
PRESIDENT'S NOTES

by Fran Solomon, President, AWRA Washington Section

Welcome to a brand new year of AWRA activities! I would like to introduce myself as the new Washington Section President and to thank outgoing President **Pete Sturtevant** for his excellent leadership last year. I am an aquatic ecologist at the King County Department of Natural Resources and have served the Washington Section of AWRA as an at-large Board member, Secretary, and Vice-President. I just returned to Seattle after a fascinating visit to the awesome, largest freshwater ecosystem in the world-, i.e. the Amazon River and its many tributaries-, and am now looking forward to focusing again on water resources in Washington and to working with the 2001 Board of Directors. The board is a microcosm of our chapter, comprised of water resources professionals from many fields (e.g. biology, hydrology, geology, engineering, planning, policy development, environmental law) and workplaces including government agencies, consulting companies, nonprofit organizations, and academia. The interdisciplinary nature of AWRA is our strength.

Members of the 2001 Board of Directors are planning a full plate of activities for this year. There will be four or five dinner meetings and/or brown bag seminars, where we invite a speaker or a panel to address a water resources topic and where attendees have the opportunity to renew professional acquaintanceships and to meet new colleagues. The first dinner meeting will take place in late February or March. Stay tuned for the topic and restaurant location.

Mark your calendars for November 15. Our 2001 Fall Conference will take place then at the Seattle Art Museum in downtown Seattle. The Conference Committee is in the process of identifying topics and will soon begin to develop the conference program. If you have ideas for potential conference topics, please contact John Hoey or Anne Savery, the committee co-chairs (see the Board member roster in this newsletter).

Our chapter provides student support in the form of two annual graduate student fellowships and sponsorship of a student chapter at the University of Washington. This year, we will inaugurate the annual AWRA Washington Section Award for an individual who has made outstanding contributions to the water resources field. I encourage each of you to think about potential nominees for this award; please contact Pete Sturtevant or myself for a nomination form. Both the fellowships and the award will be presented at the Fall Conference.

An excellent way of getting involved in your AWRA chapter is to join a committee. This year, the committees and their chairs are: Conference (**John Hoey** and **Anne Savery**), Dinner and Events (**Erin Nelson**), Fellowships and Awards (**Stan Miller**), Finance (**Mike Wert**), Newsletter (**Chris Pitre**), and Membership (**Ingrid Wertz**). Please contact the appropriate chair of the committee in which you are interested. The more actively involved you become in the Washington Section, the more you will benefit from your membership.

Speaking of membership, if you attended the 2000 Fall Conference, you are already a member for 2001. If you didn't attend the conference and have not yet had a chance to renew your membership, there is an application form in this newsletter. I look forward to a robust membership this year and to seeing many of you at our chapter activities.☺

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 Mar-Apr-May, 2001 newsletter. The submittal due date is March 2, 2001. The editor reserves the right to make changes for reasons of length, grammar or clarity. Contact Chris Pitre at (425) 883-0777, or send submittals directly via:

Internet Mail: cpitre@golder.com (most document/graphic formats are acceptable). Recent newsletters are available on: <http://earth.golder.com/waawra/>

Reflections on the Price of Water

by Joe Mentor, Jr., Mentor Law Group, PLLC

Traditionally, the need for water has been met by obtaining new water rights. Water rights essentially have been free to those who are authorized under the law to use them. The "cost" of water (i.e., the price paid for using it) has included the capital cost of facilities, together with operations, maintenance and permitting costs. But ownership of the water right itself has not added to the cost of receiving water.

Today, water rights transfers are more frequent as new water rights are difficult or impossible to obtain. The reallocation of water, however, almost always comes at a cost. Typically, water transfers also involve the transfer of the economic value of the water to those who need the water from those who already enjoy the right to use it. Consequently, where the need for water is met through the reallocation of existing water rights, the "cost" of water invariably includes a commodity cost component, based on the value of the water right itself.

Water transfers reflect greater efficiencies in agricultural water use, conversion of farmland to other uses, and increasing urbanization. Furthermore, transfers from existing uses can avoid many significant environmental impacts caused by developing new water supplies. There are a number of ways that water transfers can be used to reallocate existing water supplies. For example, water transfers may take the form of sales, leases, water supply contracts, "assignments" of contract entitlement, exchanges or other creative arrangements. Regardless of the form of transaction, the parties must agree on the appropriate consideration, or "price" of water.

Water Rights are Real Property Interests

A water right under Washington law is appurtenant to land on which water is beneficially used. Unless explicitly reserved, a water right passes to the grantee upon conveyance of appurtenant real property. Unlike riparian rights, however, appropriative water rights are considered independent property rights. A water right may be transferred incident to the sale of appurtenant land or transferred separately. A result of the appurtenancy provisions of state law is that water rights are treated as real property interests.

Regulators do not establish a set price for the sale of water rights in Washington. Consequently, the price for water is set through negotiations on the open market between willing sellers and willing buyers. As a real property interest, normal appraisal practices for the valuation of real property should apply.

There are many ways to value water as real property. The choice of a valuation methodology depends on a number of factors, including the current use of the water, the intended use, and the location both of the former use and of the intended use. The United States Supreme Court

once defined "fair market value" as "the amount for which, in all probability, the property would be sold by a knowledgeable owner, willing but not obligated to sell, to a knowledgeable purchaser, who desires, but is not obligated, to buy." With this definition in mind, it is appropriate to value a water right with reference to its fair market value.

Comparable Sales Establish Value

As with other real property interests, comparable sales are the most reliable indicator of fair market value. The biggest challenge is in determining what constitutes a "comparable sale." The amount of water needed for a particular use in a particular place is highly variable, depending on a number of factors. Water generally is used both for conveyance and for consumptive uses. The amount of water needed for both uses typically is referred to as the "water duty," and represents the total amount diverted or withdrawn for a particular use. The water duty for a particular crop in a particular location depends not only on the crop itself but also on the types of soil, method of irrigation, the relative efficiency of the irrigation system, and on the microclimate at the location of use.

RCW 90.03.380, Washington's water transfer statute, allows a water right holder to transfer the entire amount of a water right put to beneficial use, so long as third-party water rights are not adversely affected. Generally, however, water transfers are limited in quantity by the consumptive use portion of the water right. In this way, impacts to other water uses -- including instream uses -- are avoided. Basing the value of a water right on the "consumed" portion provides a common denominator regardless of other variables affecting the historically diverted quantity of water. Consequently, the consumptive use portion of the water right is an appropriate "unit of measure" for purposes of valuation.

Focus on Consumptive Use

For irrigation water rights, determining the consumptive use portion of a water right requires identifying what portion of the water right is consumptively used by evaporation, transpiration, and incorporation into plant tissue, and what portion of the historic diversion represents return flows to the local watershed. The Washington Irrigation Guide (WIG), prepared by the Natural Resources Conservation Service and the Washington State University Cooperative Extension Service, includes water requirement estimates for the irrigation of various crops by location around Washington State. The data available in the WIG is based largely on the Blaney-Criddle method of determining the consumptive use of a crop at a given location. The Blaney-Criddle formula takes into consideration, among other factors, such variables as the amount of water required for certain crops to reach maturity, the average air temperature at the location of the crop, the available

precipitation, and the available daylight during the irrigation season. The return flow portion of a water right can then be estimated by subtracting the consumptive uses estimate from the total amount of water diverted.

For a domestic or municipal water right, the consumptive use portion can be identified by comparing the total amount of water diverted with the amount of wastewater generated by a particular use. Appropriate consideration needs to be made for "infiltration and inflow" of stormwater, depending on the nature and condition of a wastewater system.

Comparing Other Real Property Transactions

Another challenge for "comparable sales" valuation is the paucity of water rights transactions. Unfortunately, comparable sales of water rights are not easy to come by at a time when water markets only now are emerging. Besides comparable sales of water rights, however, sales of other real property interests can provide an accurate measure for water valuation purposes. In this regard, it is appropriate to consider valuation of a water right much in the same way as an appraiser would value any other less-than-fee interest. A conservation easement is a good example of such an interest. To determine the value of a conservation easement, an appraiser will determine the worth of the property both before and after the easement is imposed. For an appurtenant water right, value is the difference in value of the underlying real property interest both before, and after, the water right is severed from formerly-appurtenant real property.

In another sense, the value of comparable fee simple real property interests can be a reliable indicator of the value of a water right. For many

purposes, water is worth whatever you have to pay for it. But a prospective purchaser never should have to pay more for the water right than if the purchaser bought an entire fee simple interest in land to which a water right was appurtenant. The purchaser of an irrigation parcel either can fallow an irrigated parcel of land or convert it to another use. In either case, the water right should cost no more than the cost of the appurtenant real property itself.

Conclusion

The cost of water should be determined with reference to its fair market value. It is highly misleading to identify water "prices" with reference to the total annual or instantaneous quantity of a water right. A better approach is to calculate the cost of a water right based on the portion used for consumptive purposes. Any other measure will result in a comparison of apples and oranges.

It is equally misleading to think there can be a statewide "average price" for water. Instead, the price will depend on land prices in the vicinity where the water right is located when land prices vary throughout the state as much as they do. The cost of water rights bears a direct relationship to the price of appurtenant real property. Consequently, comparable sales of comparable real property interests provide the most reliable indicator of the fair market value, or "price" of a water right.

Joe Mentor, Jr. is a lawyer with the Seattle law firm Mentor Law Group, PLLC. The firm provides legal services relating to water and other natural resources issues. For more information on the topic of water marketing and the pricing of water rights, please contact Joe at 206.676.7008. His e-mail address is mentor@mentorlaw.com.☺

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 7.

Water Marketing in Washington: A Summary of the 2000 Fall Conference

by Ann Root, Washington AWRA Section Director

The topic for the Fall 2000 Washington Chapter Annual conference was Water Marketing in Washington: Negotiating for the Future. Although water marketing is not yet very active in Washington, there is considerable interest in marketing as a potential solution to water allocation problems in the state. The purpose of the conference was to provide a forum for exploring the potential for water marketing in Washington. The different perspectives presented at the conference succeeded in that goal of exploration.

The conference was a success with over 200 people from a variety of backgrounds in attendance. There were presentations by seventeen speakers on a wide range of topics related to water marketing. A highlight of the conference was the keynote speaker, Dr. Larry MacDonnell, a noted expert in water law and water marketing. He is the first keynote speaker to be invited to an annual conference from outside the state.

An awards ceremony was conducted after lunch. During the ceremony, Section board member Stan Miller presented the annual student fellowships. This year's fellowships were presented to Estelle Balian of the University of Washington and Kari Odden of Western Washington University. For more information on the fellowships see the related article inside. Chapter President Pete Sturtevant recognized the contributions to the state Section of three former Section presidents who retired from the board last year. Teresa Platin (1999), Adam Gravley (1998), and Rod Sakrison (1996-1997) were presented with plaques commemorating accomplishments during their terms. They will all be missed on the Board of Directors.

The conference began with a keynote speech by Dr. MacDonnell, the former director of the Natural Resources Law Center at the University of Colorado School of Law. He currently works as an attorney and consultant in Boulder, Colorado. Dr. MacDonnell introduced his talk with the statement that the question of water marketing in Washington is not "should a market exist, but how should it occur." He presented his perspective on the problems and issues associated with water markets based on his experience in other western states. His talk laid a solid framework for the presentations that followed. Dr. MacDonnell concluded his talk with suggestions for water markets in Washington and other states. These suggestions included clarifying water right ownership for purposes of a transfer of title, clarifying protectable interests in a change proceeding for purposes of a change of use, methods of improving assessment of "no injury," legislatively authorizing the creation of water banks to facilitate transfers of water rights, and allowing water

rights changed to instream flows, or other environmental uses, to be held privately.

The two morning sessions were designed to provide background for water markets in Washington. The first session began with Sarah Mack, an attorney with Stoel Rives, LLP, describing the legal considerations related to water reallocation in Washington. Her presentation focused on the legal process for reallocation of water rights in Washington. She emphasized that the current decision-making system in Washington lacks the clarity, accountability, and predictability necessary for an effective water market system. Dr. Ralph Murphy, a professor in the Master's of Environmental Studies Program at Evergreen State College, provided a stimulating and often amusing discussion of the economic aspects of water marketing. His presentation summarized the technical and economic problems that water markets must overcome to be successful. The economic portion of this discussion focused on market failures that inhibit marketing in water. Chris Pitre, a Senior Hydrogeologist with Golder Associates, presented the scientific and technical aspects of water marketing. He described the use of information management tools in identifying water rights for acquisition, the due diligence process in evaluating the validity of water rights, and workable mitigation strategies to facilitate processing of water right changes. Rachael Paschal Osborn, an attorney now working in private practice in Spokane, presented the environmental perspective with the theme that water marketing generally benefits the environment by allowing re-allocating of existing water rights to environmental uses. She discussed the problems that are slowing the development of water markets in Washington and made recommendations to facilitate water marketing for both out-of-stream and instream water users.

The second morning session was kicked off by Dr. Darryll Olsen, a member of the Benton County Water Conservancy Board. Dr. Olsen discussed the problems associated with water marketing emphasizing the need for minimal administrative process and provided examples of water market transactions through conservancy boards. Steve Suagee, an attorney with the Confederated Tribes of the Colville Reservation, presented a tribal view of Washington's water conservancy boards. He stated that the Legislature established conservancy boards without apparent consideration of the potential for conflicts with tribal jurisdictions. His discussion concluded with the recent Ecology decision that the Okanogan County Conservancy Board's jurisdiction is limited on tribal lands. Keith Phillips, Program Manager for the Department of Ecology's Water Resources Program, concluded the morning session with his presentation on Ecology's perspective on water marketing.

He discussed Ecology's program for purchasing water rights with water granted by the Legislature and concluded that water marketing should not be conducted by the agency designated to regulate water rights. The successes of the program has been those purchases conducted through the Washington Water Trust.

The two afternoon sessions were devoted to discussions of creative approaches to water marketing that are occurring in Washington. The first session began with the Executive Director of the Washington Water Trust, Patty McCleary, discussing the successful transactions of the Water Trust. Her presentation provided a clear picture of the problems and rewards of working with individual water rights holders to acquire water for in-stream purposes. Jim Esget, Manager of the Bureau of Reclamation's Yakima River Basin Water Enhancement Program, discussed the Bureau's efforts to acquire water rights to protect streamflows in the Yakima Basin. He discussed the complications of working in a basin undergoing general adjudication and recommended permanent purchases of water rights over short-term leasing. Adam Gravley, attorney with Preston, Gates & Ellis, substituted for Jerry Ficklin of the Simpson Timber Company to discuss the Goldsborough Creek Restoration Project. This project was not a simple water marketing deal, but involved a creative approach involving exchange of a water right, a property trade, dam removal, and stream restoration. Participating parties included the Simpson Timber Company, Washington Departments of Fish & Wildlife and Ecology, the Army Corps of Engineers, and other private parties.

The concluding session for the conference focused on issues associated with municipal water markets. The session began on a large scale with a discussion from the Seattle perspective, and proceeded to the perspective from smaller municipalities. Paul Reiter, Director of Strategic Policy for Seattle Public Utilities, discussed the regional approach taken by SPU to provide water to the Seattle municipal area. Kathy Callison, the

Water Resources Program Manager for the City of Tumwater, used her recent attendance at the play The Odyssey as an analogy to describe the challenges of water marketing for smaller municipalities. She emphasized that the lack of resources of smaller municipalities puts them at a disadvantage in water transactions. The final talk of the conference was presented by Tom Pors, an attorney with Foster, Pepper & Shefelman, PLLC in Seattle. Mr. Pors described the complicated procedures involved in transferring an irrigation water right to a municipal water right in the eastern Washington City of Warden. Initial efforts to process the change application through a water conservancy board were questioned following the Center for Environmental Law & Policy's partially successful challenge of Ecology's administrative rules for Water Conservancy Boards (WAC 173-153). Warden has joined an appeal of that case, but also took steps to better secure transfer approval, because they sold municipal bonds to pay for the water right. The City of Warden filed a new transfer application with Ecology and obtained priority processing through recognition of significant environmental benefits from the retirement of the previously irrigated land to wildlife sanctuary. Ecology was reviewing the new application at the time of publication of this article. The Warden situation illustrates the old adage, "There's more than one way to skin a cat."

The conference committee would like to thank all the presenters who contributed their time to present their views on water marketing and make the conference an informative forum on potential water marketing in Washington. We would also like to thank the Corporate Sponsors who provided financial support for the conference and the student fellowships. Numerous volunteers contributed to the logistical success of the conference including **Johnny Grady**, president of the AWRA student chapter and the student volunteers whom he recruited, **John Hoey** of CH2M Hill and **Laura Landauer** of Golder Associates. The conference would not have proceeded as smoothly without their efforts. ❧

Newly Filed Water Bills

SB 5040 - Provides additional good cause reasons to extend the time of certain water project construction work.

SB 5041 - Authorizes a water conservancy board to approve or deny certain water transfers.

SB 5042 - Declares that a certificate issued by the department under the provisions of chapters 90.03

or 90.44 RCW may not be revoked or amended without specific legislative or judicial direction, provided that the water right represented by the certificate has not been relinquished under the provisions of chapter 90.14 RCW. ❧

These bills can be reviewed at:
<http://www.leg.wa.gov/wsladm/bills.htm>

Snowpack a 40-year-low above Grand Coulee Dam

By Linda Ashton, Reprinted with permission of The Associated Press.

YAKIMA - The snowpack in most of the hills and mountains that feed the Columbia River Basin is barely over half of average this year, and in samples taken above Grand Coulee Dam, a 40-year-low was recorded Jan. 1.

The snowpack in British Columbia is at 52 percent of average, and it's the source of much of the water that feeds the 14-dam hydropower system on the Columbia River.

"That's really bad, because that's where most of the fuel comes from," John Harrison, a spokesman for the Northwest Power Planning Council, said yesterday.

Dan Moore, a hydrologist with the National Resources Conservation Service's National Water and Climate Center in Portland, isn't sounding the alarm quite yet.

"It is early," he said. "One of the things I would caution about is the low record on the Columbia above Grand Coulee."

The Columbia, whose dams are the principal source of electricity for much of the Pacific Northwest, originates in Canada at Columbia Lake before wandering 1,000 miles to the Pacific Ocean. It and its main tributary, the Snake River, draw water from British Columbia, Montana, Wyoming, Idaho, Washington and Oregon.

When the Canadians sample snowpack, they do a lot more sites for February than January, so a more representative tally could be forthcoming.

"It's still a record, but being that it's early, if I were a reservoir operator or an irrigator, I would probably at least keep my fingers crossed until February and then find out if things seem to be recovering at all."

A lot of comparisons for snowpack are based on peak snowpack, which typically occurs in April, as opposed to average snowpack, Moore said. This winter has a "good chance to move up toward normal," he said. Still: "We went through the

years of record (which began in 1961) and found that there isn't a year on record that has come all the way back to normal after starting this low.

"The closest one was in 1966, which got up to 96 percent of normal after starting out almost as low," Moore said.

The best snowpack in the Columbia River Basin currently is around the Snake River headwaters in Wyoming, at 79 percent, followed by the Deschutes River sub-basin in Oregon at 75 percent.

Most of the Washington state snowpack is in the low 60 percent range, with the Yakima River area at 64 percent.

Central Idaho is in the low 70 percent range, but the Salmon River area snowpack is at 63 percent, and the Clearwater River sub-basin is at 61 percent. The sub-basins north of the Spokane River are just over half of average. Overall, snowpack for the Columbia River above The Dalles, Ore., is currently at 26 percent of peak and 59 percent of a normal Jan. 1.

For hydropower producers, the water supply is adequate for now as long as winter weather remains normal, Harrison said.

"It's a fine line between supply and demand," he said.

"If it gets colder and drier, we may to have to call on water that's in reservoirs now that we would have used later in the spring and summer," Harrison said.

"That would exacerbate the low-water condition that we're going to experience later in the year," The upper Columbia Basin is the worst place to have a record-low snowpack.

"The water in the snow in the upper basin is used up to 15 times as it goes down through the system to generate power," Harrison said. "It is the most valuable water in the system in terms of hydropower generation. ❧"

Paul Reiter Moves to International Water Association

Paul Reiter, Seattle Public Utilities (SPU) director of strategic policy since 1996, has accepted a position with the International Water Association (IWA), effective January 3. Reiter, who will relocate to the organization's headquarters in London, will be responsible for the IWA's international strategic program development.

Reiter helped create the foundation for Seattle's Tolt River Design-Build-Operate Project. This project and the proposed Cedar treatment plant

will provide the City with the best treatment technology available in North America, and represents a first of its kind in the U.S. while saving the City \$70 million in construction and operating costs for the Tolt plant alone. Working with regional water customers, Reiter has been essential to the creation of a new regional water organization to address future water supply issues in the greater Seattle metropolitan area."

AWRA-WA STATE CONFERENCE CORPORATE SPONSORS

The AWRA Washington State Section would like to extend a sincere thanks to the following corporate sponsors who have provided financial support and assistance toward this year's conference.

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2000–2001 Fellowships Awarded

by Stan Miller, Washington AWRA Section Director

University of Washington graduate student **Estelle Balian** and Western Washington University graduate student **Kari Odden** have been awarded the Washington State Section's annual student fellowships for the 2000 – 2001 academic year. Ms. Odden received the open competition award for her study on the Effects of Land Use Practice on Stream Temperature in Northwestern Washington. Ms. Balian, a member of the University of Washington Student Chapter of the American Water Resources Association, received the student chapter member award for her study of Growth and Production of Dominant Riparian Trees in Pacific Coast Rainforests. The 2000 – 2001 Washington Section Fellowship Awards were presented Wednesday November 15, 2000 during the Washington State Section Annual Conference held at the Seattle Art Museum.

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 by supporting promising individuals with a financial incentive to pursue their studies. 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 form the basis for the review of fellowship applicants: 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.

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. Sponsoring faculty wishing to assist students in establishing Chapters at their educational institutions are encouraged to contact Stan Miller, e-mail smiller@spokanecounty.org, Phone(509) 477-6024.

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.

Notices for the 2001–02 fellowship award will be posted in a future Section Newsletter. Applications will be due in the fall of 2001. ❧

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UW STUDENT CHAPTER UPDATE

by Johnny Grady, UW Student Chapter President

The AWRA Student Chapter at the University of Washington is well into its fifth year of existence. Current membership is approximately 56 undergraduate and graduate students from various disciplines on the campus of University of Washington. The Fall was filled with carrying on the traditions of the Chapter—community service, social events, and guest lectures. This year's goal is to expand the involvement of our diverse group of members through social and professional exchange.

The academic year began with Dr. Derek Booth, AWRA Student Chapter Faculty Advisor and Director of the Center for Urban Water and Resources Management at the University of Washington, giving a lecture on "Urban Land-Use: Impacts on Streams" at a meeting of the Chapter in October. He spoke on the geological history of the Pacific Northwest and current patterns of development in the region. He raised the question of what effect urbanization will have on natural stream systems. The next Student Chapter meeting will be in late February with a lecture on the newly implemented 4(d) rule.

One aspect of the Student Chapter is to participate in environmentally related community service projects. The student chapter volunteered in the 2000 Sammamish ReLeaf Project on a sunny Saturday in October. Several members served as team leaders for the event while others used shovels to dig holes for the saplings. The planting, which was along the Marymoor Park reach of the river, is part of a bigger landscape of nearly 10,000 native trees and shrubs planted along the Sammamish River that month by volunteers. As the plants grow, they will hold the soil on the riverbank, shade and cool the river and someday provide woody debris improving water quality and habitat for threatened Puget Sound Chinook salmon. April 2001, the Student Chapter plans to visit Swamp Creek, a restoration site adopted by the student chapter in 1998 as part of the King County Habitat Partners Program.☺

For more information on the AWRA University of Washington Student Chapter, email, awra@u.washington.edu or check out our web site at <http://students.washington.edu/>.

Upcoming Events

See <http://earth.golder.com/waawra> for web site links.

February 12-14, 2001, Puget Sound Research 2001: A Conference on Research on Puget Sound and the Georgia Basin. Bellevue, Washington. http://www.wa.gov/puget_sound.

February 22-23, 2000, Pacific Northwest FOCUS Conference, Portland Oregon. <http://www.ngwa.org/education/focuscon.html>.

May 20-24, 2001. World Water and Environmental Resources Congress. Orlando, Florida. Paper submissions due by February 1, 2001. *Paper submissions due by February 1, 2001.* <http://www.asce.org/conferences/wwercongress/index.html>.

May 20-24, 2001. Specialty Symposium: Integrated Surface and Ground Water Management. Abstracts due by February 14, 2000. *Abstracts due by February 14, 2001.* <http://www.asce.org/conferences>.

June 27-30, 2001. Summer Specialty Conference: Decision Support Systems for Water Resources Management. Snowbird, Utah. <http://www.awra.org/meetings/future.html>.

June 27-30, 2001, Transbasin Water Transfer, A USCID Water Management Conference. Denver, Colorado. Denver, Colorado. For additional information email Larry Stephens: <mailto:stephens@uscid.org>.

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/future.html>.

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>).

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 _____ @ _____

Check -----if----- you would like to be actively involved on a committee.
You will be contacted to determine what committee involvement you would like or feel free to contact any of the board members.

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

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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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