another afternoon taking some time "off" at Gitchee Gumie Camp (yes there IS such a place) where I swam and lay in the sun along a sandy lakeshore, complete with small surf. I encountered no large rivers on the Peninsula but plenty of streams and large wetlands; a few of the latter stretching for miles.

Finally reaching the eastern end of Lake Superior, I crossed into Canada at Sault Ste. Marie. This town with the weird name lies on both sides of the border. To my disappointment, there were no large iron ore freighters in the locks on that day. Heading along the north shore of Lake Huron, the countryside once again became wilder and the towns grew farther apart. I crossed numerous rivers of the size and frequency of those found in the Puget Sound area. After several days I met the Ottawa River which I followed downriver for 200 miles. This is a big river with several hydroelectric dams backing up large, beautiful lakes. One evening I camped on the shoreline of Driftwood Provincial Park. The sun setting

over the forested hills across the lake was quite reminiscent of one of our large Cascade lakes. The following night I camped at the riverside park in the small town of Quyah, Ontario next to a ferry dock. The small ferry is used to move a few cars at a time across the river between the provinces of Quebec and Ontario.

The Ottawa River forms the northern boundary of Canada's Capital City, Ottawa. Most of the grand federal buildings are situated on the bluff overlooking the river. I spent a half day touring the Capital. One interesting water feature is a canal leading away from the river which stair-steps its way up into the city through a series of locks. The latter portion of this day I spent riding south through the populated heart of Ontario Province, lying between the Ottawa and the St. Lawrence rivers. I pulled into my campsite that night along the broad, placid St. Lawrence River. The full moon was rising over New York State on the far side of the river and its reflection off of the river was the perfect ending to a memorable day.

The next day I crossed the St. Lawrence River into upper New York State. At that point the river consists of two branches (separated by an island). Each of the branches appeared to be as wide as the Columbia River, perhaps not surprising since the river conveys the flow from all five of the Great Lakes. My route took me down the length of Lake Champlain which lies between New York and Vermont. The highway runs for 50 miles through a series of islands in the lake. The area, primarily farmland and a few small towns, is popular with tourists and very much brings to mind our own Whidbey Island.

The next couple of days I passed through the heart of New England. The terrain consists of narrow stream valleys bordered by wooded ridges and punctuated by small, scenic towns. Cemeteries are a very prominent feature and the graves at those that I stopped to view stretched back 200-300 years in time. I was now crossing states at the rate of about one per day. I climbed up over the spine of the Appalachians at the appropriately named Crawford Notch. The elevation of this "pass" is just 2,000 feet but it was my highest elevation since Montana. I wound my way down to the lowlands along the Seco River, a popular whitewater stream in this region. My ride through southern Maine took me through yet another picturesque lake country. I knew that I must be approaching the ocean; there were now frequent road signs advertising lobster. I passed through Portland, only my second large city. Portland is protected by several large island off the coast which form Casco Bay. The Bay, bounded by these wooded islands, reminded me of Puget Sound. My cross-continent trip ended at Cape Elizabeth, one of many points of land which jut out into the Atlantic Ocean along the Maine Coast. As I waded triumphantly into the Atlantic, I realized that its waters are as cold as those of the Pacific where I had started my journey a little more than 5 weeks before. ☺

About the Newsletter. This newsletter is a publication of the Washington Section of the American Water Resources Association. It is published bi-monthly or quarterly. This is a forum for members to share ideas and opinions. Opinions expressed in the AWRA Newsletter are those of the authors and do not necessarily represent the official position of the AWRA – Washington Section. Comments on articles are welcome.

Reprints and circulation for non-profit purposes are allowed without additional permission if proper credit is given to both the source and the author, unless specifically copyrighted in the byline of the article.

Submissions are welcome for the May-June, 2004 newsletter. The submittal due date is May 5, 2004. The editor reserves the right to make changes for reasons of length, grammar, or clarity. Contact Sandra Maunz at 425/883-0777, or send submittals directly to: smaunz@golder.com. Recent newsletters available online at: <http://earth.golder.com/waawra>.

Looking for a new position?

Need a new prospect? Check out the jobs and opportunities listed on the AWRA Washington Section Website.

Employers can list available positions, and job seekers can post resumes or peruse the openings.

<http://earth.golder.com/waawra/ASP/jobs.asp>

Upcoming Events

The Washington Section AWRA holds regular dinner meetings, including a social hour, dinner, and a speaker. Other meetings and conferences are listed on our website, <http://earth.golder.com/waawra>.

AWRA – Washington Section January Dinner Meeting. Thursday, 1/22/04. Please see meeting announcement on the front page of this newsletter.

AWRA national, regional, and state conference meeting schedule. <http://www.awra.org/meetings/>.

Washington Hydrologic Society. Monthly meetings. Brian Drost at (253) 428-3600 ext. 2642 (bwdrost@usgs.gov) or Llyn Doremus (360) 592-2632 (ladoremus@aol.com).

Northwest Sustainability Conference. May 1-2, 2004. Mountaineers Conference Center, 300 Third Avenue W, Seattle WA. This conference is an opportunity to learn about recent developments in sustainability practices. Sessions will be presented by professionals and community organizers who have dedicated their lives towards working for a more sustainable future. The goal of the conference is to provide practical information, methods and resources to empower attendees to live their lives and practice their work more sustainability. For more information, website: http://www.nwetc.org/sust-400_05-04_seattle.htm, phone: (206)762-1976, email: info@nweec.org.

Members: please submit events you would like included in future newsletters to: smaunz@golder.com

WA-AWRA Board Members

President: **Joe Mentor, Jr.**
(206) 676-7008
mentor@mentorlaw.com

Vice-President: **Carolyn Butchart**
(425) 453-5000, ext. 5297
cbutchar@ch2m.com

Newsletter Editor: **Sandra Maunz**
(425) 883-0777
smaunz@golder.com

Secretary: **Tom Martin**
(206) 528-3055
martint@battelle.org

Treasurer: **Scott Bender**
(425) 881-9627
scott@benderllc.com

Past-President: **Anne Savery**

Director: **Cindy Baker**
(206) 525-5758
baker.lexington@atbi.com

Director: **Catherine Drews**
(206) 370-8109
catherined@prestongates.com

Director: **Steve Foster**
(425) 450-6316
sfoster@hdrinc.com

Director: **Jacqueline Klug**
(425) 649-7320
jklu461@ecy.wa.gov

Director: **Chris Konrad**
(253) 428-3600
cpkonrad@usgs.gov

Director: **Stan Miller**
(509) 477-6024
smiller@spokanecounty.org

Director: **Cleve Steward**
(360) 862-1255
csteward@stewardandassociates.com

Director: **Pete Sturtevant**
(425) 453-5000
psturtev@ch2m.com

Director: **Tom Ring**
(509) 865-4946
ringt@yakama.com

Director: **Mona Thomason**
(206) 764-3600
mona.j.thomason@usace.army.mil

Director: **Paul Wetherbee**
(425) 462-3746
paul.wetherbee@pse.com

UW Student Rep: **Juliet Thompson**
(206) 543-6272
jat5@u.washington.edu

Faculty Advisor: **Derek Booth**
(206) 543-7923
dbooth@u.washington.edu

2004 Membership Application / Change of Address Form

(⤵ please circle, as appropriate ⤴)

Annual membership in the state chapter costs \$25.

(If you attend the 2003 November Conference, your conference registration includes 2004 membership.)

Name _____ Position _____ Affiliation _____

Street Address _____ City _____ State _____ Zip _____

Phone(_____) _____ Fax(_____) _____ E-mail _____ @ _____

Please indicate if you prefer to receive your newsletter electronically.

Check -----if----- you would like to be actively involved on a committee.
You will be contacted by one of the board members.

2004 Membership Dues: \$25.00. **Checks only.** Please make check payable to **AWRA Washington**

Section.

Mail to: American Water Resources Assoc. WA. Section
P.O. Box 2102
Seattle, WA 98111-2102

The American Water Resources Association is a scientific and educational non-profit organization established to encourage and foster interdisciplinary communication among persons of diverse backgrounds working on any aspect of water resources disciplines. Individuals interested in water resources are encouraged to participate in the activities of the Washington Section.

Special thanks to Golder Associates Inc. for document processing and graphics support on this newsletter.

American Water Resources Association, Washington Section
P.O. Box 2102
Seattle, WA 98111-2102

(Change service requested.)

Non Profit
U.S. Postage PAID
Seattle, WA
Permit #1399