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## PRESIDENT'S NOTES

### Tom Martin, President, AWRA Washington Section

Greetings and Happy New Year's to new and returning members of the Washington Section of the AWRA. I am honored to be your President. 2005 promises to be a year full of anticipation! Our section hosts the National Conference in Seattle this November 6-10. The conference gives us an opportunity to showcase Washington's beautiful and extraordinary water resources.

Also this year, the Board of Directors is implementing a long range plan to help our section become more membership-driven and less board-centric. The Board would like you to take advantage of the great resource comprised of our section's Board of Directors, fellow members, and the National AWRA. I invite you to learn more about the board members by visiting our section web-site: [www.wa-awra.org](http://www.wa-awra.org). However, the Board is only sixteen people, and we are humbled by the collective knowledge, capabilities, experience and dedication of the membership. The membership is our greatest resource. This year we have great plans to tap this vast resource and make AWRA a vital asset to our state.

To this end, prior to the National AWRA conference in November, the Section plans to hold two policy dialogs in Washington State. These events are designed to engage and strengthen our membership by making it easier for you to voice your opinion to the rest of the membership. I encourage you to attend our first of two State Policy Dialogs on April 11, 2005 in Tacoma, which will be held in association with the Washington Hydrogeology Symposium. The first policy dialog session will be dedicated to scoping and prioritization of issues. I am pleased to announce that Jim Waldo, former Governor Locke's Water Policy Advisor, will be Keynote Speaker at the first session. The second session, to be held east of the Cascade Crest, will delve into the high priority issues identified in the first session.

For our state policy dialogs, we use as our model the National AWRA policy dialog in Washington, D.C. in 2004. It was immensely successful. A second national policy dialog will be held in Tucson next month (see [www.awra.org](http://www.awra.org)). The purpose of the national policy dialogs are "to provide each participant—and beyond the participants to the citizens of the United States—with a heightened awareness of ALL sides of important water policy issues in the United States." Generally, this is the purpose of our Washington State policy dialogs. Like the national policy dialogs, ours are designed to allow all sides of the issues discussed to be heard with no one group or opinion of greater importance than any other. In addition, the Washington Section Board of Directors would like to raise critical, yet under-represented issues such as climate change, during our state policy dialogs.

I believe that how we participate in sustaining water quality and quantity is a good indication of the quality of our society. This year, we have an excellent opportunity to show the world how Washington makes the best use of our water, liberty and pursuit of happiness. I invite you to participate in our state policy dialogs and help me and the Board of Directors paint this picture of Washington for display at the 2005 National AWRA conference. We are planning a special Northwest Session at the November conference to present the findings of our dialogs to a national, and hopefully, a global audience.

All of our events planned for 2005 flow through the long-range plan for our State Section; to sustain our membership, while facilitating an interdisciplinary approach to sort out our seemingly intractable water resources issues. Participation of the membership in our events is essential to the sustainability of our AWRA Section as well as to the sustainability of the Northwest's water resources. If you are interested in participating in the state policy dialogs, or in the national conference by reviewing presentation papers, organizing a session, or submitting a paper for presentation please contact me: [thomas.martin@pnl.gov](mailto:thomas.martin@pnl.gov).

I look forward to hearing from you! ☺

# Water Management Challenges of Global Warming

by Chris Pitre, Golder Associates Inc.

The scientific community has convincingly shown that global warming and climate change is being accelerated by fossil fuel burning. The Climate Impacts Group at the University of Washington has compiled the results of seven climate models:

## Predicted Changes in the Pacific Northwest (Climate Impacts Group, University of Washington)

	Temperature (°F)	Precipitation	
		Oct-Mar	Apr-Sept
2020s	+2.5	+8%	+4%
2040s	+3.8	+9%	+2%

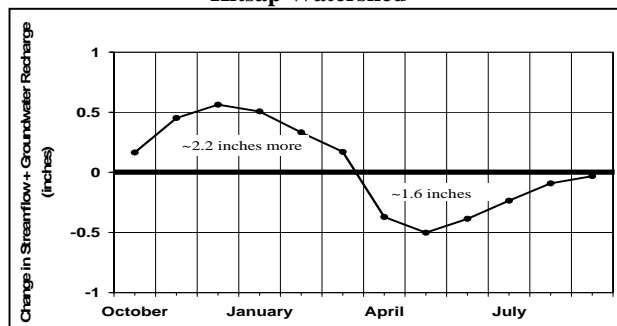
Water resource and supply planning, currently based on current and historical conditions, will have to consider new conditions. Although more precipitation is predicted, higher temperatures will also cause more evapotranspiration. More significantly, the timing of water availability will change.

The effects of global warming on the hydrograph of several major rivers, such as the Columbia River, have been analyzed. The greatest effect is in watersheds with perennial snow pack where the spring freshet melt is shifted earlier in the season. Presented at the WA-AWRA 2004 conference were two case studies to show the predicted effects of global warming on watersheds with transient snow pack (Little Spokane River watershed) and no snow pack (Kitsap watershed). Both of these case studies were developed by Golder Associates based on, but independent of, ongoing watershed planning work.

### Case Studies

**KITSAP:** A monthly spreadsheet water balance for the Kitsap watershed was developed using precipitation (P) and evapotranspiration (ET). Remaining water is available for streamflow (SF) and groundwater recharge (GW), which is collectively referred to as terrestrial water ( $TW = SF + GW = P - ET$ ). The primary difference between the current and predicted future water balance was a small change in the annual terrestrial water, and a significant shift of this water from the summer to the winter (wetter winters, drier summers).

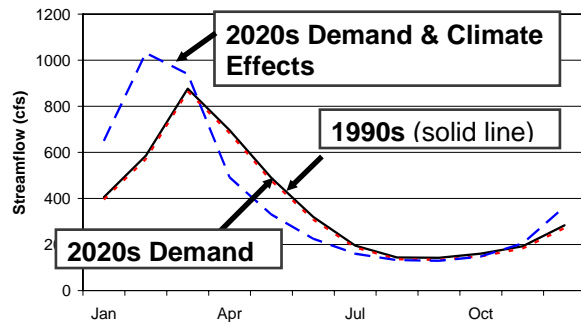
### Monthly Change in Streamflow + Groundwater in the Kitsap Watershed



Conceptually, having the annual terrestrial water concentrated into a shorter period of time in the winter

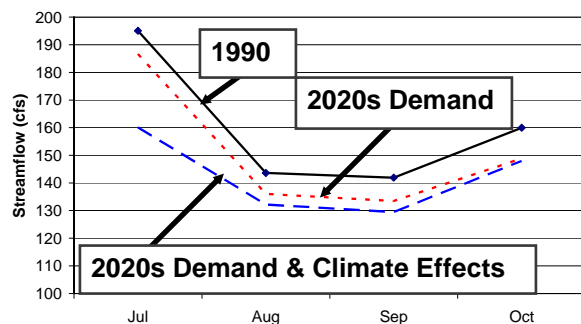
will result in higher winter peak stream flows, less groundwater recharge, and lower summer flows that depend on groundwater. Peak flows have been identified as the current primary cause of degraded fish habitat in the Kitsap watershed and are expected to worsen. Groundwater recharge is reduced by urban development and conventional stormwater management practices, and is expected to be even less under climate change conditions. Stormwater management will become increasingly more important. With less water in the summer, demand is expected to increase, thereby creating even more stress on the hydrologic system.

### Little Spokane River Streamflow



**LITTLE SPOKANE:** An integrated climate, surface water and groundwater simulation model of the Little Spokane watershed (MIKE SHE) was developed for use in assessing water resource management options. Simulated conditions were: current climate and demand; current climate with future demand; and future climate with future demand. Climate change causes peak annual streamflow to occur much earlier in the year because of reduced snow pack storage; future demand reduced summer streamflow by approximately 10 cfs; and, future climate conditions reduced summer streamflow by an additional 5 cfs. There is no significant perennial snow pack in this watershed, and summer streamflow is sustained by groundwater. Therefore reduction in summer streamflow shows that climate change conditions will also reduce groundwater recharge and storage.

### Little Spokane River Streamflow (detail)



While the effects of climate change on snowpack dynamics, peak streamflow and associated reservoir

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operation are broadly recognized, the two examples presented here emphasize the effects on groundwater and low streamflows that depend on groundwater. This has implications with respect to sustainable development of groundwater resources, particularly in water recharge limited areas, and establishing and/or revisiting minimum instream flow regulations

The case studies show that seasonal values become more extreme. In addition to these effects, researchers predict higher variability, and less predictability. Because predictability and reliability are corner stones of water supply management, such management is going to become very challenging indeed, and well within the planning horizon for this discipline (i.e., 20-50 years).

### **Water Rights Policy**

When issuing a water right, water must be determined to be available. Such determinations have historically been made considering current conditions. A determination of availability may be valid at the time of issuance of a water right, but may become invalid as the effects of global warming are realized. Proponents of the current system will present that the doctrine of prior appropriation will address with this by interrupting junior water rights. Opponents of the current system will point out that this is just asking for a management and enforcement nightmare and possibly increasing conflict by granting and then taking away what some people believe is a property (“constitutional”) right.

### **Instream Flow Rule Making**

Instream flow rule making in Washington State typically consists of setting numerical flow numbers for specific periods (e.g., 10 cfs for the period July 15 to September 15). Development of instream flow rules has become much more sophisticated over the past 30 years, advancing from simple approaches of flow statistics (e.g., the Tennant method, or exceedance curves), to the “look-up” tables of the Toe-width method, to biologically-based methods such as the Instream Flow Incremental Methodology (IFIM) that uses Physical Habitat Simulation (PHabSim) models. These methods use either historical data, or stream channel morphology that has been formed by historical and current processes. Because these methods are based on historical data, and future conditions are likely to change, the way that they have been historically used in water resource management applications should be considered exactly that – history. Instream flow rules developed today using conventional methods will be less relevant under future flow regimes (e.g., 20 years).

Because of the uncertainty in predicting climate change effects, less prescriptive and more flexible and adaptable water resource management policies may be the best way to address water resource management, including:

Conservation: Average residential use across Washington varies from 80-300 gallons per day

per capita (gpdpc) by county. Actual average use by some families is on the order of 30 gpdpc, and others claim to use 800 gpdpc. Conservation is a broadly acknowledged tool, but much more can be achieved. Consumptive uses, such as landscape watering, could be restricted.

Reclaimed Water and Water Reuse: Where water supply is pulled from the ground, and waste water discharged to streams and or marine waters, the natural discharge of water is accelerated and a water balance deficit is created. Returning this water to the hydrocycle in an appropriate way (e.g., recharge), or deferring additional use by reusing water can result in environmental benefits. The Washington Department of Ecology has a regulatory framework for these programs, though the associated policies are still evolving.

Adjustable Rationing: Issuing junior water rights that are fully interruptible is rarely acceptable for drinking or economic applications. A set of uses could be defined that may be progressively interrupted, or ramped back a certain percentage based on annual or seasonal conditions. One potential way of effectively implementing such a policy is to have a rate structure that shifts in response to hydrologic conditions and let the market establish the priorities of use instead of policy makers.

Water Markets: Western water law with the doctrine of prior appropriation is creating a world of haves and have nots. The value of a valid water right is being increasingly appreciated, and is appreciating. A recent water right purchase in the Upper Yakima Valley was completed at a value of \$2,700 per acre-foot per year. If current water law does not allow for the rescinding or conditioning of valid senior water rights, then the pressure to issue new ones can be reduced by facilitating a water market.

A logical response to the reduction of snow pack and groundwater storage is to replace and maintain this storage. This may come in many forms with the most obvious being surface water reservoirs and Aquifer Storage and Recovery (ASR), where water is stored during the winter and used during the summer.

Today’s atmospheric concentrations of carbon dioxide have not been seen since the Jurassic. Is this a harbinger of another period of mass extinctions? – Yes. Maybe not of humankind, but of many species, possibly including salmon (and you thought they already had enough to deal with!), polar bears and coral reef communities, to pick a few icons. Already we will only be able to describe to our children some of these beauties (“Really, coral reefs once existed, and we used to have snow days in Seattle. Imagine that!”). To responsibly deal with the challenges that global warming presents to the management of water resources, we have to soberly evaluate the perspectives of the Pollyannas and the Chicken Littles, and do what we can personally and professionally. ☺

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## AWRA-Washington Section 2004 Annual Conference

### The Impact of Climate Change on Pacific Northwest Water Resources

Did you know that climate change will cause many of the ski areas in our region to shorten their season or possibly go out of business altogether? For instance, the predicted snow conditions for Snoqualmie Pass suggest that there may be only 2 days of ski-able snow in the future! Melting Arctic Ice could open up the Northwest Passage, allowing ships to bypass the Panama Canal and West Coast Ports. These are a few interesting and alarming predictions discussed at the 2004 Annual Conference of the American Water Resources Association (AWRA) Washington.

The 2004 conference was held on October 28, 2004 on the causes of climate change and its impact to the Pacific Northwest's water resources. AWRA hosted many scientists and policy makers to address the drivers of climate change, the tools used to explore the effects of climate change, and strategies for planning and adapting to changing conditions. The conference ended with a panel discussion on management and regulatory strategies for adapting to climate change. The conference initiated interesting discussion on many aspects of climate change--- the science, the predicted changes to Northwest hydrology and how we can adapt to changing water supplies.

As is the custom in recent years, the meeting was held in the auditorium of the Seattle Art Museum on Thursday, October 28, 2004, with approximately 80 attendees. The conference was organ-

ized into four sessions featuring two speakers in each session, plus introductory and keynotes speakers. Ed Miles of the University of Washington's Climate Impacts Group provided an excellent overview in his introductory talk about climate change and its implications for water management.

Richard Gammon, Professor of Oceanography at the University of Washington presented a thought-provoking keynote address on the predictions for global-scale climate change during this century and the corresponding societal and ecological impacts expected regionally. The objective of the conference was to educate water professionals of the growing threat of climate change to water resources in our region and initiate discussion on how we can adapt and plan for climate change. The Board thanks the conference speakers for their invaluable contribution to helping us meet this objective.

Funding support for the 2004 conference was provided by 12 corporate sponsors. The Board acknowledges and thanks the conference sponsors for their generous support. For more information about the conference, including presentations and abstracts, please see the AWRA website: <http://earth.golder.com/waawra/>. ☺

*AWRA Washington Section extends a sincere thank you to our conference sponsors, listed page 6. Their contribution supports the awards program and other section activities.*

### **WASHINGTON STATE WATER SUPPLY BULLETINS AVAILABLE ONLINE**

Ecology is pleased to announce that a valuable resource to water resource community is now digitally available. The entire **Washington State Water Supply Bulletin** series is now available in PDF format on a new Ecology website:

<http://www.ecy.wa.gov/programs/eap/wsb/index.html>

**The Water Supply Bulletin series is a valuable collection of reports presenting information about the state's freshwater resources, including groundwater supply, stream discharge, lakes, and snowpack. The bulletins, many of which are authored by the U.S. Geological Survey researchers in cooperation with the state, include data on conditions in Washington as far back as 1878.** Intact hard copies of these documents have been getting more difficult to find over time, so our two programs decided to have the bulletins scanned into PDF format for easy access by all.

The bulletins presented on the website are subdivided into **five major topic areas**: reports on state **Geology and Groundwater Resources**, comprehensive studies of **Hydrologic Systems, Lakes** studies, and historic data summaries of **Snowfall** and **Stream Flow**. At the top of each of these subject pages you'll see a state map. Click the corresponding bulletin number for the study area you're interested in to see the bulletin title. Click that title to see a short description of the bulletin and a further link to the scanned report and map plates. At this time, a number of the PDF files are quite large; in the coming months we hope to break many of the bulletins into smaller parts for easier downloading.

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## University of Washington Faculty and Staff Receive Award for Outstanding Contribution

Each year the Washington AWRA Section honors an individual to recognize his/her outstanding contribution to the water resources profession in the State of Washington. For 2004, this award was presented to a group of water resource professionals at the University of Washington. David Montgomery, Susan Bolton, Derek Booth and Leslie Wall from the University of Washington were acknowledged for their work in editing an important book on water restoration in Western Washington: Restoration of Puget Sound Rivers. The AWRA Section also recognized their collective

contribution to the education and inspiration of a generation of water resource professionals in this region.

In light of these achievements, we congratulate these individuals for receiving the 2004 Award for Outstanding Contribution to Washington's Water Resources. Along with the award, the State Section makes a \$500 donation to a nonprofit, water-related organization of the awardees choice. This year's donation was split between the University of Washington Quaternary Research Center and the University of Washington Center for Water and Watershed Studies. ❧

## 2004-2005 Student Fellowships Awarded

Graduate students from the University of Washington and Washington State University were awarded the Washington State Section's annual student fellowships for the 2004 – 2005 academic year. Ms. Tetyana Lysak received the open competition award for her research on Collaborative Policymaking under the Watershed Planning Act. Ms. Se-Yeun Lee, a member of the University of Washington Student Section of the American Water Resources Association, received the student section member award for her study of the benefits of developing flood rule curves conditioned on climate classification for one or more Columbia Systems Dams. The 2004–2005 Washington Section Fellowship Awards were presented Thursday October 28, 2004 during the Washington State Section Annual Conference held at the Seattle Art Museum.

Se-Yeun Lee is pursuing a PhD in Water Resources, Hydrology and Hydraulic Systems from the University of Washington. Tetyana Lysak is pursuing a PhD in Political Science from Washington State University. Ms. Lee's research will evaluate the flood control storage needs under each of 6 climate control conditions. This will aid in Columbia River management under different ENSO (El Nino Southern Oscillation) /PDO (Pacific Decadal Oscillation) ocean temperature conditions which have been shown to result in different river flow regimes. Ms. Lysak's research will focus on the RCW 90.82 Watershed Planning in Palouse River (WRIA 34), Upper Yakima (WRIA 38) and Lower Wenatchee (WRIA 45). It will assess the benefit of the stakeholder input processes on developing effective Watershed Plans. It will compare the three in terms of their level of success and why that level was achieved.

The fellowship program provides the Section with the opportunity to encourage students attending graduate school in Washington to become the future leaders in water resources management. Because AWRA recognizes the interdisciplinary nature of water resources management, the Section focuses on students who are applying a range of disciplines to their research problems for recognition through the fellowship program. Three criteria, the interdisciplinary nature of the course of study and research; the potential application of the work to current needs in water resources management; and the effectiveness of the response in communicating research objectives, form the basis for the review of fellowship applicants.

The Section provides two awards. One fellowship is awarded through "open" competition to any student enrolled in an appropriate graduate program offered by a Washington State college or university. Competition for the second award is limited to members of AWRA Student Chapter Members; currently only the University of Washington has a student chapter.

In addition to the \$1500 cash stipend, the award recipients receive one-year membership in both the State Section and National AWRA, a one-year subscription to the Journal of the American Water Resources Association, and admission to the Washington State Section Annual Conference. Award winners are expected to report on their work to the Section membership either through an article in the newsletter or by a presentation at a Washington State Section sponsored meeting. ❧

*Notice for the 2005–06 fellowship awards will be posted in a future Section Newsletter. Applications will be due in the fall of 2005.*



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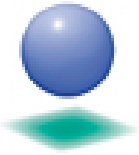
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## 2004 Fall Conference Sponsors

The Washington Section of the AWRA extends our sincere appreciation to our conference sponsors.  
Thank you for helping make the 2004 conference a success!

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### Watershed



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Mentor Law Group  
PLLC



**Golder  
Associates**



**PUGET  
SOUND  
ENERGY**

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### River



**Buck &  
Gordon** LLP  
Attorneys at Law

PACIFIC groundwater GROUP

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### Stream

Adolfson Associates, Inc.  
HDR Engineering, Inc.  
Landau Associates, Inc.  
Preston, Gates and Ellis, LLP

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AWRA Washington Section is pleased to announce the first in a series of three water resources policy dialogues:



**in conjunction with the Hydrogeology Symposium Presents:**  
**A Water Resources Policy Dialogue**  
**Scoping Session**  
**April 11, 2005**  
**1:00-5:30pm**

This is the first in a series of three Water Resource Policy Dialogues to be conducted by AWRA in Washington during 2005. These dialogues will provide an opportunity for professionals from a broad spectrum of disciplines involved with water resources in the State of Washington to help shape our future. The purpose of this first dialogue is to facilitate the identification of priority water resource policy issues to be addressed. Dialogues following this one will focus on the priority topics identified to develop information to aid and inform decision makers. Two more dialogues will be conducted, one this summer in Eastern Washington and one in the fall at the AWRA National Conference in Seattle Washington, Nov. 6-10, 2005.

Time	Policy Dialogue Program in Brief
1:00-1:15	Tom Martin, President AWRA Washington Chapter opens "A Water Resources Policy Dialogue"
1:15-1:45	Keynote Speaker, Jim Waldo, Governor Locke's Water Policy Advisor
1:45-2:15	Introduce panel of experts to facilitate discussions: <ul style="list-style-type: none"><li>• Engineer/Physical Scientist Expert</li><li>• Biologist/Ecologist Expert</li><li>• Legal Expert</li><li>• Economist/Planner Expert</li></ul>
2:15-2:45	Audience questions and responses from experts
2:45-3:15	Networking Break
3:15-4:30	Audience forms into breakout discussion groups
4:30-5:15	Group Reports
5:15-5:30	Closing Remarks
5:30-6:00	Free time
6:00-9:00	Dinner and Networking Boat Tour of Commencement Bay (Optional)

To register and obtain added information, please go to the AWRA web site: [www.WA-AWRA.org](http://www.WA-AWRA.org).

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## **Attention AWRA Members!**

### **Want to get involved? Join an AWRA Committee Today!**

Organizing all the activities and communications that AWRA WA members enjoy requires a lot of hard work conducted by a group of dedicated volunteers. There are several different committees of volunteers that plan and organize such activities as dinner meetings, membership recruitment, state and national conferences, and student fellowship awards. The committees, chaired by AWRA WA board members, are always looking for fresh ideas and energy from members. If you have ideas and interest in enhancing the AWRA WA section, please contact one of the committee chairpersons below. The committees and contact information for the committee chairperson are listed in the following table.

The AWRA Board invites you to join one or more committees and volunteer your time and talents to the Washington AWRA Chapter. There are several committees to choose from so you're sure to find one that meets your interests. Joining is easy, just contact the chairperson listed below.

**2005 State Conference** This Committee plans for the Chapter's annual meeting and conference. Assist with selecting topics, speakers, and other planning requirements. Generally meets monthly, with additional planning sessions closer to the conference date. **Contact: Steve Foster at [sfoster@hdrinc.com](mailto:sfoster@hdrinc.com)**

**2005 National Conference** The Washington Chapter is pleased to host the AWRA 2005 National Conference. This is an exciting opportunity to work in the national spotlight. **Contact: Pete Sturtevant [psturtev@ch2m.com](mailto:psturtev@ch2m.com)**

**Membership Committee** Work to grow our state chapter through planning social events and communicating with members. **Contact: Mona Thomason at [mona.j.thomason@usace.army.mil](mailto:mona.j.thomason@usace.army.mil).**

**Dinner Meetings** This Committee plans 5-6 dinner meetings every year. The meetings feature a speaker who presents a timely and interesting water resource or quality topic. **Contact: Steve Foster at [sfoster@hdrinc.com](mailto:sfoster@hdrinc.com)**

**Finance Committee** Got a financial flair? This Committee oversees the Chapter's funds as we build our way toward purchasing an annuity to fund our scholarship awards. **Contact: Scott Bender at [scott@benderllc.com](mailto:scott@benderllc.com)**

**Awards** Like to read current research? Then this Committee may be for you. Help obtain and judge entries for the Chapter's two \$1,500 scholarships. **Contact: Stan Miller at [samillerh2o@comcast.net](mailto:samillerh2o@comcast.net)**

**Newsletter Committee** Release the writer within! Assist with obtaining and writing articles for the Chapter's six issues. **Contact: Jacque Klug at [jkl461@ecy.wa.gov](mailto:jkl461@ecy.wa.gov).**

**Nominating Committee** A new Committee aimed at nominating Board Members. **Contact: Pete Sturtevant at [psturtev@ch2m.com](mailto:psturtev@ch2m.com)**

**Long-Range Planning** Help direct the long-term vision for the Washington Chapter. **Contact: Chris Konrad at [cpkonrad@usgs.gov](mailto:cpkonrad@usgs.gov)**

### 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.

### 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 WA State Water Resources Dialog** the first in a series of three dialogs will be held on April 11, 2005 in Tacoma, Washington. See announcement in this newsletter for more details.

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

**Washington Hydrologic Society.** Monthly meetings. For more information, contact Alan Black, at [ABlack@HNTB.com](mailto:ABlack@HNTB.com) or 425-450-2515.

**Water and Sustainability in the Region. 15<sup>th</sup> Annual Review of Research. University of Washington Center for Water and Watershed Studies.** February 17<sup>th</sup>, 2005. HUB Ballroom University of Washington, Seattle. <http://depts.washington.edu/cwws/Outreach/review05.html>.

**ASCE Water Resources Brown Bag Meetings.** The Seattle Chapter of the American Society of Civil Engineers Water Resources/Environmental (WRE) Group holds noon brown bag meetings every third Thursday of each month, unless conflicts with holidays occur on a variety of water resources topics. The location alternates each month between the consulting firm offices of HDR in Bellevue and Brown and Caldwell in downtown Seattle. See the Seattle ASCE Chapter website for information: <http://www.seattleasce.org>.

### WA-AWRA Board Members

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Faculty Advisor: **Anne Steinemann**

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[acstein@u.washington.edu](mailto:acstein@u.washington.edu)

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2005 Membership Application / Change of Address Form  
( ☞ please circle, as appropriate ☜ )

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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.***

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American Water Resources Association, Washington Section

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(Change service requested.)

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