
PRESIDENT'S NOTES

by Fran Solomon, President, AWRA Washington Section

I hope that everyone has been enjoying our beautiful summer weather and recreational activities in the lakes, rivers, and marine waters of Washington. Our AWRA chapter has remained active during the summer, with an excellent dinner meeting presentation by Bob Black of the U.S. Geological Service (see summary article in this newsletter) and planning for the fall conference on November 15 at the Seattle Art Museum. The Board is in the process of planning one more dinner meeting for late October; stay tuned for a flyer announcing the topic and date.

I am pleased to announce that National AWRA has selected the University of Washington student chapter as the outstanding student chapter of the year. The student chapter has held several meetings including the successful spring social and has participated in community services projects to protect and restore water resources. Congratulations to the student chapter for this well-deserved recognition. The award will be presented at the National AWRA Conference in Albuquerque, New Mexico in November.

I look forward to seeing many AWRA members and colleagues at the Washington Section's timely fall conference on "The Impact of Drought on Water Resources and Energy Management in the Northwest." The keynote speaker, John Vaccaro of the U.S. Geological Service, will provide perspective on the magnitude of the 2001 drought and climatology of the Northwest. After his presentation, there will be four panel sessions that explore the policy, legal, economic, environmental, and scientific challenges associated with balancing water supplies and instream flows with multiple demands. By now, all AWRA members should have received an early notice flyer about the conference. It is not too early to register! The conference pre-registration fee of \$100 (\$25 for students) includes 2002 Washington Section dues, lunch, snacks, and abstracts of the presentations.

In addition to the technical presentations, the fall conference will feature the presentation of fellowships to two graduate students in water resources disciplines and the presentation of the first annual "Outstanding Water Resources Professional" award. Immediately following the conference will be elections of AWRA Board members for 2002. Serving on the Board is a very rewarding experience. If you are interested in running for a Board position or in exploring this possibility, please contact me or any of the other 2001 Board members. ☺

Save the Date !!!

November 15, 2001

AWRA Washington Chapter Annual Fall Conference

"Impact of Drought on Water Resources and Energy Management"

Keynote Speaker: John Vaccaro

This year's keynote speaker, **John Vaccaro**, a hydrologist at the **US Geological Survey**, will address historical perspectives of drought in the Pacific Northwest. His talk will include a discussion of the concept of drought, the definition of which varies between hydrological, agricultural and political application. Mr. Vaccaro will address the climatological evolution of this year's drought and some of its consequences.

John Vaccaro obtained a BSc degree in Mathematics from the Pennsylvania State University. He earned a Master of Science in Physical Oceanography from Virginia Institute of Marine Science (VIMS), at the College of William and Mary. At VIMS, he concentrated in flow and transport modeling of Virginia estuaries. He has worked the U.S. Geological Survey since 1977. During his tenure with the USGS he has worked on investigations of the major ground water systems in Washington and Oregon, including the Spokane Aquifer, the Columbia Plateau Aquifer, Puget Sound Aquifer system, and the Willamette Lowland Aquifer systems. His work has included temperature analysis of the Yakima River system, developing techniques to estimate ground-water recharge, estimating climatic controls on hydrologic response, and long-lead forecasting of stream flow.

New Water Rights Legislation Aims at Permitting Backlog, Code Fixes

By Thomas M. Pors

On May 10, 2001, Governor Gary Locke signed the first comprehensive water rights legislation in thirty years. ESHB 1832 consolidated numerous amendments to the Water Code designed to speed up the water rights permitting process, encourage local watershed planning, clarify the authority of water conservancy boards, and expand exemptions from relinquishment for nonuse of water. This article describes several of the more important water law changes in ESHB 1832, but there are numerous minor changes not described here among the bill's 34 sections.

Governor Locke has promised to seek further revisions to the state's water rights laws in 2002, with the following goals: (1) defining and implementing a strategy for meeting the needs of fish; (2) addressing the water needs of growing communities; and (3) fixing the outdated "use it or lose it" policies that impede water conservation. These more difficult code changes will require extensive negotiations among various stakeholders prior to the next legislative session.

Quicker Approval of Transfers

A major component of ESHB 1832 is the "two lines" water right permit processing regime. The bill provides that applications relating to existing water rights may be processed and decisions on them rendered independently of pending applications for new water rights from the same source of supply, without regard to the date of filing of the pending applications. Pending applications for new water rights are not entitled to protection from impairment, injury, or detriment when an application relating to an existing water right is considered. Furthermore, an application related to an existing right may be processed ahead of an earlier filed application when insufficient information for a decision on the earlier application is available and the applicant for the previously filed application is sent written notice and does not file the requested information within 60 days.

Trust Water Rights

To create incentives for water right holders to temporarily stop using water without losing their water rights, the bill makes it easier to create trust water rights that are exempt from relinquishment. A water right holder may temporarily donate all or a portion of their water right to the Department of Ecology's trust water right program in order to protect instream flows in areas where aquatic species have been listed as endangered or threatened or in basins with depressed fish stocks. Ecology is required to accept these donations to the extent the water right was exercised in the five years preceding the donation, and the full quantity of the water

right exercised before the temporary trust will revert to the donor at expiration of the trust. Trust water rights created under this provision would not be subject to relinquishment for nonuse.

Water Conservancy Boards

The bill amends Chapter 90.80 RCW to clarify the scope of authority of water conservancy boards, which were authorized by the legislature in 1997 to provide an alternative (faster) method for approving changes and transfers of existing water rights. In a Thurston County Superior Court case decided last year, the court found that the conservancy boards' authority was limited to review of applications to modify the place of use or point of diversion or withdrawal of a water right, and that the boards lacked the authority to change the purpose of use of a water right (such as from agriculture to municipal). ESHB 1832 rendered an appeal of this decision moot, and clarifies that conservancy boards can authorize changes to the purpose of use of existing water rights. The bill also authorizes the establishment of conservancy boards across watershed boundaries and to include multiple counties or multiple watersheds, clarified procedures for appeals from decisions of the boards, and beefed up conflict of interest provisions for board members. Applicants have the choice whether to send their change/transfer application to a conservancy board or to the Department of Ecology.

Watershed Planning Grants

The bill also authorizes additional funding for watershed planning units (under HB 2514, Chapter 90.82 RCW). Planning units electing to amend or establish instream flows may seek an additional \$100,000 per water resource inventory area (WRIA). Planning units electing to study multi-purpose storage opportunities may seek an additional \$100,000 for such a study. As of the date this article was written, the legislature had not agreed on a budget for the next fiscal biennium and it is unclear whether additional funds for watershed planning grants will be appropriated.

Watershed Planning – Instream Flow Setting

If a watershed planning unit elects not to establish or amend instream flows in its WRIA plan, Ecology may retain \$100,000 from the available appropriation to carry out an assessment to support the establishment of instream flows. However, Ecology may not use these funds to amend an existing instream flow regulation unless requested to do so by the planning unit. The bill also states that by October 1, 2001, Ecology will complete an environmental impact statement (EIS) on instream flow methods and policies to guide the development of instream flows across the state. Planning units will

be required to consider methods and policies addressed in the EIS. State agencies setting or amending instream flows must rely on the methods and policies addressed in the EIS. Persons involved in instream flow setting in watershed planning units should comment on Ecology's instream flow EIS to insure adequate alternative methods and economic and social impacts are considered.

Family Farm Transfers

State law previously restricted changing a family farm water right (those created after December 8, 1977, for 2,000-acres or less of irrigated agricultural lands held essentially by the same individual or family) to a non-agricultural purpose, such as municipal or industrial. Sections 22 through 25 of ESHB 1832 allow changes in the purpose of use of a family farm irrigation water right to be changed to municipal use if located within an urban growth area (for counties required or choosing to plan under the Growth Management Act (GMA)), or within a city, town or area designated for urban growth in a comprehensive plan adopted by counties not planning under GMA. This provision will allow the

transfer of family farm water rights to public water systems serving growing communities in previously rural areas of the state, subject to new water conservation requirements.

Exemptions From Relinquishment For Nonuse Expanded

Another bill signed by Governor Locke, SSB 5910, adds several exemptions from relinquishment of water rights for nonuse of water. Most water rights that are not put to beneficial use for five consecutive years without sufficient cause are subject to being relinquished (forfeited) by a statutory procedure. SSB 5910 amends RCW 90.14.140 to expand the definition of "sufficient cause" for nonuse of water by adding crop rotation, weather patterns, effects of return flows, and buy-backs of electricity by power suppliers. This will alleviate many harsh and unpredicted consequences of forfeiture on water users.

If you have any questions about the application of these bills to your property or project, please call Tom Pors at (206) 447-2916. ☞

On-Line Water Data for Washington is Just a Click Away

Since before the turn of the century, the U.S. Geological Survey (USGS) has been collecting water resources data in Washington State, starting in 1891 with the stream-gaging station on the Spokane River at Spokane. Currently, the USGS collects streamflow data at more than 250 sites throughout the state, with many of the sites delivering their data via satellite-linked telemetry.

With the advent of the World Wide Web, water data from those sites are just a click of the mouse away. Web technology makes it possible to deliver real-time streamflow data quickly and easily. To access water-resources data for Washington, go to this Web address:

<http://wa.water.usgs.gov/realtime/waterdata.html>

On that page, you will find links to our extensive surface and ground water databases. You can also go to the USGS National Water Information System (NWISWeb) directly from the page, giving you access to site information; flow and levels in streams, lakes, and springs; water levels in wells; and chemical and physical data.

Also accessible from our water-resources data page are ground-water data, including real-time and long-term water level hydrographs, tables of departure from long-term averages, and links to USGS ground-water projects in Washington.

To help you locate data and reports, we have created separate Web pages

for each specific data type, listed in the navigation bar near the top and at the bottom of the page. We also have an on-line bibliography of all the published USGS reports for Washington, linked in the navigation bar on the left of the Web page and on many of our other Web pages. You can also ask questions and request data or reports from our Public Information Officer through a link on the Web pages.

For more information, go to our home page at <http://wa.water.usgs.gov/>,

call us at (253) 428-3600, or e-mail us at gs-w-wa_pubinfo@usgs.gov ☞

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 WA Section of AWRA. Comments on articles are welcome.

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Submissions are welcome for the October - November, 2001 newsletter. The submittal due date is October 15 2001. The editor reserves the right to make changes for reasons of length, grammar or clarity. Contact Philip Beetlestone at (425) 883-0777, or send submittals directly to pbeetlestone@golder.com (most document/graphic formats are acceptable). Recent newsletters are available on: <http://earth.golder.com/waawra/>

Dinner Meeting Review

By Sara Stanley, AWRA University of Washington student member

The AWRA July dinner meeting was once again held at Hale Ale's Brewery in Ballard. The evening's topic "**Ecological Trends in Puget Sound Streams**" was given by **Robert Black** from the **U.S. Geological Survey**. After an amusing introduction by a USGS co-worker Robert began by giving a historical perspective on the biological conditions of streams in the Pacific Northwest, huge old growth forests, lots of large woody debris (LWD), free-flowing water, habitat diversity, and salmon galore. I think we all know what happens next... the fisheries declined. Many factors are cited as the cause of the decline: overfishing, logging, urbanization, loss of LWD in streams, and loss of pool frequency. These are just a few causes cited.

Bob went on to discuss how large numbers of herbicides and insecticides being detected in not just agricultural streams, but in urban streams as well. All of those chemicals that people use on their lawns are reaching neighboring streams, not too surprising since most drainage ditches run along the street lead to a creek. Apparently, the tissue of sculpin is a good indicator of stream pollution because they are sedentary and don't migrate out of the stream systems (to nearby lakes or to the ocean). Since it is a resident to stream systems, it can only be affected by nearby pollutant sources. In a study that combined data of stream sediments and sampled sculpin from both the Puget Sound and the Willamette Basin in Oregon he found that there was only a weak correlation between detecting toxic compounds in sediments and fish tissue – sediment may not be the best thing to sample. He then looked at toxins in stream sediments and their relation to land use. Once again, there was not a big significant difference between the detection of toxins in sediments between forested, urbanized, or agricultural watersheds.

This determined scientist went back to the drawing board. What could be a good indicator of water quality? Well insects and water quality have certainly been studied a lot in the Pacific Northwest, the Benthic invertebrate Index of Biological Integrity (BIBI) was even developed here! The BIBI is a multimetric developed to use macroinvertebrates to characterize stream systems. It is easy to generate a score, easy to explain the results, and is relatively low cost. Unfortunately, one is still left with not really knowing why one site is good or bad and then there is the year to year variability problem. Some years there are lots of bugs and some years there aren't, so how many years must one sample before you really get a clear picture of the biological health of the stream?

So while the BIBI had its merits, Robert was left with wanting more. What environmental factors could actually explain why a site had a specific score and why forested sites always scored higher than urban-

ized ones? Statistics is the answer, and complicated ones at that. Robert developed a multivariate approach (canonical correspondence analysis, CCA) to help identify what environmental factors group together and to identify specific macroinvertebrates in different land cover/use categories (forest, agriculture, urban). Using a multivariate approach enables one to evaluate both physical and biological data together. Data was combined from the USGS and the Washington Department of Ecology and was collected at three scales: reach, local and watershed. Many water quality parameters were collected, including conductivity, dissolved oxygen, pH, substrate, and temperature, to name a few. Land cover data was used as well and acreage of the watershed was forested, logged, used for agriculture, urbanized, and what was the underlying geology.

The results from the CCA done at multiple scales indicated that macroinvertebrates were equally correlated with the environmental variables observed at each of the three scales. At the reach scale, taxa composition was most correlated with conductivity. At the local and whole watershed scales, taxa composition was most correlated with percent forest land cover. Interestingly, conductivity was the most important factor in determining how good or bad a site was. Conductivity acts as a surrogate for anthropogenic activity. As far as land cover was concerned, forests were always better than agricultural or urban streams in all metric groups. Land cover thresholds were determined as well. They were based on the taxa optima calculated for percent forest cover at the local and watershed scales. Forest cover thresholds of 80-90% and 70-80% were found for the local and whole watershed scale, respectively. What this indicates is that a well-defined riparian zone at the local scale can bring more bang for the buck and improve insect habitat. The results suggest that macroinvertebrates can be used as quantitative indicators of environmental conditions at multiple scales and as indicators of environmental thresholds.

As a whole, I think the group was left with wondering "Where do we go from here, when streams are in need of rehabilitation?" Thankfully, Robert did not leave us hanging by a thread. He explained that thresholds do exist in the environment. Knowing more about them will improve our ability to manage and rehabilitate a watershed's structure and function. However, large and long-term data sets are needed. Identifying environmental thresholds and specific causal factors more effectively will require the use of new and innovative approaches. The bottom line, though, for maintaining watershed health is that the threshold for percent cover of urbanization is 10-30% before watershed function is impaired. Land managers sure have their work cut out, if they are going to maintain our watersheds for future generations! ~~~

Upcoming Events

October 23 - 26, 2001, Northwest Environmental Training Center
"Northwest Salmonid Recovery Workshop", Seattle, WA.
Website:: www.nwetc.org/training.htm

November 15, 2001. AWRA Washington Section Annual Conference.
"Impact of Drought on Water Resources and Energy Management" Seattle, Washington.

November 12-15, 2001, AWRA Annual Fall Conference, Albuquerque, New Mexico.

February 20 – 21, 2002 , Research and Extension Regional Water Quality Conference 2002, Red Lion, Vancouver WA, Abstracts due by September 28, 2001. More information can be found on the Washington Water Research Center website www.wsu.edu/swwrc/

March 25-28, 2002. 2002 International Groundwater Symposium. Berkeley, California. For additional conference information email Cindy Gold or call 1-800-548-ASCE

September 8-13, 2002. 9th International Conference on Urban Drainage (91CUD). Portland, Oregon. Abstracts due by July 31, 2001. For additional conference information email Cindy Gold or call 1-800-548-ASCE.

AWRA holds National, Regional, and State Conferences. Further information on future meeting schedules can be found on the AWRA Website <http://www.awra.org/meetings/>

The Northwest Geological Society

(<http://www.scn.org/tech/nwgs/index.htm>) holds meetings or field trips. A list of the planned meetings and trips is <http://www.scn.org/tech/nwgs/calendar.htm#Calendar>

The Washington Hydrologic Society holds monthly meetings. Further information is available from Brian Drost at (253) 428-3600 ex. 2642 (<mailto:bwdrost@usgs.gov>) or Llyn Doremus (360) 592-2632 (<mailto:ladoremus@aol.com>).

For more information and web site links visit the AWRA Washington Chapter Web site at <http://earth.golder.com/waawra>.

What this State Section is All About!

The WA 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, underwriting of a special meeting in the late spring hosted by the student chapter, and other subsidies. **Interorganizational support** is fostered with local, interstate, national, and international organizations. A **bimonthly newsletter** is published containing in-depth analysis and editorials on current issues. Several **dinner meetings** are held throughout the year providing good food and good company followed by a presentation by featured guests. **Brownbags** are organized on special issues as they arise. The annual climax is the **Annual Section Fall Conference**; the next one will be held November 15, 2001. The Conference is the principal funding vehicle for many Section activities, including providing financial support to the Section's Student Fellowship program. A **dedicated board** of approximately 15 members meets regularly to plan, organize and facilitate events. If you wish to learn more about your Section and/or wish to participate more in Section activities, you will be warmly welcomed. Please contact any of the board members listed on Page 5.

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2001 Membership Application / Change of Address Form

(☒ please circle, as appropriate ☑)

Annual membership in the state chapter costs \$25.

(If you attended the 2000 November Conference, you are already a member for 2001 – Welcome!)

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 one of the board members.

2001 Membership Dues: \$25.00. **Checks only.** Please make check payable to **AWRA Washington**

Section.

Mail to: AWRA, Washington Section
c/o Ingrid Wertz, Taylor Associates
3917 Ashworth Ave. N.
Seattle, WA 98103

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.

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