

2017 AWRA-WA
Annual State Conference



100 Year Anniversary of the Washington Water Code:

*Where We Came From &
Where We're Going*



October 3, 2017

Mountaineers Seattle Program Center
Seattle, Washington

**The American Water Resources Association
Washington Section**

is a scientific and educational 401(c)(3) 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. Opinions and views expressed in this conference are those of the speakers, not AWRA-WA.

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Program Design: Rebecca Inman, Department of Ecology

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Cedar River Pipeline Number 1 under construction on hill east of Renton, 1899
Courtesy of the Seattle Municipal Archives (Item 7261)

2017 CONFERENCE COMMITTEE

Conference Chair

John Chandler, Puget Sound Energy

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Rabia Ahmed, Maul Foster & Longi
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Tyson Carlson, Aspect Consulting
Dave Christensen, Department of Ecology
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Matthew Porter
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Thida Nimkorn

CONFERENCE WELCOME



Lake Shannon and Lower Baker Dam (constructed 1925)
Photo by John Chandler, Puget Sound Energy

Dear Colleagues,

The Washington Section of the American Water Resources Association (AWRA-WA) welcomes you to the 2017 State Conference.

This year's theme is centered around the 100 year anniversary of the Washington Water Code. Such milestones offer the opportunity for reflection as we remember the past and ponder what the future holds.

Washington was a very different place 100 years ago. There were only 1.3 million people, as opposed to the 7.3 million we have today. Water was often seen as an inexhaustible resource to be put to use. Our values and management practices have shifted immensely in the last century, with a much greater emphasis on instream flows, a better understanding of the resource, and legal mechanisms to address conflicts.

Yet here we sit in 2017 with a variety of challenges, successes, and unknowns. The Hirst decision resulted in political disagreements and a failure to pass a capital budget. On the other hand the judge issued a Proposed Final Decree in the Yakima Adjudication in August 2017, a major milestone after four decades.

CONFERENCE WELCOME

As we consider the future many questions arise. How do we continue watering a desert with more uncertain supplies, millions of additional residents, while also protecting the environment and honoring treaty rights? What kinds of compromises will we have to make? Are we ready for the challenges ahead of us?

Today's conference is slated with exceptional presenters to help us put the past into context, understand the present more clearly, and provide insights into the future of a resource that affects each of us. The conference committee has been meeting weekly since February to pull this event together and I am excited about the quality of the program and diverse viewpoints represented. I personally thank the conference committee members; we are an all-volunteer group who has spent a significant amount of time to create the themes, find highly talented speakers, and execute the logistics of an event of this size. I also congratulate the committee; as of the time of this writing registration for this event was occurring at a record pace. There are also several student volunteers who will be helping throughout the conference. We thank them for their help too.

Our sponsors also play a critical role in this event. The AWRA-WA thanks them for keeping the prices of this event lower and therefore making it easier for more people to attend. Their generosity also funds two student scholarships, as well as paying for students to attend the conference at a discounted price and dinner events throughout the year for free.

The AWRA-WA is a non-profit, volunteer-run organization with a clear vision; to provide forums for advancing water resources management in Washington and the Pacific Northwest region; serve the public interest by supporting education and informational exchanges; involve professionals and students from all disciplines and interested members of the public in activities that promote broad discussion and understanding of water resources issues; and recognize excellence in water resource education, management, and research. If you have any suggestions for us to further these causes, then please write your comments on the survey or talk to members of the Board or committee.

Finally we want to thank each and every one of you for attending. We hope you enjoy the excellent presentations, network with your peers, meet some new connections, and join us for drinks and hors d'oeuvres at the reception afterwards. We look forward to see you at future AWRA-WA events.

Sincerely,

John Chandler, Conference Chair



2017 BOARD MEMBERS

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AGENDA

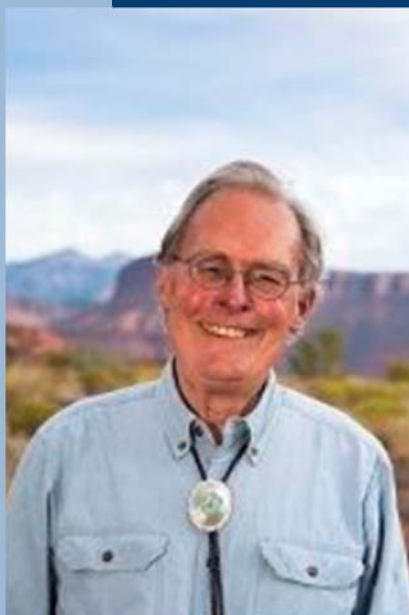
7:00—8:00	Registration and Networking
8:00—8:15	Welcome by Conference Chair
	<i>John Chandler, Puget Sound Energy</i>
8:15—9:00	Keynote Address
	<p><u>Speaker</u></p> <p>Professor Charles Wilkinson University of Colorado School of Law</p>
9:00—10:00	Session 1: Early Water Code History
Abstracts on pages 11 - 12	<p><i>Moderator: Andy Dunn, RH2 Engineering</i></p> <p><u>Speakers</u></p> <p>Tom McDonald, Cascadia Law Group</p> <p>Tom Ring, Yakama Nation</p>
10:00—10:20	Networking Break
10:20—11:30	Session 2: Contemporary Water Code History
Abstracts on pages 13 - 14	<p><i>Moderator: Dave Christensen, Department of Ecology</i></p> <p><u>Speakers</u></p> <p>Robert Barwin, retired from Department of Ecology</p> <p>Hal Beecher, retired from Washington Department of Fish and wildlife</p> <p>Ken Slattery, retired from Department of Ecology</p>
11:30—11:50	State of the AWRA-WA Section and Outstanding Service Award
	<i>AWRA-WA Board President: Steve Nelson</i>
11:50—12:40	Lunch

AGENDA

12:40—1:50	Session 3: Defining Future Risks
Abstracts on pages 16 - 17	<p><i>Moderator: Steve Hirschey, King County</i></p> <p><u>Speakers</u></p> <p>Jenny Adam, Washington State University</p> <p>Peter Dykstra, Plauche & Carr LLP</p> <p>Rachael Paschal Osborn, Attorney at Law</p>
1:50—2:05	Networking Break
2:05—3:35	Session 4: Identifying Possible Solutions
Abstracts on pages 18 - 20	<p><i>Moderator: Tyson Carlson, Aspect Consulting</i></p> <p><u>Speakers</u></p> <p>J. Ryan Brownlee, Aspect Consulting</p> <p>Lynette de Silva, Oregon State University</p> <p>Lisa Pelly, Trout Unlimited</p> <p>Alan Reichman, Washington State Attorney General's Office</p>
3:35—3:50	Networking Break
3:50—5:00	Session 5: Future Direction and Legislative Change
	<p><i>Moderator: Adam Gravley, Van Ness Feldman</i></p> <p><u>Panel Speakers</u></p> <p>Jaime Pinkham, Columbia River Intertribal Fish Commission</p> <p>Scott Revell, Roza Irrigation District</p> <p>Derek Stanford, Representative of the 1st Legislative District</p> <p>Charles Wilkinson, University of Colorado</p>
5:00 - 7:00	Closing Remarks and Reception

PROGRAM AND ABSTRACTS

KEYNOTE ADDRESS



Professor Charles Wilkinson

University of Colorado

School of Law

Western Water Law and Policy in the Modern Era: Has Washington Made the Needed Changes?

Charles Wilkinson, Distinguished Professor and Moses Laskey Professor of Law at the University of Colorado has authored fourteen books, including the standard law texts on Federal Public Land Law and Indian Law: *The Eagle Bird: Mapping a New West*; *Crossing the Next Meridian: Land, Water, and the Future of the West*; and *Blood Struggle: The Rise of Modern Indian Nations*.

Professor Wilkinson has received teaching awards from his students at every law school where he has taught. The universities of Colorado and Oregon have given him their highest awards for leadership, scholarship, and teaching.

He has also won acclamation from non-academic organizations including the Grand Canyon Trust's John Wesley Powell Award, for extraordinary vision, passion, and commitment to the Colorado Plateau; The National Wildlife Federation's National Conservation Award; and the Federal Bar Association's Lawrence R. Baca Award, for Lifetime Achievement in Indian Law.

Additionally *Outside Magazine* included him on a list of "People to Watch," naming him as "the West's leading authority on natural resources law."

He has worked on several boards, including The Grand Canyon Trust and The Wilderness Society.

PROGRAM AND ABSTRACTS

8:00 - 8:15

Conference Welcome

Conference Chair: John Chandler

8:15 - 9:00

Keynote Address

Speaker: Charles Wilkinson

9:00 - 10:00

Session 1: Early Water Code History

Moderator: Andy Dunn

Tom Ring

From Time Immemorial to 1917

Abstract:

Water use in Washington did not begin with the water code. Between 1855 when the Stevens treaties were signed and 1917, when the water code was adopted, irrigation and other developments had profoundly altered many river systems in Washington. By 1917, the Yakima River basin had already been fully appropriated for the second time (actually the third time if you count use of the water resources by native peoples). As was the case in much of central Washington, diversions for irrigation had seasonally dewatered streams and decimated aquatic resources long before the legislature acted to formalize prior appropriation, with much of this early use occurring before statehood.

The passage of the federal Reclamation Act in 1902 made possible development of more ambitious storage and delivery works than had been possible with private capital and local effort. On May 10th, 1905, the Bureau of Reclamation withdrew from appropriation all unappropriated surface waters in the Yakima Basin prior to building new storage reservoirs and canals to serve large new tracts of land. Pre-1905 water users entered into agreements with Reclamation setting limits on their diversions. This time the basin was fully appropriated by engineering design, with reservoirs built to capture and store most reliable snowmelt runoff, ambitious canal and tunnel systems to carry the newly stored water, and land put into production to fully utilize the available water.

All of these early efforts occurred with disregard for the uses of water that had been ongoing for thousands of years in the region. The hydrograph of a stream is the master variable governing the evolution of aquatic species. Fish and other aquatic organisms filled the niches created by the seasonal patterns of streamflow, and interactions among rivers and floodplains and surface water and groundwater. The salmon followed the receding glaciers, colonizing new habitats, and Indian people followed the salmon and relied on this bounty for some 700 generations. In the three

PROGRAM AND ABSTRACTS

SESSION 1

CONTINUED

generations preceding the water code a combination of dewatered streams, unscreened diversions, and passage barriers at diversion and storage dams depressed or extirpated many native fish populations. It would be another fifty years of continuing degradation before the water code recognized these instream values as beneficial, and the struggle to recover the lost bounty continues today.

Tom McDonald

The Codification of Water Law in Washington

Abstract:

The adoption by the Washington State Legislature of the first comprehensive legislation to manage the waters of the State was in 1917. 1917 Wash. Laws ch. 117 (1917 Act). In passing the 1917 Act, Washington was one of the last states in the western United States to adopt the prior appropriation doctrine as the law of the State. The 1917 Act actually readopted elements of acts passed by the Washington Territorial Legislature and the 1889-1890 and 1891 newly formed Legislature after Washington became a state in 1889. The 1917 Act codified much of the common law, which is why it remains important to understand the common law when interpreting the code. The Act also established a mechanism for codification adjudication of water rights, enforcement and regulation of water rights, and most significantly, a permit system.

At the time of the early legislation, the federal government was also confronting its conflicting role with the states in water allocation specifically with mining and farming. The federal position and U.S. Supreme Court decisions defined the states control over water, while reserving the necessary water for its purposes and the water that is necessary to fulfill the Native American's reserved rights to water.

I will address the codification of the 1917 Act, the intended purpose of the Act, the continuing judicial interpretations of the Act, and the Legislature's amendments in response to the change in policies, demands, and social needs; and in response to judicial interpretations.

10:00 - 10:20

Networking Break

PROGRAM AND ABSTRACTS

10:20 - 11:30

Session 2: Contemporary Water Code History

Moderator: Dave Christensen

Ken Slattery

Legal Framework for Water Management and Instream Flows after the Water Resources Act of 1971

Abstract:

Passage of the Water Resources Act was a watershed moment in Washington State water management but it was by no means "the end of history" in the evolution of state water law. Statutory additions and amendments and case law developments since 1971 are reviewed that have significantly impacted the legal framework for water management and instream flows.

Hal Beecher

Semantics, Science, and Logic—Instream Flow Protection in the 1970s and 1980s in Washington from a Fish Biologist's Memory

Abstract:

Allocating a finite but variable resource among out-of-stream users (present and future) and fish depended on what was meant by "minimum flow" and what methods and knowledge were available to make fish flow recommendations for instream flows. Fish biologists argued successfully that "minimum flow" was not meant in a strictly hydrological way but that it was the minimum flow that achieved the purpose of the flow, which was, among other things, to protect fish populations. Fish biologists argued that protecting or maintaining fish populations meant protecting high population years, associated with higher flows, to allow recovery from natural low population years.

Empirical evidence from Dave Seiler's salmon population monitoring provided grounded support for the key role of flow in determining salmon population size. Three main instream flow methods were developed in the second half of the 1970s: Tennant, toe-width, and IFIM/PHABSIM in increasing order of specificity for site, species, and life-stage.

Bob Barwin

How Adjudication and Newer Administrative Tools Have Facilitated Water Reallocation, as recollected by one who was there.

Abstract:

The adjudications program in its first 100 years has been able to quiet title to water right claims within perhaps 25 percent of the lakes, rivers, and streams relied on by water users in Washington. Another tool the Legislature provided to Ecology is the 1967 Claims Registration Act, RCW 90.14.

PROGRAM AND ABSTRACTS

SESSION 2

CONTINUED

It helped address ambiguity in pre-code water rights, which impeded allocation and reallocation of water through changes to undocumented and unadjudicated claims to surface water and ground water. By the 1980s, changes to existing water rights became a more common way to obtain water for new uses. This was motivated by recognition of water supply scarcity in many areas east of the Cascades.

The Legislature adopted laws in 1989 and 1991 creating the State Trust Water Right Program, allowing the state to acquire and manage water rights. These two statutes, and subsequent state funding opened the door to many innovative ways to work with water users to reallocate water for flow improvement to benefit fish and wildlife, to improve water use efficiency, and even to facilitate reallocation to new out-of-stream uses.

11:30 - 11:50

State of the AWRA Washington Section and Outstanding Service Award

STATE OF THE AWRA WASHINGTON SECTION

Presented by: Steve Nelson, Board President

2017 OUTSTANDING SERVICE AWARD

Presented by: Stanley Miller and Tom Ring

Each year since 2001, AWRA-WA has recognized a member of the state's water resource community for their outstanding contribution to Washington's water resources. The state section developed this award program to recognize an individual who has shown significant and sustained commitment to the protection and wise management of the state or region's water resources. The Awards Committee accepts nominations for the award from any AWRA-WA member.

The first recipient was Jim Esget of the Bureau of Reclamation for his work in developing agreements among fisheries interests, hydropower producers and irrigators that provide water for all these uses in the Yakima River Basin. Since this first award, over a dozen water resources professionals and several organizations have been recognized. In addition to a commemorative plaque for the recipient, AWRA-WA provides a donation of \$500 to a non-profit group selected by the recipient to promote work on water resources locally, nationally, or around the world.

PROGRAM AND ABSTRACTS

2017 OUTSTANDING SERVICE AWARD

Rachael Paschal Osborn receives this year's AWRA-WA Service Award for "Outstanding Contribution to Washington's Water Resources"



The Washington Section of the American Water Resources Association is pleased to present the 2017 award for Outstanding Contribution to Washington's Water Resources to Rachael Paschal Osborn in recognition of her long career promoting and defending the public interest in the state's water resources.

Rachael Osborn is a public interest water lawyer and has provided representation to Indian tribes, environmental organizations, labor unions, and small communities since 1992. It is appropriate to give Rachael the award in this year, the centennial of the Water Code, given her life's work in bringing meaning to the public interest prong of the code.

After receiving her law degree from the University of Washington, Rachael, along with the late Professor Ralph Johnson, co-founded the Center for Environmental Law and Policy (CELP), dedicated to the protection and restoration of free-flowing waters in Washington State. Rachael served as Executive Director of CELP for many years. Rachael and Ralph's mission was to bring the Public Trust Doctrine into the water right permitting process through public interest comment letters and, at times, litigation.

Rachael also co-founded the Washington Water Trust, which, since 1998 has been using voluntary, market-based transactions to improve and protect stream flows and water quality throughout Washington State.

Rachael is a dedicated educator and has taught scores of water law and policy courses over the years — in law schools, conferences, seminars, workshops and classrooms — and has written extensively on water resources and environmental issues. She has taught water law at Gonzaga Law School in Spokane and at the University of Washington.

Rachael's work as an attorney and advocate for the public interest has a long list of accomplishments. To name just a couple, working with her husband John Osborn, Rachael advocated for and eventually won minimum flow over the Spokane Falls during summer low flow during Avista Spokane River Project Relicensing. Working for Tribes and others, Rachael was instrumental in bringing a sound scientific basis to policy on hydraulic continuity in Washington.

We applaud Rachael Osborn for her contributions to the water resources of Washington.

PROGRAM AND ABSTRACTS

11:50 - 12:40

Lunch & Networking

12:40 - 1:50

Session 3: Defining Future Risks

Moderator: Steve Hirschey

Rachael Paschal Osborn

The Public Interest and the Future of Water Law

Abstract:

The public interest has been an element of the Washington Water Code since it was adopted in 1917. But what is the public interest? Statutes and court decisions inform the question, as do agency policies and public opinion. However, many assumptions and values that underlay the genesis of the Water Code no longer hold true. Benchmark rules of water law such as priority of use, anti-speculation, and beneficial use are routinely ignored. Socio-political values have changed dramatically in the last century. As a result of global warming, even the basic physical framework is in flux. Given this evolution, the re-valuation of water as a public resource is a critical concept to inform the next hundred years of water management.

Jenny Adam

Water in 2035: Water Supply and Demand Forecast for the Columbia River Basin

Abstract:

The Columbia River Basin is intensively managed to meet a range of competing demands for water, and is essential for the growth and enhancement of the region. Every five years the Washington State Legislature requires an updated long-term forecast of water supply and water demand. The latest Forecast used integrated biophysical-economic modeling to explore the impact of projected climate change, crop mix changes, and changes in water availability on water supply and demand by 2035 (<http://www.ecy.wa.gov/programs/wr/cwp/2016Forecast.html>).

Warmer temperatures, wetter winters and springs, smaller and earlier snowmelt peaks are projected. While annual water supplies are projected to increase across the Basin, timing will shift earlier: unregulated supply is projected to decrease from June-October, and increase from November-May. Climatic change is projected to lead to a decrease in irrigation water demand, assuming irrigated acreage remains constant. Projected changes in crop mix (e.g. shift towards more water-use efficient crops) would further decrease demand.

PROGRAM AND ABSTRACTS

SESSION 3

CONTINUED

Although these annual supply and demand projections appear encouraging, there are important caveats to consider, including:

- Future producer or agency decisions, such as increases in double-cropping and increased irrigated acreage resulting from planned water storage projects, could lead to increased demand for irrigation water.
- These results reflect median years, while vulnerability to future climatic changes will be most apparent in drought years, generally expected to occur more frequently in the future.
- Frequency and magnitude of curtailments in the spring are projected to increase in some watersheds, likely because the shift in demand is expected to occur faster than the shift in supply.

Future forecasts will build on this work and may look more closely at these issues, as well as improving estimates of municipal and hydropower water needs, and the potential impacts of changes to the Columbia River Treaty with Canada.

Peter Dykstra

Water Availability and Reliability: A Legal Perspective

Abstract:

Finding adequate availability of water throughout Washington for increasing needs of a wide variety of in and out-of-stream uses is increasingly difficult from a range of physical availability challenges including climate change and increasing demands for water.

Determining water availability in Washington is also about whether there is a sufficient legal right to use water for a particular need.

Washington's water law, like other prior appropriation states, was built on a foundation to reliably allocate available water to certain priority uses, especially in times of scarcity, but that legal foundation ignored instream and other ecological uses. There have been some efforts to reform water law to reallocate scarce water resources to more modern views of the state's priority uses. However, those changes in law have not been sufficient to create a water management approach that allows us to sufficiently meet our changing policy goals. Moreover, recent legal decisions interpreting the interplay between the foundational water law and modern improvements to the law have created new complexities for determining whether adequate water is legally available. This presentation will discuss those legal complexities and some efforts to solve them.

1:50 - 2:05

Networking Break

PROGRAM AND ABSTRACTS

2:05 - 3:35

Session 4: Identifying Possible Solutions

Moderator: Tyson Carlson

Lynnette de Silva

Water Conflict Management

Abstract:

Water management is often about managing for competing demands. These demands extend from agriculture to industry, municipalities to ecosystem services, transportation to recreation; and include water for aesthetic value and spiritual practices. Coupled with the fact that 310 rivers are shared by nations, encompassing 40 percent of the world's population and over 47 percent of the land surface, water-related conflicts are expected to rise. For these reasons, water management is regarded as synonymous with conflict management.

Conflict management provides alternative dispute resolution practices and tools that require the participation of stakeholders, and includes creative approaches that extend beyond the court system and can improve relationships. When used appropriately, these tools help to build trust, skills, consensus, and capacity, while balancing our physical, emotional, intellectual, and spiritual needs. As such, effective water conflict management has the potential to foster sustainable and efficient water resources management.

Alan Reichman

Achieving Legal Certainty

Abstract:

Having legal certainty on the validity and extent of water rights can be instrumental to finding solutions to water resources management issues and disputes. The adjudication of water rights in Superior Court is an essential component of the water management system established by enactment of the 1917 Washington Water Code. The Legislature authorized general water rights adjudications in Superior Court as means to determine the validity and extent of water rights that were established prior to the water right permitting system created in the Water Code for surface water, and in the 1945 Groundwater Code for groundwater. The *Acquavella* adjudication of surface water rights in the Yakima River Basin, which is nearing completion, has brought considerable benefits to that basin by providing stability of expectations for the orderly management of water during times of shortage, and facilitating the marketing of water rights and the establishment of water banks.

Other potential approaches to attain legal certainty for water rights in Washington were identified in a December 2003 report entitled "*A Report to the Washington State Legislature from the Water Disputes Task Force.*" This report recommends several methods for resolving water rights disputes, including the creation of a state water court system, streamlining the adjudications process authorized under existing law, and creating a "compact commission" charged with the task of negotiating settlements on claims for federal and tribal reserved water rights.

PROGRAM AND ABSTRACTS

SESSION 4

CONTINUED

J. Ryan Brownlee

Storage

Abstract:

Water supply challenges are typically the result of seasonal timing of supplies relative to demand. Particularly in Eastern Washington basins, runoff quantities are generally snowmelt driven, resulting in streamflow hydrographs that peak during short freshet periods (typically during May or June). This timing contrasts with periods of highest demand, which typically occur during the late summer months when streams approach baseflow conditions.

One classic solution to this supply-and-demand problem is water storage, which allows for retiming of supplies—water captured during times of relative surplus can be released during times of relative deficit. However, various constraints drive the manner in which storage solutions can be implemented (e.g., water availability, regulatory, environmental, political, geographic, topographic, and geologic).

This presentation will discuss storage solutions ranging in size from small (<10-acre feet) to large (over 10,000-acre feet) to explore the impact of various constraints on reservoir implementation. Current water storage projects being developed in Eastern Washington will be reviewed, including mitigation reservoirs, aquifer storage and recovery projects, small on-farm facilities, and storage retrofit projects with automation.

Lisa Pelly

The Methow Valley Irrigation District Project

Abstract:

The MVID canal system was constructed in 1905 as an open earthen canal. The MVID East Canal diverts water from the Methow River at river mile 44.8 and serves users east of the Methow River. The MVID West Canal diverted water from the Twisp River at river mile 4.3 and served users in the Lower Twisp River and west of the Methow River. The original water right claims held diversion rates of over 650 cfs but due to litigation and other water right changes had been reduced by 2002 to a diversion rate of 24 cfs (5829 acre feet annually) from the Methow River and 29 cfs (7367 acre feet annually) from the Twisp River. With the reduced diversion rates, high seepage losses, and aging infrastructure, the MVID irrigation system was unable to deliver water to all shareholders. During the last decade, various agreements and

PROGRAM AND ABSTRACTS

SESSION 4

CONTINUED

system modifications were made to reduce diversion water and increase efficiency, but none were successful, leading to additional years of litigation.

In 2013, Department of Ecology's Columbia River Program, Bureau of Reclamation, MVID, and Trout Unlimited starting looking at permanent solutions for MVID and its shareholders. The project goals were to upgrade the district's infrastructure, increase water use efficiency for all of its members, increase instream flows in the Methow and Twisp rivers, and provide water for the City of Twisp. Enhanced flows will benefit ESA listed steelhead, Chinook salmon, bull trout, cutthroat trout, and a variety of other fish and wildlife species.

3:35 - 3:50

Break & Networking

3:50 - 5:00

Session 5: Future Direction and Legislative Change

Moderator: Adam Gravley

Panel:

- **Jaime Pinkman**, Columbia River Intertribal Fish Commission
- **Scott Revell**, Roza Irrigation District
- **Derek Stanford**, Representative for the 1st Legislative District
- **Charles Wilkinson**, University of Colorado School of Law

5:00 - 7:00

Closing Remarks & Reception

SESSION SPEAKER AND MODERATOR BIOGRAPHIES



Jennifer Adam is Associate Professor of Civil Engineering at Washington State University and Associate Director of the State of Washington Water Research Center. She received her graduate degrees at the University of Washington and her undergraduate degree at the University of Colorado Boulder, all in Civil and Environmental Engineering. Dr. Adam is interested in the connections between climate, hydrology, land use, and ecological (natural and agricultural) processes. This includes how climate variations and human influences interact to alter land surface hydrologic processes at watershed, regional, and global scales. Her research group explores these interactions with process-based models in integrated modeling frameworks. She is lead investigator on several large projects, including the Washington State Water Supply and Demand Forecast and an NSF project investigating the food-energy-water nexus in the Columbia River basin.

Robert Barwin, PE, B.S. Civil Engineering, Oregon State University 1977. Bob has held a variety of engineering, program development, and management positions during his 38-year career with Washington's Department of Ecology and Oregon's Department of Water Resources. A career focus was on the protection of instream flows and water quality protection and restoration. He is an avid skier and backpacker. He and his wife enjoy the intermountain west generally and, in particular, Yellowstone National Park. Bob grew up in Tahoe City, CA and has lived in Yakima, WA since May, 1979.



Hal Beecher was born in Budapest to U.S. Navy intelligence officer mother and U.S. Vice Consul father, but was raised in Bellevue. He graduated from Middlebury College (A.B. Biology), University of West Florida (M.S. Biology and Marine Science), and Florida State University (Ph.D. Biological Science [fish ecology in Gulf coast rivers]). After working for The Nature Conservancy in Washington and Oregon, Hal began working for Department of Fish and Wildlife's (WDFW) predecessor agency in 1979. He was first hired to evaluate the relatively new Instream Flow Incremental Methodology (IFIM and PHABSIM), working to protect instream flows. As Washington representative to the Instream Flow Council and IFC president 2006-8, he was a co-author of IFC's books *Instream Flows for Riverine Resource Stewardship* (2002, revised 2004) and *Integrated Approaches to Riverine Resource Stewardship – Case Studies, Science, Law, People, and Policy* (2008). He retired in 2016.

SESSION SPEAKER AND MODERATOR BIOGRAPHIES

Ryan Brownlee, PE, is an Associate Water Resources Engineer with Aspect Consulting. He has experience in multiple aspects of water resources engineering including planning, design, and construction administration. Mr. Brownlee has 17 years of experience completing domestic water, storm water, flood control, irrigation water, wastewater, water supply, and water storage projects of varying size throughout Washington State. From Aspect's Eastern Washington region, Mr. Brownlee has been involved with the majority of Aspect's innovative water resources infrastructure projects over the past six years. His clients include natural resources departments, public utilities, irrigators, agricultural growers, legal firms, municipalities, and private developers. Mr. Brownlee graduated Cum Laude from Gonzaga University and received a B.S. in Civil Engineering with a Minor in Business Administration.



Tyson D. Carlson, LWG, CWRE is an Associate Hydrogeologist with Aspect Consulting with over 17 years experience specializing in water resource development and water rights serving private and public sector clients. Water rights experience includes municipal, agriculture, fish propagation, commercial/industrial, and using the Trust Program for instream flow, habitat, and mitigation for water banking. Tyson's strong background in analytical and numerical groundwater modeling is often used in developing site-specific conceptual models describing groundwater-surface water interaction, saline intrusion, well hydraulics, and aquifer sustainability. Tyson also uses these skills in large-scale hydrogeologic characterization – such as regional tunnel alignments, contaminant fate and transport modeling, and

construction dewatering design. Tyson has a B.S. in Soil, Water, and Environmental Science and a M.S. in Hydrology from The University of Arizona.

John Chandler is the technical lead of water resources at Puget Sound Energy. He is the water manager of the Baker Project, a two reservoir 200 MW facility in northwest Washington and supports the project's operations, compliance, and dam safety. John can sympathize with the complexity of water resources objectives from managing about two million acre feet of water per year under a federal license involving 24 total stakeholders. He obtained an M.S. focused on water resources and environmental engineering in 2008 from the University of Maine at Orono and got his P.E. in Washington State in 2012.



SESSION SPEAKER AND MODERATOR BIOGRAPHIES



Dave Christensen has been the Program Development Section Manager for Washington Department of Ecology Water Resources Program for the last four years. He leads a team that develops state rules and policies, and works with the Legislature on changes to water resource laws. Overall, he has worked in environmental health and natural resource protection programs for state and local government for more than twenty years. Dave holds a B.S. degree from the University of Washington in Fisheries Biology and an M.S. in Limnology and Oceanography from the University of Wisconsin.

Lynette de Silva directs the Program in Water Conflict Management and Transformation at Oregon State University (OSU), and teaches courses in water

resources management. As a consultant to UNESCO, she's provided water dispute resolution training to senior water professionals in Ethiopia. Over the past 20 years, her work emphasizes water resources and land management practices, including directing OSU's Natural Resources Leadership Academy; working on a nonstructural approach to flood mitigation in the Red River Basin, in N.D.; and administering corrective action through the Resource Conservation Recovery Act, to identify and oversee remediation of soil and groundwater contamination, in Indiana. She holds a B.S. in Geology from Brooklyn College of CUNY; and a MSc. in Geology, with emphasis in hydrogeology from Indiana University - Purdue University, in Indianapolis.



Andy Dunn was born and raised in Washington State. After obtaining a B.S. in Geology from Western Washington University and a M.S. in Hydrogeology from New Mexico Tech, he started working for the Department of Ecology Water Resources Program. He learned water law on the job under the expert tutelage of Buck Smith (last years' Outstanding Service Award recipient) and others. After more than eight years at Ecology performing the roles of hydrogeologist/permit writer and section manager, Andy decided it was time for a change and joined RH2 Engineering, partially due to the fact that the office is only two miles from his home. Andy is married and has three boys, ages 13, 10, and 8, and a new puppy, all of which keep him very busy.



SESSION SPEAKER AND MODERATOR BIOGRAPHIES



Peter Dykstra is a Partner at Plauché and Carr LLP where he counsels public and private clients on water rights, land conservation transactions and strategies, ecosystem service markets, and complex natural resource projects. As part of his diverse water and natural resources practice, Peter assists government agencies, nonprofits, and business entities with strategic planning, project planning, real estate acquisitions, legislation development and advocacy, and project funding and financing strategies. Peter currently serves as legal counsel to Trout Unlimited’s Washington Water Project, for instream-flow focused water acquisition and creative infrastructure improvement projects. Peter also serves as Special Deputy Prosecuting Attorney for Kittitas County providing legal and strategic advice to the County’s successful efforts to develop first-of-its-kind local government water banking program and to acquire senior water rights for mitigation.

Adam Gravley practices water law and policy at Van Ness Feldman in Seattle. Adam represents clients in administrative, litigation, legislative, and private transactional matters involving water rights and resources, real estate and water property interests, public utilities, municipal corporations, industrial and energy projects, and resource protection. He is a past president of the American Water Resources Association (Washington Chapter) and current co-chair of the Board of Advisors to Dividing The Waters, a non-profit program of the National Judicial College. He has degrees from Kalamazoo College (BA), Brown University (MA), and Georgetown University (JD).



Stephen Hirschey works with King County’s Department of Natural Resources and Parks, Wastewater Treatment Division as a regional water policy analyst working on utility wastewater and water service issues. His career includes 20 years with the State of Washington, Department of Ecology, Water Resources Program, working on instream flow assessments and rule development, water right administration, and state water rules and regulations. Steve received a B.S. in Natural Sciences from St. John’s University, and his M.S. in Environmental Studies from the Evergreen State College. Steve is married and the father of two children. In his leisure time, Steve enjoys snow skiing, hiking, and gardening.

SESSION SPEAKER AND MODERATOR BIOGRAPHIES

Tom McDonald – Tom is an attorney specializing in water resource management, water rights and water quality, and the Endangered Species Act. He counts among his statewide clients: private parties, municipalities, private and public water systems, farming and other agricultural operations, school districts, and utilities. He earned a Bachelor of Science in Agricultural Economics from Colorado State University and earned his Juris Doctor from Seattle University. He has worked as an assistant attorney general for both the Colorado and Washington State Attorney General’s Offices. He served as a member of the Pollution Control and Shorelines Hearings Boards from 2011 through 2014. Tom has been in private practice with Perkins Coie and Cascadia Law Group. Tom literally help write the book on Washington Water Law, titled “*Water Law Treatise, An Introduction to Washington Water Law.*” also simply known as the blue book.



Stan Miller is semi-retired, and currently doing water resources consulting as Inland Northwest Water Resources. Prior to venturing into retirement, Stan held the position of Program Manager for Spokane County’s Water Resources Section for over 20 years. The section’s prime focus is the regional aquifer protection program, working towards integrating the groundwater protection efforts of all municipalities and water purveyors using the Spokane Valley-Rathdrum Prairie Aquifer. Stan has developed technical information and conducted local studies on the potential impacts of storm water infiltration on ground water quality and the interaction of the Spokane River and the Spokane Valley Aquifer. Stan is a long-time member of the AWRA Board and a past president of the Chapter. Away from work, Stan enjoys canoeing, backpacking, running, and working on the restoration of a turn-of-the-century home.

Steve Nelson is a licensed hydrogeologist and engineering geologist with 25 years of experience involving water resource assessment, development, management, remediation, and protection. Steve’s project experience includes characterization of groundwater systems for groundwater supply, water reuse, water rights evaluation, aquifer testing, and the modeling of groundwater flow, contaminant fate, and transport. Steve conducts geologic investigations to evaluate foundations for water infrastructure, geologic hazards, and slope stability; and designs infiltration and construction dewatering systems. Depending on the season, find Steve trail running, skiing, climbing in the Cascades or Sierra, and/or fly fishing.



SESSION SPEAKER AND MODERATOR BIOGRAPHIES

Rachael Paschal Osborn is a semi-retired public interest water lawyer on Vashon Island. She co-founded the Center for Environmental Law & Policy and Washington Water Trust, and is the director of the Columbia Institute for Water Policy. She taught water law at Gonzaga and University of Washington Law Schools, 1995-2016, and has authored several articles, including “Hydraulic Continuity in Washington Water Law” (Idaho L. Rev. 2010), “Climate Change and the Columbia River Treaty” (UW J. of Env’l Law & Pol. 2012), “Native American Winters Doctrine and Stevens Treaty Water Rights: Recognition, Quantification and Management” (American Indian L. J. 2013), and a chapter on “Instream Flows” in a new book, “*The Spokane River*” (Paul Lindholdt, ed., UW Press, forthcoming 2018).



Lisa Pelly is active in statewide efforts to enhance and protect fish and wildlife habitat and water resources on private and public lands, and serves as Director of Trout Unlimited’s Washington Water Project. Lisa has worked to design and implement policies and projects to enhance instream flow in Washington’s rivers and streams and with partners on forward thinking water management strategies that benefit all water users in Washington State. She is a board member of the Washington Wildlife and Recreation Coalition, Yakima Basin Implementation Team, Icicle Creek Steering Committee, and a representative to the Columbia River Policy Advisory Group. She is one of the founders of the Northwest Women Flyfishers and also

previously served 11 years as a Governor appointed member of Washington’s Fish and Wildlife Commission. Lisa attended the University of California - San Diego and the University of Washington.

Jaime A. Pinkham is a citizen of the Nez Perce Tribe and Executive Director of the Columbia River Inter-Tribal Fish Commission, supporting the Yakama, Warm Springs, Umatilla and Nez Perce Tribes. Earlier he was Vice President of the Bush Foundation designing and leading a Native Nations program for tribes across ND, SD, and MN redesigned their governing systems. He has worked for the Nez Perce Tribe in a variety of positions including elected twice as Treasurer to the Nez Perce Tribal Executive Committee, and leading the Tribe’s natural resource programs. He has a forestry degree from Oregon State University and a graduate of the Washington State Agriculture and Forestry Leadership Foundation’s leadership program. He currently serves on The Wilderness Society’s Governing Council, American Rivers Board of Directors, and the Board of Trustees at Northland College, a private liberal arts college with a focus on the environment and sustainability.



SESSION SPEAKER AND MODERATOR BIOGRAPHIES



Alan M. Reichman is Senior Counsel in the Ecology Division of the Washington State Attorney General's Office. He serves as Section Manager of the Water Resources Section of the Ecology Division, and is lead counsel to the Department of Ecology's Water Resources Program. He represents the Department of Ecology in water resources cases before the Pollution Control Hearings Board and in state and federal courts, and was the lead attorney for the State in *Lummi Indian Nation v. State of Washington*, the case involving the constitutional challenge to the Municipal Water Law. He is a graduate of Oberlin College, and received his J.D. magna cum laude from the University of Puget Sound (now Seattle University) School of Law.

Scott Revell has been the manager of the 72,000 acre Roza Irrigation District in the Yakima valley since 2013. Prior to that he was Planning Manager for the Kennewick Irrigation District for seven years. He worked in city and county land use planning from 1991 until 2007, and served as the Planning Director for Hood River County and Walla Walla County. He holds Master's and Bachelor's degrees from Washington State University in Public Administration and History, respectively.



Tom Ring— Tom is a hydrogeologist with the Water Resources Program of the Yakama Nation. He has held this position since 1990 and, in that role, has worked on a variety of projects involving groundwater and surface water quantity and quality, water rights, irrigation and fisheries issues and planning for future water needs. Previously he worked for the Water



Resources Program at the Washington Department of Ecology. Tom has Bachelor and Master of Science degrees in geology from Central Washington University and Northern Arizona University, respectively. He has taught geology and hydrogeology classes at Central Washington University and is a licensed geologist and hydrogeologist in Washington State. When not working, he enjoys hiking, climbing, and skiing in the mountains of the west.

SESSION SPEAKER AND MODERATOR BIOGRAPHIES

Ken Slattery, BA Geography Western Washington State College, 1974. Ken held various staff and management positions with the Water Resources Program of the Washington Department of Ecology from 1975 until his retirement in 2011. During the last six years of his tenure he served as the Program Manager of the Water Resources Program where he led 160 staff in the program. He spent much of his career working on instream flow protection and restoration and was extensively involved in legislation affecting the program. Since he retired he has engaged in part time consulting, is a member of the board of directors of Washington Water Trust, and spends his free time golfing, sailing, hiking and gardening. He made a 6,000 mile sailboat passage from Puget Sound to Mexico and French Polynesia in 2015-16.



State Representative Derek Stanford earned a PhD in Statistics at the University of Washington, and he currently runs a small business specializing in data science and statistical consulting. Previously, he has served as Director of Analytics at companies specializing in fraud detection and customer insights. Rep. Stanford serves on the House Appropriations Committee, the House Business and Financial Services Committee, the House Rules Committee, and the House Agriculture and Natural Resources Committee. He is also Chair of the Washington State Caseload Forecast Council and Chair of the Joint Legislative Audit and Review Committee.

Charles Wilkinson, see page 8.

STUDENT FELLOWSHIP PROGRAM

Nominations and Applications Sought

The Washington State Section of AWRA is seeking nominations for its 2017/2018 Student Fellowship Awards. Two fellowships will be awarded for the 2017/2018 academic year to full-time graduate students completing advanced degrees in an interdisciplinary water resources subject. One award will be to a member of a Washington Section affiliated Student Chapter. The other award will be to a student enrolled in a graduate program at a college or university in Washington State.

In addition to \$2,000 in cash, each award includes a one-year membership in both the State 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. The recipients will each prepare an article describing their research or other relevant topic for the Section newsletter within one year of the award.

For more information on the fellowship program and how to apply see page 30.

AWRA-WA PAST PRESIDENTS

2016	Allison MacEwan	1998	Adam Gravley
2015	Tyler Jantzen	1997	Rod Sakrison
2014	Megan Kogut	1996	Rod Sakrison
2013	Dustin Atchison	1995	Jackie Hightower
2012	Scott Kindred	1994	Paul Korsmo
2011	Beth Peterson	1993	Peter Willing
2010	Felix Kristanovich	1992	Stan Miller
2009	Jamie Morin	1991	Rachel Friedman-Thomas
2008	Jacque Klug	1990	Joan Lee
2007	Cleve Steward	1989	Bill Eckel
2006	Mona Thomson	1988	David Brown
2005	Tom Martin	1987	Alan Ward
2004	Joe Mentor Jr.	1986	Dale Anderson
2003	Anne Savery	1984	George Wannamaker
2002	Stephen Hirschey	1982	Nancy Nelson
2001	Fran Solomon	1981	Chuck Mosher
2000	Pete Sturtevant	1980	Kris Kaufman
1999	Teresa Platin	1979	Gary Minton



Cedar River Pipeline at Landsburg, man posing in pipe, 1929

Courtesy of the Seattle Municipal Archives (Item No.3757, Record Series 2613-07)

AWRA-WA PAST CONFERENCES

- 2016 Rural Domestic and Municipal Water Supply
- 2015 Water Management Strategies in the Face of Climate Change
- 2014 Water Resources Infrastructure: Emerging Frameworks to Meet Multiple Objectives
- 2013 Future Directions in Water Resource Management
- 2012 The Columbia River, Basin, and Treaty
- 2011 A Perspective on Water Quality Issues Across Washington State
- 2010 Water Rights: Investing in 21st Century Water Management
- 2009 AWRA National Conference, hosted by WA-AWRA
- 2008 The Future of Water Storage in Washington State
- 2007 Transboundary Water Resources of Washington State and British Columbia
- 2006 Water Resource Disasters in Washington: Risk and Recovery
- 2005 AWRA National Conference, hosted by WA-AWRA
- 2004 The Impact of Climate Change on Pacific Northwest Water Resources
- 2003 Water's Woven Web: Land Use Planning and Water Resource Management in Washington
- 2002 Beyond Watershed Planning
- 2001 The Impact of Drought on Water Resources and Energy Management in the Northwest
- 2000 Water Marketing in Washington: Negotiating for a Future
- 1999 Impressions of 1999 State Water Legislation: ESA Update and Pending 4(d) Rules
- 1998 ESA, Economy, Salmon and Agriculture...Where is the Water?
- 1997 Balancing Instream Needs with Out-of-Stream Demands
- 1996 The Water 'Crisis'- Myth, Reality, and Opportunities
- 1995 Water Quality/Water Quantity: An Artificial Distinction
- 1994 Fluvial Geomorphology: What We've learned in 20 Years, and where do we go from here? Interactions: River Dynamics, Land Forms and Land Use.

AWRA-WA PAST CONFERENCES

- 1993 Good Science, Good Decisions: The Role of Technical Analysis in Water Policy
- 1992 Reconciling Water and Growth
- 1991 State Water Policy and Growth Management
- 1990 Construction and Streams, Lakes and Wetlands: Closing the Gap between Planning and Doing
- 1989 New Developments in Floodplain Management
- 1988 Hydrology and Erosion Aspects of Timberland-Urban Conversions
- 1987 Attaining Compliance: Realities of Water Quality Regulation
- 1986 Off-site Impacts of Eroding Soils
- 1984 Groundwater Protection in Washington State, Preventing Aquifer Contamination and Depletion
- 1983 Small Streams and Lakes in the Urbanizing Environment—Will They Survive?
Washington and Idaho Lakes and Their Future
- 1981 Water Resources Implications for Small Hydro Power Generation



A.J. Dhaenens and son irrigating bean patch, 1900/1920

Courtesy of the Northwest Room, Spokane Public Library

STUDENT FELLOWSHIP PROGRAM

(CONTINUED FROM PAGE 26)

How to Apply

Any academic department with students enrolled in water resources programs may submit nominations for the award in a brief letter of nomination by a faculty representative familiar with the student's work. In addition, qualified students should prepare and submit an application packet, limited to five pages (excluding the faculty nomination), which includes the following:

1. The completed Application Form.
2. Statement of goals and objectives for graduate work.
- 3a. Detailed description of the student's research interest; or
- 3b. If pursuing a non-thesis degree, a one-page essay on how the course of study will allow the student to accomplish the goals and objectives identified in item 2.

The letter of nomination may be included in the application packet, or mailed separately by the faculty representative. Application packets and nomination letters are due by **February 15, 2018**, to:

**AWRA-WA Section
PO Box 2102
Seattle, WA 98111-2102.**

Prior recipients of the fellowship award may reapply if their research is different from or an expansion on the work presented earlier. Applicants may receive no more than two awards during their academic career.

How Fellowships are Awarded

The Fellowship Committee will evaluate all applications received based on the following:

- The interdisciplinary nature of the course of study and research.
- The effectiveness of the response communicating research objectives.
- The potential for applying the work to the current needs in water resource management.
- Overall impression of the applicant's qualifications and presentation.

The Fellowship Committee will recommend recipients to the Washington Section Board of Directors. The winners will be notified as soon as the Board approves the awards and will receive special recognition at a State Section event.

Additional Information

The application and additional information are available on the AWRA-WA website at <http://www.waawra.org>. Further questions can be answered by Stan Miller at (509) 953-7887 or samillerh2o@comcast.net.

NOTES

2017 AWRA-WA Annual State Conference



AWRA-WA Section
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www.waawra.org