

In Print & Online

Managing Ecosystems During Climate Change

Preliminary Review of Adaptation Options for Climate-Sensitive Ecosystems and Resources
U.S. EPA

This report aims to help mitigate the impacts of climate change on estuaries, forests, wetlands, and other sensitive ecosystems by identifying strategies to protect the environment as these changes occur.

Scientists reviewed established management goals for national parks, forests, wildlife refuges, wild and scenic rivers, estuaries, and marine protected areas to understand what strategies will increase the ability of each ecosystem to absorb change or disturbance before it shifts to a different ecosystem.

The report finds that many existing best management practices to reduce traditional stressors such as pollution or habitat destruction also can be applied to reduce the impacts of climate change.

The 910-page, peer-reviewed report is available at cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=180143.

Controlling Contaminants in Drinking Water

Drinking Water Treatability Database
U.S. EPA

EPA's Drinking Water Treatability Database (TDB) presents referenced information from thousands of sources on controlling drinking water contaminants. It can be searched by type of contaminant or treatment process. Literature included in the database covers bench-, pilot-, and full-scale studies of surface waters, groundwaters, and laboratory waters. New contaminants and updates on existing contaminants will be added continually; ultimately, it will include over 250 regulated and unregulated contaminants and 30 treatment processes.

The database is available at iaspub.epa.gov/tdb/pages/general/home.do.

Trees Offer Clues to Subsurface Contamination

User's Guide to the Collection and Analysis of Tree Cores to Assess the Distribution of Subsurface Volatile Organic Compounds

U.S. Geological Survey

Analysis of the volatile organic compound (VOC) content of tree cores

is an inexpensive, rapid, and simple approach to examining the distribution of subsurface VOC contaminants, according to this report. The method has been shown to detect several volatile petroleum hydrocarbons and chlorinated aliphatic compounds associated with

continued on next page

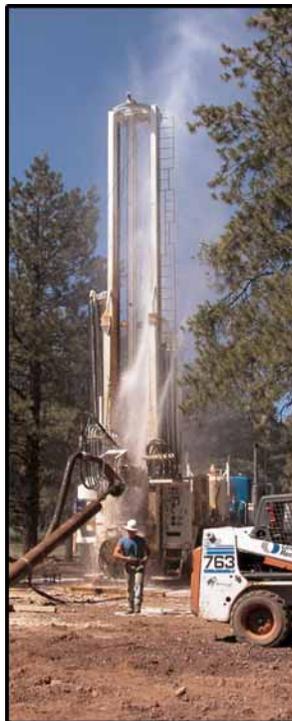


Photo Courtesy of Phil Paski, HydroSystems, Inc.

GEOPHYSICAL FIELD SURVEYS



**BASIN MAPPING,
FRACTURED BEDROCK,
AND RECHARGE PROJECTS**

Resistivity - Gravity - CSAMT - TDEM - MT - Magnetics

**Zonge Engineering &
Research Organization, Inc.**

"CELEBRATING 34 YEARS IN THE BUSINESS
OF SITING DRILLHOLES!"

WWW.ZONGE.COM

PH: (520)-327-5501

US OFFICES:
TUCSON, AZ - SPARKS, NV
DENVER, CO - FAIRBANKS, AK

INTN'L OFFICES:
ANTOFAGASTA, CHILE
ADELAIDE, AUSTRALIA



Save the date!

Jointly hosted by:

Arizona Hydrological Society
American Institute of Hydrology

2009 Annual Water Symposium

MANAGING HYDROLOGIC EXTREMES

August 30-September 2, 2009
Westin Kierland Resort & Spa
Scottsdale, Arizona
www.hydrosymposium.org

Symposium sponsored by:



In Print & Online (continued)

vapor intrusion and groundwater contamination. Three-inch-long tree cores are analyzed by headspace analysis gas chromatography. Because the roots are exposed to VOC contamination in the unsaturated zone or shallow groundwater, VOC concentrations in the tree cores indicate the presence of subsurface VOC contamination and can be used to map it.

The 72-page report is available at pubs.usgs.gov/sir/2008/5088/.

Understanding Climate Change Impacts on Border Water

Water and Border Area Climate Change

California Department of Water Resources

Prepared for the XXVI Border Governors Conference, this report provides an introduction to climate change in the U.S.-Mexico border region from the water sector perspective. Using numerous charts, maps, and other graphics, the report focuses on likely impacts of

climate change on the region's water resources and identifies areas where more research is needed. It concludes with recommendations for climate adaptation strategies for the water sector, with consideration of the challenges of working across an international border.

The 68-page report is available at www.water.ca.gov/news/newsreleases/2008/081508bgcreport.pdf.

Practical Guide to Water Resources

Watersheds, Groundwater and Drinking Water

Agriculture and Natural Resources Division, University of California

This book aims to help resource managers, planners, and other decision makers better understand and assess water supplies and define and manage protection areas for water sources.

The first section covers fundamentals such as watershed hydrology,

groundwater hydrology, water quality, and water contamination. Part 2 describes tools and background information that can help assess and protect individual water sources, such as sampling and monitoring, delineating watersheds and groundwater recharge areas, and determining possible contaminating activities.

Although written with the water needs of Californians in mind, much of the basic information is applicable to other western states.

The 274-page book is available for \$40 at anrcatalog.ucdavis.edu/Items/3497.aspx.

Water-Sector Corruption Is Cause for Concern

Global Corruption Report 2008

Transparency International

This report sets forth the argument that corruption is a cause and catalyst for the current global water crisis, in which more than one billion people have inadequate access to safe drinking water. Furthermore, it argues that the crisis will likely be exacerbated by climate change.

The report documents how corruption affects all aspects of the water sector, from water resources management to drinking water services, irrigation, and hydropower, with case studies from around the world and suggestions for reform. In the Southwest, San Diego was used as an example of corruption for political power, as "an audit in 2006 found that households were improperly overcharged on their monthly sewage bills, with the excess being unlawfully used to subsidise the sewage costs of large industrial users."

The report details corruption-related developments in 35 countries and presents summaries of corruption-related research, highlighting methodologies and new findings that may improve understanding of the dynamics of corruption and assist in devising more effective anti-corruption strategies.



Groundwater & Environmental Forensics

Isotope Analysis

D/H ¹³C/¹²C ¹⁵N/¹⁴N ¹⁸O/¹⁶O ³⁴S/³²S

¹³C/¹²C of Chlorinated Solvents in Groundwater and Soils

¹⁵N/¹⁴N of NO₃, NH₃; D/H + ¹⁸O/¹⁶O in Groundwater

D/H, ¹³C/¹²C, ¹⁴C of Crude, Petroleum Fuels & Gases

ZymaXisotope.com

805.544.4696 isotope@zymaxusa.com

We Find Water!



Aquifer Science & Technology specializes in geophysical surveys for water resource investigations. We work with Water Agencies, municipalities, industries and their hydrogeologic consultants to provide practical and focused surface and bore hole surveys.

We find water! Let us find some water for you too!

Aquifer Science & Technology
Your Ground Water Resource
A Division of Baker/Mello, Inc.

262.542.5733 • www.aquiferscience.com

Transparency International is a 15-year-old, Berlin-based, nonprofit organization.

Access the 345-page report at www.transparency.org/publications/gcr/.

DVD Promotes Water Reuse

Water Reuse for a Sustainable Future
American Water Works Association

One way to meet increasing water demand is through water reuse, in which wastewater is treated for use in irrigation, toilet flushing, and other nonpotable uses. This DVD is designed for water providers who want to inform communities, water boards, mayors, governors, and others about the positive potential of reuse for creating a more sustainable environment for their users. Viewers learn about the hydrologic cycle, treatment cost savings associated with reuse, and the environmental benefits of water reuse. The 11-minute DVD provides examples of water reuse projects in California.

The DVD costs \$195 for AWWA members, \$295 for nonmembers and is available at www.awwa.org/Bookstore/productDetail.cfm?ItemNumber=34914.

Developing Watershed Plans: the Details

Handbook for Developing Watershed Plans to Restore and Protect Our Waters

U.S. EPA

EPA's Office of Wetlands, Oceans, and Watersheds recently released this 400-page document to help communities, watershed organizations, and environmental agencies at all levels develop and implement watershed plans to meet water quality standards and protect water resources. Targeted particularly to those working with impaired or threatened waters, the document contains detailed guidance on quantifying existing pollutant loads, developing estimates of the load reductions required to meet water quality standards, developing effective management measures, and tracking progress once a plan is implemented. It also offers ways to protect important

elements of the landscape and aquatic habitats within a watershed.

The handbook document is available at www.epa.gov/owow/nps/watershed_handbook/.

New Water Quality Website

ATTAINS

U.S. EPA

EPA has released a new database/website for water quality assessment and total maximum daily load (TMDL) information. The site, known as ATTAINS, combines two formerly separate databases: the National Assessment Database (for water quality assessment information reported by states), and the National TMDLs Tracking System (for impaired waters information reported by states).

The site includes state-reported information on: support of designated uses; identified causes and sources of impairment; identified impaired waters; and status of actions to restore impaired

waters. It allows the user to view dynamic tables and charts that summarize state-reported information for the nation as a whole, for individual states and waters, and for the 10 EPA regions.

The website is at www.epa.gov/waters/ir.

Real-Time WQ Info Online

WaterQualityWatch

U.S. Geological Survey

Real-time water-quality data are now accessible online through the USGS WaterQualityWatch website. Measurements are available at more than 1,300 sites across the United States in streams with watersheds as small as a few square miles to more than a million square miles in the Mississippi River. Measurements include streamflow, water temperature, specific conductance, pH, dissolved oxygen, and turbidity.

Access the website at water.usgs.gov/waterwatch/wqwatch.



Dissolved solids in basin-fill aquifers and streams in the southwestern United States—
Executive Summary, by D.W. Anning
<http://pubs.usgs.gov/fs/2008/3076>

Ground-water storage change and land subsidence in Tucson Basin and Avra Valley,
southeastern Arizona, 1998-2002, by D.R. Pool and M.T. Anderson
<http://pubs.usgs.gov/sir/2007/5275/>

Hydrologic data from the study of acidic contamination in the Miami Wash-Pinal Creek Area,
Arizona, water years 1997-2004, by A.D. Konieczki, J.G. Brown, and J.T.C. Parker
<http://pubs.usgs.gov/of/2008/1273/>

Traveltime for the Truckee River between Tahoe City, California, and Vista, Nevada, 2006 and
2007, by E. James Crompton
<http://pubs.usgs.gov/of/2008/1084/>

Evaluation of the acoustic doppler velocity meter for computation of discharge records at
three sites in Colorado, 2004-2005, by M.R. Stevens, Paul Diaz, and D.E. Smits
<http://pubs.usgs.gov/sir/2007/5236/>

Comparison of water years 2004-05 and historical water-quality data, Upper Gunnison River
Basin, Colorado, by N.E. Spahr, D.M. Hartle, and Paul Diaz
<http://pubs.usgs.gov/ds/331/>

U.S. Geological Survey Arizona Water Science Center • <http://az.water.usgs.gov>