

Register on-line: <http://www.agwt.org/>

Let's make better use of our aquifers

MANAGED AQUIFER RECHARGE

How the Northwest can maximize water use by adopting Aquifer Recharge Strategies



Presented by

American Ground Water Trust – June 7th, Olympia, WA

Red Lion Hotel Olympia, 2300 Evergreen Park Drive SW, Olympia, WA 98502

(Reduced room rate available for Conference attendees)

What the program is all about

This Water Management Strategies/ Aquifer Storage program will bring together engineers, scientists, planners, water-resource managers, agency professionals, attorneys, concerned citizens, etc. to share up-to-date information regarding the challenges, feasibility, potential, regulatory concerns and the economic & environmental benefits of aquifer management strategies involving artificial recharge, aquifer storage and ground water management.

The program will provide an opportunity for all interested parties to hear about the latest progress and development in ASR from scientific, engineering, management and regulatory perspectives. The future of ASR technology applications in northwest states and provinces has huge significance for resource management, development planning, and ecological restoration. There are important, financial, institutional, legal and water quality issues that have to be resolved. The program will include presentations on projects where aquifer recharge is already a significant part of the portfolio of water management tools.

Program - Tuesday, June 7th

7:15 Registration open. Exhibitor set-up

Presentations, 8:15 – 4:45, will include:

AQUIFER RECHARGE: NATIONAL REVIEW OF PROJECTS, PROGRESS AND PROSPECTS (Excerpts and comment from a recently released Aquifer Recharge DVD)

Andrew Stone, American Ground Water Trust, Concord NH

- "...we are sure going to run out of cheap water..."
- "...it makes so much sense to put water under the ground..."
- "...we are talking about how problems have been solved..."
- "...ASR can save tremendous sums of money..."
- "...it is such a versatile technology..."

THE ROLE OF THE AKART ANALYSIS IN ASR PERMITTING IN WASHINGTON STATE

Phillip Brown, Hydrogeologist, Golder Associates Inc., Lake Oswego, OR

MANAGING ASR SYSTEMS THROUGH NEW TECHNOLOGIES

Kent Madison, President, 3R Valve, Echo, OR

- What!..... you can have an ASR system operate with variable flow rates without air entrainment?
- Let's put that potable HVAC water back into the aquifer and keep it out of our sewers.
- Cool, you telling me I can generate electricity while doing ASR?
- Are you telling me that I can inject and recover in two different aquifers in the same well?

WASHINGTON STATE ASR POLICY GUIDANCE DOCUMENT

Dave Nazy, Hydrogeologist, Water Resources Policy Section, WA Ecology

UPDATE ON OREGON RECHARGE PROGRAMS AND REGULATIONS

Jennifer Woody, Oregon WRD, Salem, OR

AQUIFER RECHARGE & THERMAL STORAGE RECOVERY

Kevin Lindsey, Senior Hydrogeologist, GSI Water Solutions, Kennewick, WA

- Earth as an insulator, subsurface storage of cold water for future summer use
- Gives an energy savings by reducing summer energy use to cool water
- Reduces summer surface water demand when fish are stressed
- Comes together in an aquifer with amazing hydraulic properties, its isolated, its porous, and no one else is pumping it

CITY OF PENDLETON ASR PROJECT – STATUS UPDATE

Bob Patterson, Director of Public Works, City of Pendleton, Pendleton, OR

- What's happened in last 8-years!
Prior: 62% groundwater / 38 % surface water
3.4-foot annual decline in groundwater levels
Since: 21% groundwater / 79% surface water
0.8-foot annual average decline in groundwater levels
- What's in store this year!
Doubling the size of the ASR program
Producing power - over 1,000,000 kWhr in the near future!

WATER RIGHT PERMITTING STRATEGY FOR ASR

Tim Flynn, President and Principal Hydrogeologist, Aspect Consulting, Seattle, WA

- Statutory Changes to Washington Water Law
- Expedited process for ASR permits
- City of White Salmon case study

GROUNDWATER RECHARGE AND AQUIFER MANAGEMENT IN THE NORTHWEST

Jack Wittman, Groundwater Scientist, Layne Christensen, Bloomington, Indiana

- Design & construction considerations for recharge wells
- Diagnosing and solving declines in yield & recharge rates
- National case studies of aquifer recharge solutions

UMATILLA BASIN RECHARGE

Jeff Barry, Senior Hydrogeologist, GSI Water Solutions, Inc., Portland, OR

- Problem:
 - 120000 af of curtailed water rights -500 ft aquifer water level decline
 - ESA and tribal water needs -no access to Columbia River in the summer
- Solutions:
 - regional aquifer recharge in winter from Columbia, recover in summer for irrigation, environmental benefits
 - \$2.5m grant from OWRD for first phase, with local partners
 - first phase (10,000af) permitted, constructed and operated in 2011
 - expand up to 100,000 af in future
 - project demonstrates this can be done here and elsewhere

NORTHWEST AQUIFER MANAGEMENT (ASR) - REGISTRATION FORM (mail or fax)
 Olympia, Washington, June 7th 2011

On-line registration available at: <http://www.agwt.org/workshops.htm>

Sponsorship opportunities listed on the Trust's website

(Registration includes lunch, breaks, and reception)

Registration in advance of the event

General Registration	<input type="checkbox"/>	\$220
Government Employees (Federal, state, county, municipal)	<input type="checkbox"/>	\$190
Employees of AGWT Corporate Members (\$250+Level)	<input type="checkbox"/>	\$180
Full-Time Students(ID required at registration)	<input type="checkbox"/>	\$75
Exhibit Table (6 foot table)(Personal registration <u>not</u> included)	<input type="checkbox"/>	\$200
CD of presentations (in PDF format - mailed post- workshop)	<input type="checkbox"/>	\$ 20
		Total

[Walk-in registration 30% more than pre-registration]

Sponsorship opportunities listed on the Trust's website

PAYMENT: Check *[Make checks payable to: American Ground Water Trust]*
 AMEX Visa MasterCard PO# _____

Credit Card No. _____ Expiration ____

Cardholder Name _____

Registration Name _____

Title/Position _____

Company/ Organization _____

Address _____

City _____ State _____ Zip _____

Phone _____ Fax _____ E-Mail _____

Register by:

MAIL - American Ground Water Trust, 16 Centre Street, Concord, NH 03301

□ FAX - (603) 228-6557 TEL - (603) 228-5444 □ WEB – www.agwt.org

American Ground Water Trust (Non-profit education organization)

Ground Water Information, Awareness & Education Since 1986

This is what we do:

- Promote efficient and effective ground water management
- Communicate the environmental and economic value of ground water
- Showcase ground water science and technology solutions
- Increase citizen, community and decision-maker awareness
- Facilitate stakeholder participation in water resource decisions

◆ **The American ground Water Trust - Aquifer Storage Recovery and Related Programs** ◆

Since 1999, the American Ground Water Trust has convened 24 conference programs that have featured aquifer storage. The Trust's mission-focus on resource sustainability and effective ground water management is the rationale for our promotion of information exchange programs on ground water management issues and our showcasing of aquifer storage technologies.

There is a strong ongoing need to need to **educate the public, convince regulatory authorities and capture the imagination of water managers** about the economic and environmental benefits of creative use of sub-surface water resources. Ongoing drought conditions in many parts of the US and predictions of the hydrologic implications of climate change more than justify increased attention to the benefits of managed aquifer recharge.