The Water Report™
Water Rights, Water Quality & Water Solutions in the West

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WATER QUALITY TRADING

"IN IT TOGETHER: A HOW-TO REFERENCE FOR BUILDING POINT-NONPOINT WATER QUALITY TRADING PROGRAMS"

by Bobby Cochran, Executive Director, Willamette Partnership,
Nicole Robinson Maness, Willamette Partnership, and
Tom Lindley, Perkins Coie LLP

INTRODUCTION

Water quality is one of the most significant environmental issues facing communities across our country. A number of States have successfully initiated "water quality trading" as a flexible tool for meeting water quality goals, and interest in such trading is growing across the United States. A new publication, *In It Together*, is designed to help local groups interested in developing trading programs. Presenting information gathered from successful programs, "lessons learned" from pioneering efforts, and analysis of the state-of-the-art of water trading protocols, *In It Together* provides practical insights for reducing program start-up time, increasing program efficiency, and building the base of trust necessary to sustain water quality improvements over time.

The US Environmental Protection Agency (EPA) defines "water quality trading" as "an approach that offers greater efficiency in achieving water quality goals on a watershed basis. It allows one source to meet its regulatory obligations by using pollutant reductions created by another source that has lower pollution control costs." (EPA, 2003, p.1). The regulatory obligations being referred to are generally those administered under the federal Clean Water Act's (CWA's) National Pollutant Discharge Elimination System (NPDES) permitting regime. A typical water quality trading transaction involves an NPDES-permitted buyer responsible for a "point source" of a regulated pollutant (e.g., end-of-pipe effluent) and a non-NPDES-regulated seller with the ability to reduce impacts from a "non-point source" of the regulated pollutant (e.g., diffuse runoff or streamside shade to address water temperature issues) — though any lower cost pollution abatement regime is potentially marketable to entities otherwise limited to more costly regimes.

Examination and analysis of the successes and failures of groups that have pioneered water quality trading provide valuable lessons to help new trading programs lay the groundwork for success. These lessons, paired with existing resources from the US Department of Agriculture (USDA), EPA, and others, have been incorporated into the new report, fully titled: *In it Together: A How-To Reference for Building Point-Nonpoint Water Quality Trading Programs* (free download available at: http://willamettepartnership.org/in-it-together).

In It Together was produced by The Willamette Partnership (an Oregon-based coalition focused on market-based environmental stewardship) in coordination with USDA's Office of Environmental Markets, the Pinchot Institute for Conservation, and the World Resources Institute. The report lays out practical guidelines for groups wanting to build water quality trading programs and is considered an important part of USDA's ongoing efforts to advance market-based solutions as cost-effective tools to support landowner conservation practices.

Water Quality Markets

Program Steps

Publication Overview

Design Reference

Case Studies

Nonpoint Challenges

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Emerging water quality trading programs need not start from scratch. Most programs require the same supporting infrastructure (standardized processes and technology tools). Examples of currently functioning water quality market infrastructures are now available from model programs across the country.

Steps to build a water quality trading program for a local watershed include:

1) evaluating the feasibility of a program
2) convening the right group of stakeholders
3) designing the program itself
4) securing some form of program approval from regulatory agencies
5) implementing the program
6) setting up an adaptive management approach allowing for improvements and fine tuning along the way

In It Together is presented in several parts so readers can quickly access the information they need. Part 1 presents an overview and current status of point-nonpoint water quality trading programs around the country. It is a useful primer for those interested in water quality trading in general or as important background summarizing existing water quality trading programs and the lessons they provide for new programs. Part 2 is a design reference for building and operating water quality trading programs. It is essentially a manual for new or emerging programs that outlines how to move through each of the phases of trading program development and provides milestones within each phase to help trading program designers identify and plan for the work required. Part 3 presents case study write-ups for water quality trading programs in North Carolina, the Pacific Northwest, and the Chesapeake Bay.

A companion report titled *Opportunities for Action* proposes actions that federal and state authorities can take to help water quality programs launch, and most importantly, sustain themselves to where they are realizing measurable improvements in water quality.

BACKGROUND

Much has been done to address water quality issues in the US, principally by focusing on controlling point sources of water pollutants through the administration of NPDES permits. However, many water bodies remain distressed and continuing water quality improvement will be difficult because today's major pollution sources are more dispersed. Challenges surrounding urban stormwater and polluted runoff from land are rooted in how we build towns, grow food, and produce other economic activity. Nutrient runoff that leads to eutrophication of water bodies is also one of the most significant drivers of ecological change (Millennium Ecosystem Assessment, 2003). With these challenges, neither the problem nor the solution rests with small numbers of easily identifiable sources of pollution. Almost 84% of phosphorus and 82% of nitrogen in US waters come from nonpoint sources — including: stormwater; agricultural lands; forestry operations; new development; and other non-point sources (Carpenter et. al., 1998; MART, 2006). Collective problems require collective solutions and addressing these problems will require new thinking and new tools.

Water quality trading is one such tool; it can help coordinate point sources and nonpoint sources of pollution to cost-effectively meet water quality goals. Since beginning about 20 years ago, trading programs are now developing rapidly. As of 2011, there were 24 active point-nonpoint trading programs in 16 States across the country (these are shown in Figure 1 and listed in Table 1). "Active" programs have completed trading program designs and/or completed transactions. The majority of current trading programs to date focus on phosphorus (79% of programs) and nitrogen. There is also growing trading activity for: temperature; sediment (e.g. total suspended solids); and ammonia. Generally, EPA does not support trades of persistent bioaccumulative toxics, like mercury (US EPA, 2007, p.10) — but some States are exploring how trading might help reduce both legacy and new sources of these pollutants.

For the most part, the 24 active trading programs occur under specific NPDES permit language or State water quality trading guidance. Nine States have statewide trading guidance or statutes to guide their trading programs, and five States have issued guidance or statutes for particular watersheds (Figure 1). These programs represent two decades of useful experience in building water quality programs. *In It Together* distills that experience to help new trading programs lay the groundwork for success.

Water Quality Markets

Figure 1
Map of Active Point-Nonpoint Water Quality Trading Programs and State Policies

Table 1

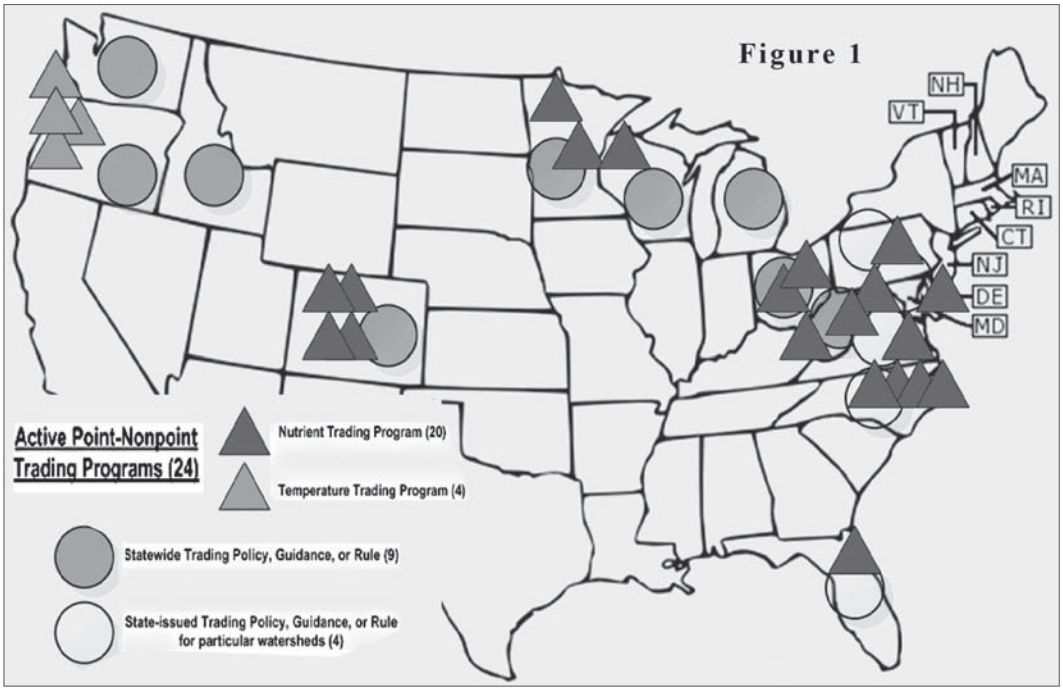

Table 1 Active Trading Programs in the United States in 2011

Program	State	Market structure
Bear Creek	CO	Bilateral & Brokered trades
Chatfield Reservoir	CO	Bilateral
Cherry Creek Basin	CO	Sole-source offsets
Lake Dillon	CO	Bilateral
Delaware Inland Bays	DE	Bilateral
Lower St. Johns River	FL	Bilateral
MD Chesapeake Bay	MD	Auction & Bilateral
Rahr Malting	MN	Brokered trades
Southern Minnesota Beet Sugar Coop	MN	Bilateral & Sole-source offsets
Falls Lake	NC	Bilateral from private banks & in-lieu fees to the NC Ecosystem Enhancement Program
Neuse River	NC	Bilateral from private banks & in-lieu fees to the NC Ecosystem Enhancement Program
Jordan Lake	NC	Bilateral from private banks & in-lieu fees to the NC Ecosystem Enhancement Program
Tar-Pamlico Estuary	NC	Bilateral from private banks & in-lieu fees to the NC Ecosystem Enhancement Program
Great Miami River	OH	Sole-source offsets
Sugar Creek (Alpine Cheese)	OH	Bilateral & Brokered trades & Exchange
Ohio River Basin Trading Project	OH	Auction
Tualatin River (Clean Water Services)	OR	Sole-source offsets
Rogue River (Willamette Partnership)	OR	Sole-source offsets
Willamette River (Willamette Partnership)	OR	Sole-source offsets
Lower Columbia (Willamette Partnership)	OR	Sole-source offsets
PA Chesapeake Bay	PA	Auction & Bilateral & Brokered trades
VA Chesapeake Bay	VA	Bilateral through the VA Water Quality Improvement Fund or Brokered trades for compliance credits exchanged through the VA Nutrient Credit Exchange Association
Red Cedar River	WI	Bilateral
WV Potomac/Chesapeake Bay	WV	Auction & Bilateral

Table 2. Water Quality Trading: Challenges & Benefits

Potential Challenges with Water Quality Trading:

- Creates uncertainty about whether actual reductions in pollution are achieved (tools for quantifying nonpoint source pollution are limited)
- Introduces uncertainty about whether reductions can be tracked over time
- Builds concern that trading might be a precursor to regulation
- Creates localized pollution hotpots (e.g. areas of elevated nutrients)
- Can create the perception that landowners are helping a point source "get off the hook" for polluting
- Creates concerns over the balance between privacy and transparency for landowners participating in trading
- Takes some active farmland out of crop production as it is converted into passive conservation

Potential Benefits of Water Quality Trading:

- Reduces cost and increases speed of complying with Clean Water Act
- Provides options and flexibility in meeting Clean Water Act requirements
- Creates new revenue streams for farmers
- Creates additional funds for green infrastructure with benefits beyond water quality (e.g. habitat, recreation, climate)
- Increases accountability and provides new tools for tracking water quality improvements from nonpoint sources
- Builds new relationships between rural and urban communities

COMMON QUESTIONS AND CONCERNS ABOUT WATER QUALITY TRADING

Real and perceived issues of integrity are barriers to any market and water quality trading is no exception. The development of a local trading program most often raises a set of concerns that is common to all water trading development efforts, regardless of geography (Heinzerling, 1995; Chinn, 1999). All these commonly-arising concerns must be directly and sufficiently addressed by local groups building a trading program (they are listed in Table 2).

Water Quality Markets

Viability Assessment

Appropriate Stakeholders

Science & Process

But-In

Pilots

Flexibility

Balancing

A FRAMEWORK TO GUIDE A TRADING PROGRAM DESIGN

Basic Steps

Whether designing a complex trading program for multiple buyers or sellers or putting together a deal between one buyer and one seller, research shows that some version of the following basic steps have been replicated across programs and across the country:

1) **Feasibility:** Conducting a feasibility assessment determines if water quality trading is a viable tool to meet water quality objectives within a specific watershed.
   Important questions to answer include:
   Does the watershed have the right geographic, economic, social, and other elements in place to make a trading program viable?
   Are water quality goals clear enough for stakeholders in the watershed to know whether trading is an appropriate tool to achieve those goals?
2) **Convening:** Some of the most important work in building a trading program comes in convening and preparing the right group of stakeholders — i.e., those with the necessary knowledge, capacity, and commitment — to create and operate a trading program.
3) **Design:** The design phase of building a program turns a feasible program opportunity into reality. It includes building the science to quantify water quality credits and establishing how nonpoint source discharges will create water quality credits, including the creation of the policy to shape who can trade and how trades are to be conducted.
4) **Agreement:** Each program design needs some level of stakeholder agreement to take a program from the design phase into where trades and transactions are actually occurring. That agreement can be more or less formal, but it should include or reference some regulatory authority to place the program on solid legal and policy footing.
5) **Operations:** Often, most energy goes into designing a program, but operating a successful program over time requires flexibility, careful planning, a variety of skill sets, and potentially different groups of stakeholders. Operations require rolling out a pilot version of the program's quantification methods and protocols, identifying a Program Administrator to see projects through the credit issuance process, as well as maintaining and improving the program over time.
6) **Adaptation:** No program is perfect, and every program needs adjustments, particularly during the first few years of operation. Structured ways to gather lessons learned, catalogue needed improvements, and make adjustments on a predictable schedule will help with the process of adaptive management.

Program Trade-Offs

As programs get designed and then evolve to match their local physical, social, and economic conditions, they must balance a series of tradeoffs based on geography, ecology, and program goals — in both design and operations.

Table 3: Milestones for Each Phase of Building a Trading Program

Building a Trading Program	Milestones
Feasibility	☑ Assess demand & supply ☑ Secure policy support for trading concept ☑ Review of available quantification methods ☑ List of program leaders
Convening	☑ Identification of roles ☑ List of stakeholders & requirements of them ☑ List of potential challenges ☑ Process design completed
Design (Goals & Methods)	☑ Clarify water quality & other program goals ☑ Select field and watershed-scale credit quantification methods
Design (Eligibility)	☑ Define baseline requirements ☑ Set trading area boundaries ☑ Establish BMP performance standards ☑ Set timing, duration, and maintenance requirements for credits
Design (Verification, Certification, & Reporting)	☑ Define what gets verfied, by whom, and when ☑ Clarify role for agencies in certifying trades ☑ Establish reporting rules and database
Design (Ratios, Liability, Infrastructure, & Testing)	☑ Set trading ratios for delivery, uncertainty, and other factors ☑ Define other liability and enforcement tools ☑ Build necessary infrastructure to make trading easy ☑ Do a pilot test to make sure the program design matches local capacities and watershed realities

Table 4: Milestones for Each Phase of Operating a Trading Program

Milestones	Operating a Trading Program
☑ Secure formal trading agreement with agency approval	Agreement
☑ Establish program governance structure ☑ Complete transactions guide ☑ Set pricing structure ☑ Provide training for participants ☑ Agree to business plan for sustaining program operations	Operations
☑ Annual report on program results ☑ Agree to changes needed to quantification methods and program designs ☑ List of needed information and research ☑ Make program improvements over time	Adaptive Management

Programmatic trade-offs include:

Simplicity vs. Complexity of Program Design: Interviews with stakeholders in North Carolina's Ecosystem Enhancement Program often cited the simplicity of the program's Trading Reference as one of the main sources of this program's success. That simplicity comes from easy-to-follow trading rules and quantification methods — i.e., the methods, equations, rules, and tools that translate water quality indicators into "credits" or "debits." This simplicity makes it easy for buyers and sellers to estimate their credit quantities and the cost of providing or purchasing those credits. In other circumstances, other programs utilize more complex models — such as those sometimes used to quantify nutrient reductions. More complex models may prove useful in better delineating the relative merits of different pollution abatement projects. However, at a certain point increased complexity runs the risk of becoming labeled as a "black box" — i.e., a functionally opaque process little understood by a range of potential market participants. Such circumstances can reduce trust in a program.

Larger vs. Smaller Trading Areas: The larger the geographic region for trading, the greater the number of buyers and sellers, and the greater the opportunities to conduct trades. Yet, as trading areas get bigger, operations may become more complex and it can be difficult to articulate water quality improvements from point A to point B. For example, nutrient reduction in the Colorado River does not help hypoxia in the Gulf of Mexico. There needs to be a strong connection between buyers and sellers and resulting water quality improvements. This creates a need to geographically constrain trading.

High Tolerance vs. Low Tolerance for Risk: Different sets of stakeholders will have different capacities and interest in accepting risk and responsibility. Some watersheds may have third party aggregators willing to accept the risk of conservation projects failing. Others may have stakeholders with a history of litigation. Some farmers may like the idea of variable pricing and competing to offer the cheapest credits. Others may like the simplicity of a set price for everyone. Some agencies may be comfortable with annual, informal contracts for maintaining conservation practices. Others may want permanent easements. All of these preferences center on people's perception and tolerances for risk. There is no "right" level, but uncovering the real sources of risk and people's preferences concerning those risks helps program design be more balanced and user-friendly.

Part 2 of *In It Together* provides a detailed reference for how watersheds can build and operate point-nonpoint water quality trading programs. The guidelines presented are drawn from current experience and offer specific milestones for programs to achieve. Milestones building and operating water quality trading programs are presented in Tables 3 and 4.

Water Quality Markets

Expanding Opportunities

Thermal Load & Riparian Vegetation

SUPPORTING POINT-NONPOINT WATER QUALITY TRADING PROGRAMS

RECOMMENDATIONS FOR THE NEXT ITERATION OF PROGRAMS

Even though various water quality trading programs have been active and functioning for more than 20 years, trading is still a "work-in-progress." To varying degrees, all current and potential water quality programs would benefit through improvements in a number of identifiable areas. *Opportunities for Action* (the companion report to *In It Together*) presents a number of actions that state, federal, and other entities can take to support and expand water quality trading opportunities. Those actions are presented in Table 5.

Table 5. Opportunities for Action

Improve the opportunities for trading programs to succeed
Provide technical assistance so local programs can assess feasibility and adapt existing tools
Identify a trading lead within each state water quality agency
Insert trading early (e.g. in TMDL documents) as an option to meet water quality goals
Clarify regulatory guidance on water quality trading
Update 2003 U.S.EPA Water Quality Trading Policy
Help states provide clear guidance on trading including updating 2003 U.S.EPA Water Quality Trading Policy and other guidance
Develop standards for credit quantification methods
Make Nutrient Tracking Tool available as a national tool
Put the trading option on par with engineered solutions where feasible
Provide tools for point sources to include trading options in their facilities plans, and market those tools to utilities and consulting engineers
Use simple pilot transactions to show trading is viable
Provide early guaranteed buyers for water quality credits
Find ways to establish a track record for water quality credits as "capital" assets
Encourage more systematic evaluation, sharing of program results, and adaptive management
Provide a national reporting framework for trading programs to generate and share data
Develop a standard verification template for monitoring performance and compliance for individual nonpoint source projects
Develop a methodology for assessing program effectiveness
Link regional programs together to increase program design consistency across states

WATER QUALITY TRADING IN THE WEST

WHERE IS WATER QUALITY TRADING HEADING?

In It Together provides practical step-by-step guidance for starting new water quality trading programs as well as a useful reference for active trading programs, but let us take a moment to survey what is already happening in the West. Overall, interest in trading is growing quickly in the West, with discussions about trading occurring in California, Colorado, Montana, Idaho, and Washington. New transactions have also occurred.

Oregon Examples

An overview of two similar yet diverse water trading programs in Oregon will help illustrate the range of opportunities available.

The Water Report has published previous articles regarding the NPDES-permitted efforts of the wastewater/stormwater management company Clean Water Services to restore riparian vegetation in Oregon's Tualatin River watershed to offset its facilities' "thermal load" — i.e., the water-warming impacts of end-of-pipe effluent (see Cordon, *TWR* #24; Dupuis, et al, *TWR* #52). Clean Water Services continues to expand its planting activities beyond its original target of 35 miles of restored riparian forest.

In December 2011, the City of Medford, Oregon, (City) and the Oregon Department of Environmental Quality (ODEQ) completed an NPDES permit that also allowed for trading to address thermal load (see Horton & Gaddis, *TWR* #94). The City's Regional Water Reclamation Facility, working with The Freshwater Trust and using standards set by the Willamette Partnership, will restore approximately 30 miles of stream-side shade over the next ten years. In an approach similar that of Clean Water Services, this trading option will save area ratepayers almost $8 million over other compliance alternatives. Medford considered adding mechanical cooling to its plant for nearly $20 million, or constructing a holding pond

Water Quality Markets

In-House Capabilities

Scale & Financing

Available Standards

Agency Support

Nutrient Trading

in the gravels near its plant for $16 million. The riparian restoration alternative will cost $8 million. To account for time for trees to grow and the risk of project failures, Medford will produce two times the amount shade it needs to offset its current need at the wastewater facility. Importantly, the Medford permit establishes a model that other mid to small-sized utilities can use to access trading requirements.

Clean Water Services has established internal management capacities that many communities cannot or do not want to establish. When Clean Water Services began its trading program in the early 2000s, it had an entire department of experts on regulatory affairs and watershed restoration. It built on that foundation to install almost 500,000 trees per year and generate the reports and monitoring needed to demonstrate compliance with its NPDES permit. Most utilities do not have that kind of capacity. The City of Medford has one person in charge of regulatory affairs and has no internal restoration department. When the Willamette Partnership first approached Medford to discuss water quality trading, City engineers responded, "Great, how are you going to deliver my trees?"

At this point, The Freshwater Trust, a regional nonprofit specializing in river restoration, stepped in. The Freshwater Trust demonstrated that it could: A) help Medford achieve the scale of restoration needed to meet its permit requirements; and B) finance the initial restoration projects while delivering verified temperature credits to the City. The Freshwater Trust also assisted City engineers in developing their alternatives analysis to include a trading option and their temperature trading plan for review by ODEQ.

The City's temperature trading plan utilized trading standards developed by the Willamette Partnership under its "Counting on the Environment" process. Counting on the Environment convened all the federal and state regulatory agencies involved in issuing and commenting on permits (including ODEQ) to develop shared trading program principles and designs. Those standards — which include: methods for quantifying water quality improvements; protocols for verifying credits; and technology for tracking and reporting on credits to the public — eased the approval process for the City's permit. It also provided the City, environmental groups, The Freshwater Trust, and others with a predictable and transparent platform from which to run their trading program.

With The Freshwater Trust's business model, Willamette Partnership's standards, and ODEQ's regulatory support, the City is now in the water quality trading business. The first pollution abatement projects under the new permit will be planted this fall on both the mainstem and tributaries of the Rogue River. The Medford model could be used by other utilities across the West.

The Klamath Tracking and Accounting Program

This summer, agencies and other stakeholders on the California and Oregon sides of the Klamath River Basin signed off on the Klamath Tracking and Accounting Program (KTAP) protocol. This effort is designed to track bi-state progress toward meeting Total Daily Maximum Load (TMDL) goals for nutrient and temperature reductions within the Basin. KTAP includes investments from the Oregon Watershed Enhancement Board, PacifiCorp, and others. KTAP is using the same adapted program design and protocols developed by the Willamette Partnership that the Rogue watershed is using. The first projects there are likely to be implemented this fall in the tributaries to Upper Klamath Lake. KTAP opens the door for the first nutrient trading programs in Oregon and California.

Willamette Partnership, The Freshwater Trust receive $1.5 million Grant from USDA

FUNDS TO DEVELOP A THREE-STATE REGIONAL AGREEMENT ON WATER QUALITY TRADING

Press Release: August 24, 2012

Willamette Partnership, along with The Freshwater Trust, received a $1.5 million grant from the Conservation Innovation Grants (CIG) program run by USDA's Natural Resources Conservation Service. Funding from the CIG grant will develop a Joint Regional Water Quality Trading Agreement between Oregon, Washington, and Idaho that provides clear and consistent guidance on water quality trading to achieve real water quality improvements throughout the Pacific Northwest. Willamette Partnership will lead the effort, and The Freshwater Trust will match USDA's financial commitment. Oregon Department of Environmental Quality, Idaho Department of Environmental Quality, Washington Department of Ecology, and US EPA Region 10 will also play pivotal roles in the project.

The grant builds on a $1 million CIG grant the two organizations received last year to operationalize water quality trading in Oregon and The Freshwater Trust's subsequent $8 million contract with the City of Medford's wastewater treatment facility to meet their regulatory compliance obligation while benefitting the watershed's rivers and streams and providing additional revenue for agricultural producers.

"We believe there are states around the nation that are on the cusp of having thriving water quality trading markets," USDA Secretary Tom Vilsack said. "These grant awards will help develop projects that create new revenue streams for farmers and ranchers while they are helping to improve water quality."

Work between project partners will begin this fall.

Water Quality Markets

Identify Demand

Support & Science

Project Commonali

CONCLUSIONS

WHAT WE HAVE LEARNED SO FAR

There is no denying that convening, designing, and operating a water quality trading program is not a simple undertaking. There are constant challenges to overcome. One EPA staffer often comments that trading is not for the faint of heart. That said, enormous progress has been made, the potential is enormous, and there are important lessons learned for others.

Lessons Learned include:

Do your homework: Every trading effort must start with careful thinking about feasibility before convening stakeholders or investing much financial or social capital. Willamette Partnership, for example, looks for watersheds where someone is getting ready to spend at least $3 million over three years on a technological solution that could be better achieved through restoration or conservation. Identifying real demand is critical. State water quality agencies and EPA need to be supportive of trading and invested in making it work. On the supply side, a group like The Freshwater Trust or a soil and water conservation district needs to be in place to help landowners install high quality projects and take on some risk for project performance and financing. To put the pieces together, there must be science and protocols to quantify water quality improvements and verify that those improvements remain functional over time. Willamette Partnership is actively working on all these elements in the Northwest and is available to help groups in other Western states as well. Finally, trading needs leadership and champions in the relevant local watershed.

No need to start from scratch: Every watershed is unique; however, many of the program elements for trading are similar and those elements have been developed and tested. New programs should borrow the 80% of design elements that are common across geography, focusing most of their resources on the 20% unique to their locale. Trading programs should also be coordinating regionally to ensure consistency, transparency, and quality across programs.

Trading is an increasingly viable and cost-effective option — but not in all circumstances: Willamette Partnership encourages any utility to consider trading — to include trading among their facilities' planning, permit compliance alternatives, etc. However, trading will not work for many utilities — either because local conditions are not ready or cheaper alternatives exist.

Finally, training is growing. The Willamette Partnership has several training programs (see, http://willamettepartnership.org/). Others host such programs. For example: The Seminar Group's upcoming October program on "*Ecological & Environmental Mitigation Banking*" (see, www.theseminargroup.net) to be held in Seattle, WA, and the December 2012 "*ACES and Ecosystem Markets Joint Conference*" (see, http://ecosystemcommons.org/event/aces-and-ecosystem-markets-2012) being held in Fort Lauderdale, FL.

Much has been learned and, although there is much still to learn, the power of this new tool is enormous — and it deserves our thoughtful consideration.

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Tom Lindley leads the national Environment, Energy & Resources Practice at the law firm Perkins Coie LLP. For over 25 years, Tom has represented wastewater and stormwater dischargers on every aspect of permitting and compliance. Tom helped to conceive and create the nation's first watershed-based multiple source NPDES permit, is actively engaged in efforts to expand water quality trading, and is on the Advisory Board for the Smithsonian's Environmental Research Center.

Nicole Robinson Maness is the Willamette Partnership's lead on aquatic and upland habitat protocols. Nicole is working with state and federal regulatory agencies in Oregon on stream and wetland mitigation, and catalyzing efforts to link regulatory assurances, ecosystem markets, and sustainable certification incentives. She has an extensive background in forest ecology. She is co-author of "*Measuring Up: Synchronizing Biodiversity Measurement Systems for Markets and Other Incentive Programs*"— a report recently released by the USDA Office of Environmental Markets (http://willamettepartnership.org/measuring-up). She is also a faculty research assistant at Oregon State University working on projects investigating policy issues related to private landowner involvement with voluntary carbon markets.

Water Quality Markets

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THE ESA & WATER: LITIGATION UPDATE

THE ENDANGERED SPECIES ACT AS DRIVER OF WATER QUALITY AND WATER QUANTITY

by Marie Quasius and Eric Laschever, K&L Gates (Seattle, WA)

ESA Litigation

Water Resources

Broad Reach

ESA Principles

Jeopardy & "Take"

Action Agency

Mitigation Mechanism

Consultation Trigger

"Discretionary" Control

Species Benefit

INTRODUCTION

Although the primary purpose of the Endangered Species Act (ESA) is to protect wildlife from extinction, 16 U.S.C. § 1531(a)(1), it frequently affects decision-making with regard to both water quantity and water quality. In these contexts, the ESA may enhance the water quality protection provided by the Clean Water Act (CWA) and modify flow regimes for hydropower and irrigation projects. In addition, Congress's policy statement in the ESA directs Federal agencies to "cooperate with State and local agencies to resolve water resource issues in concert with conservation of endangered species." 16 U.S.C. § 1531(c)(2).

The ESA's broad reach, influencing both water quantity and water quality, appears in a wide variety of situations. To the extent that the endangered or threatened species rely on a certain water quantity or quality for habitat, the link is clear (e.g., instream mining in salmonid critical habitat). In other cases, the relationship between the management activity and water quality impacts is less clear, as with the National Flood Insurance Plan litigation described below.

This litigation update briefly introduces the structure of the ESA and then highlights recent litigation that illustrates important ESA principles and the application of these principles to cases involving aquatic resources, water quality, and water quantity.

THE ENDANGERED SPECIES ACT

The ESA of 1973 obliges Federal agencies to consult prior to taking actions that "may affect" ESA listed species and insure that their actions do not "jeopardize" listed species or destroy or adversely modify the critical habitat of listed species (Section 7), and prohibits "any person" from the unauthorized "take" of listed species (Section 9). This article focuses on litigation under ESA Sections 7 and 9. Section 4 provides authority for listing species, designating critical habitat, and drafting recovery plans, 16 U.S.C. § 1533, but the relationship between Section 4 litigation and impacts on water quality or quantity is much less direct.

ESA Section 7: "Federal Agency" Duty to Consult and Insure No Jeopardy to Listed Species or Adverse Modification of their Habitat

ESA Section 7 imposes both procedural and substantive requirements on a Federal agency (action agency) issuing permits or licenses, granting funds, or taking other actions which may affect an ESA-listed species. 16 U.S.C. § 1536(a). Section 7(a)(2) requires the action agency to consult with either the US Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS) (collectively "the Services") to insure that an action authorized, funded, or carried out by the agency "is not likely to jeopardize the continued existence of" any ESA-listed species and will not "result in the destruction or adverse modification of" its critical habitat. 16 U.S.C. § 1536(a)(2).

Substantively, Section 7(a)(3) requires that Federal agency actions do not result in jeopardy or the destruction of an ESA-listed species or adverse modification of that species' critical habitat. 16 U.S.C. § 1536(a)(3). This provides a mechanism for USFWS and NMFS to propose mitigation in order to avoid or minimize impacts to listed species. The ESA and its regulations do not use the term "mitigation;" however, the practical effect of the ESA is the same — the addition of conditions or modifications that reduce impacts to protected species and their habitat.

Whenever an ESA-listed species is in the area affected by a proposed agency action, the action agency conducts a biological assessment to determine whether a listed species is likely to be adversely affected by the action. If the answer is yes, then it must initiate "formal consultation" with the appropriate Service. 16 U.S.C. § 1536(c)(1). The bar for the other threshold question — that the action "may affect" a listed species — is met even if the likelihood of the adverse effect is extremely limited. 50 C.F.R. § 402.14(a); 51 Fed. Reg. 19,926, 19,949 (June 3, 1986) ("*Any* possible effect, whether beneficial, benign, adverse or of an undetermined character, triggers the formal consultation requirement … .").

The Section 7 duty to consult applies only if a Federal agency is considering a "discretionary" action that may affect a listed species. *Nat'l Ass'n of Home Builders v. Defenders of Wildlife,* 551 U.S. 644, 666 (2007); 50 C.F.R. § 402.03 (requiring "discretionary Federal involvement or control"). To trigger the ESA consultation requirement, the discretionary control retained by the Federal agency also must have the capacity to inure to the benefit of a protected species, *Turtle Island Restoration Network v. Nat'l Marine Fisheries Serv.*, 340 F.3d 969, 974-75 (9th Cir. 2003), or there is no duty to consult because "consultation would be a meaningless exercise." *Sierra Club v. Babbitt,* 65 F.3d 1502, 1508-09 (9th Cir. 1995).

While undergoing Section 7 consultation, the ESA forbids the Federal agency and the permit or license applicant (if any) from "mak[ing] any irreversible or irretrievable commitment of resources with respect to

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the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures… ." 16 U.S.C. § 1536(d).

After consultation, the Service must issue a **bi**ological **op**inion (BiOp) that details how the proposed action "affects the species or its critical habitat," including the impact of "incidental takings" of the species. 16 U.S.C. § 1536(b)(3)(A), (b)(4). All steps of the consultation (as memorialized in the BiOp) must be based on the best available science. 16 U.S.C. § 1536(a)(2).

If the BiOp finds that the action will result in either jeopardy to an ESA-listed species or adverse modification of that species' habitat, USFWS or NMFS must suggest a "reasonable and prudent alternative" (RPA) to the agency's proposal. 16 U.S.C. at § 1536(b)(3)(A). "The agency is not required to adopt the alternatives suggested in the BiOp; however, if the Secretary deviates from them, he does so subject to the risk that he has not satisfied the standard of Section 7(a)(2)." *Tribal Village of Akutan v. Hodel,* 869 F.2d 1185, 1193 (9th Cir. 1988).

Finally, an action agency's duty to consult does not end when the Services issue the BiOp. ESA regulations require the reinitiation of consultation when there is new information, new effects (due to action modification), designation of a new species or critical habitat, or an exceedance of the anticipated "take" (i.e., adverse impacts to listed species — see below). Practically speaking, this requirement relates to anything suggesting that a BiOp no longer fully describes an action's impacts on a listed species. 50 C.F.R. § 402.16. One important limitation to the reinitiation requirement, however, is the requirement that "the action agency retains discretion or control over the action." *Id.* Notably, this regulation does not limit the ability of USFWS and NMFS to require that the BiOp be reopened for other reasons.

ESA Section 9: Prohibition of "Take" by "Any Person"

Section 9 applies to private conduct on private land and encompass a broad range of behavior by "any person" that causes "take." "Person" is defined to include "an individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal Government, of any State, municipality, or political subdivision of a State, or of any foreign government; any State, municipality, or political subdivision of a State; or any other entity subject to the jurisdiction of the United States." 16 U.S.C. § 1532(13). The ESA defines "take" broadly to encompass "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS and NMFS have also adopted regulations defining the term "harm" as including "significant habitat alteration which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns." 50 C.F.R. § 222.102. In practice, however, Section 9 litigation appears less frequently in ESA litigation, perhaps because courts require proof of actual injury. *Marbled Murrelet v. Babbitt,* 83 F.3d 1060, 1068 (9th Cir. 1996).

In addition to direct liability for take, "a governmental third party pursuant to whose authority an actor directly exacts a taking of an endangered species may be deemed to have violated the provisions of the ESA." *See, e.g., Strahan v. Coxe*, 127 F.3d 155, 163 (1st Cir. 1997).

Enforcement of the ESA

The ESA authorizes citizen suits to enforce against violations of both Section 7 and Section 9. 16 U.S.C. § 1540(g). Nearly all of the major ESA litigation in the past year was brought by citizen plaintiffs (e.g., environmental organizations), as illustrated by the cases described below. The ability to obtain injunctions in a citizen suit, 16 U.S.C. § 1540(g)(1)(A), is instrumental to ESA's ability to affect water quality and quantity.

LITIGATION UPDATE (2011-2012)

ESA Section 7(a)(2) – Merits/Best Available Evidence/Record Challenges

Section 7 consultations must address all "important aspects" of the problem.

Northwest Environmental Advocates (NEA) v. U.S. Environmental Protection Agency, --- F.Supp.2d ---, 2012 WL 653757 (D. Or. Feb. 28, 2012) – NEA successfully challenged USFWS and NMFS BiOps which concluded that Oregon's new water quality standards for temperature, **i**nter**g**ravel **d**issolved **o**xygen (IGDO), and antidegradation were not likely to jeopardize listed salmonid species nor adversely modify their critical habitat.

The challenges alleged several deficiencies in the BiOps. Regarding the NMFS BiOp, the court agreed with NEA that NMFS arbitrarily concluded that a temperature standard would have a similar effect regardless of the Evolutionarily Significant Unit (ESU), and, therefore, would have the same "no jeopardy" effect on each individual ESU. The court noted that at least one of the ESUs was so weak that only ten adults returned from 1994 through 2012. The court also held that NMFS failed to address how short-term impacts to salmonids would affect recovery over the long-term, which is an "important aspect" of the problem for a species with a short life cycle.

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Cumulative Impacts

"DPS"

Delta Smelt BiOp

Delta Outflow Plan

Science Failure

No Biological Evidence

Action Agency Trigger

Third, the court chided the agency for approving the new temperature standard despite the reality that it would allow water temperatures above the appropriate range for listed salmonid species. The court found the "not likely to adversely affect" conclusion especially egregious because it was based on Oregon State's past failure to achieve its own water quality standards. Based on the degraded baseline, it was also arbitrary for NMFS to answer whether "the action, taken together with cumulative effects" is likely to result in jeopardy or adverse modification, because it failed to actually analyze the ever-increasing cumulative impacts of timber harvests, agriculture, and rural development in conjunction with the proposed action.

Regarding the USFWS BiOp, Plaintiffs also convinced the court that USFWS should have examined impacts to each Distinct Population Segment (DPS) instead of concluding that the action was "not likely to adversely affect" the combined population of the two relevant bull trout DPSs. The Services use the phrase "Evolutionarily Significant Unit" to describe subpopulations of anadromous fish (i.e., salmon and steelhead) but use "Distinct Population Segment" to describe subpopulations of non-anadromous fish (e.g., bull trout). The court also found that USFWS arbitrarily found that the effects of the temperature standard would be "discountable" (i.e., effects that are "extremely unlikely to occur") because it permitted temperatures 3-6 degrees Celsius above the maximum temperature for bull trout spawning and incubation. ***Agencies must examine the best scientific and commercial data available throughout the entire Section 7 consultation process, including the formulation of RPAs.***

The *Consolidated Delta Smelt Cases,* Nos. 1:09-CV-00407 OWW DLB, 1:09-cv-00480-0WW-GSA, l:09-cv-00422-0WW-GSA, 1:09-cv-0063l-0WW-DLB, 1:09-cv-00892-0WW-DLB, 2011 U.S. Dist. LEXIS 98300 (E.D. Cal. Aug. 31, 2011) – In 2008, NMFS prepared a BiOp concerning threatened delta smelt for the coordinated operations of two major water projects which pump water out of the Sacramento-San Joaquin River Delta in California — the Federal Central Valley Project (CVP) and the State Water Project (SWP). The BiOp concluded that "the coordinated operations of the CVP and SWP, as proposed, are likely to jeopardize the continued existence of the delta smelt" and "adversely modify delta smelt critical habitat."

NMFS accordingly proposed a multi-component RPA in order to prevent jeopardy and adverse modification. Plaintiffs sought to enjoin RPA Component 3, Action 4 (the "Fall X2 Action"), which aimed to improve habitat for delta smelt growth and rearing by requiring sufficient Delta outflow to maintain a monthly average location of 2 ppt salinity no greater (more eastward) than 74 kilometers from the Golden Gate Bridge in "wet" water years and 81 kilometers from the Golden Gate Bridge in "above normal" water years. However, the estimated impact to water users from this RPA component included a loss of 300,000-670,000 acre-feet of water in 2012. [Editor's Note: Salinity is expressed by the amount of salt found in 1,000 grams of water. Therefore, if we have 1 gram of salt and 1,000 grams of water, the salinity is 1 **p**art **p**er **t**housand (ppt).] The court had previously determined that NMFS violated the ESA and the National Environmental Policy Act (NEPA) by imposing the outflows RPA, which the court held in December 2010 to be an arbitrary and capricious exercise of NMFS's authority due to the agency's failure to rely on the best available science. When it appeared that weather conditions would trigger implementation of the RPA, however, NMFS and the US Bureau of Reclamation announced that they would implement the RPA in September 2011, notwithstanding the December 2010 holding.

The court applied a de novo standard of review (i.e., as if reviewing for the first time) to the injunctive relief proceeding, holding that it was not confined to the administrative record nor limited by deference to an agency's reasoned opinions within its field of expertise. The agency's experts opined that it was necessary to create low salinity zones that overlapped with biologically productive areas to increase food opportunities and decrease predation for pre-adult smelts during the fall, which is important to the species' survival and recovery because individual reproduction is related to the calories obtained during the fall. Plaintiffs set out a variety of arguments for why the science on which the agencies relied was unreliable, incomplete, or otherwise non-persuasive. The court sided with Plaintiffs and found that "[t]he scientific evidence in support of imposing any Fall X2 action is manifestly equivocal" and that "[t]here is essentially no biological evidence to support the necessity of the specific 74 km requirement." On this basis, as well as the potential for irreparable harm and the fact that Plaintiffs had already demonstrated success on their claims, the judge granted Plaintiffs' request for an injunction.

Section 7(a)(2) – Requirement to Consult / No Effect Determination

Whether an agency action is "affirmative" and "discretionary" and thus triggers Section 7 consultation is a fact-specific analysis.

Karuk Tribe of California v. U.S. Forest Service, 681 F.3d 1006 (9th Cir. 2012) — The plaintiff Karuk Tribe of California (Tribe) challenged the United States Forest Service (USFS) practice of reviewing Notices of Intent (NOIs) proposing to conduct certain types of mining in designated Coho salmon critical habitat without Section 7 consultation. The Tribe argued that USFS's review of NOIs to determine whether the activities described therein were likely to "significantly disturb surface resources" (and thus require submission of a Plan of Operations) is an "agency action" triggering ESA review under Section 7(a)(2). The Ninth Circuit initially held that: (1) because federal law (the Organic Administration Act) provides for

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"Affirmative" & "Discretionary" Actions

Flood Insurance Mapping

Mapping Dispute

FEMA Consultation

Low "Affect" Threshold

Early Consultation Required

Offshore Drilling

a right to enter federal lands for prospecting, the NOI process is a "simple notification procedure" rather than a request for the USFS's authorization because the USFS does nothing to allow mining; and (2) where a federal agency lacks discretion to influence the private action, ESA consultation would be meaningless. *Karuk Tribe of California v. U.S. Forest Service*, 640 F. 3d 979 (9th Cir. 2011). However, on rehearing, the Ninth Circuit reversed itself and held that USFS's action was both "affirmative" (because legal consequences flowed from approval of the NOI) and "discretionary" (because the USFS formulated criteria for protecting salmon and their habitat, refused to approve NOIs based on impacts to fish habitat, and applied different criteria in different districts of the same National Forest). In addition, because the mining activity that results from the NOI disturbs aquatic surface in designated Coho salmon critical habitat, the Ninth Circuit held that it "may affect" Coho salmon and therefore consultation is required.

Coalition for a Sustainable Delta v. Federal Emergency Management Agency, No. 1:09-cv-02024 OWW GSA, 2011 U.S. Dist. LEXlS 92809 (E.D. Cal. Aug. 19, 2011) — The Federal Emergency Management Agency (FEMA) raised several defenses to the Plaintiff's argument that it was required to consult with NMFS due to the effects of its actions pursuant to the National Flood Insurance Plan (NFIP) on listed salmonid species in the Sacramento-San Joaquin Delta. (FEMA administers the NFIP pursuant to the National Flood Insurance Act (NFIA). 42 U.S.C. § 4011(a).) In addition to the statute of limitations and exhaustion of administrative remedies, FEMA argued that: (1) its procedure for issuing Letter of Map Changes (LOMCs), which revise or update Flood Insurance Rate Maps and may allow landowners to obtain flood insurance for their properties, does not trigger a duty to consult because it has no effect on listed species; and (2) FEMA's issuance of flood insurance is a non-discretionary act that is not subject to Section 7(a)(2).

Regarding LOMCs, FEMA argued that the various types of individual mapping actions are "environmental neutral" and do not "authorize, fund, or carry out" any projects that might have some future effect on listed species. Instead, FEMA suggested that the appropriate targets for ESA litigation are the private individuals and local and state jurisdictions that actually complete projects which are independently required to comply with the ESA. Plaintiffs maintained that FEMA's mapping actions encourage communities and developers to use fill or build levees to obtain LOMCs that remove the covered properties from a category that would not permit landowners to obtain flood insurance. Based on a 2006 FEMA Biological Assessment that discussed agency funding of changes required to elevate damaged buildings in floodplains and the potential for effects to salmonids, the court denied FEMA's request for summary judgment, concluding that a dispute exists about whether FEMA's mapping activities indirectly cause development to occur in NFIP participating areas, with resultant effects on listed species. The court agreed with FEMA that issuing flood insurance under the NFIP is a "non-discretionary act" that does not trigger Section 7 consultation. Relying on NFIA's text and regulations, the court reasoned that the law required the agency to issue flood insurance to qualified applicants that met the eligibility criteria and that FEMA lacked discretion. The parties settled this suit on March 8, 2012, with FEMA agreeing to request Section 7 consultation with NMFS and USFWS.

Consultation is required if the proposed agency action "may affect" a listed species, even if the effects are "highly unlikely."

Colorado Environmental Coalition v. Office of Legacy Management, No. 08-cv-01624-WJM-MJW, 2011 U.S. Dist. LEXIS 120310 (D. Colo. Oct. 18, 2011) — Plaintiffs alleged that the US Department of Energy (DOE) violated the ESA by granting uranium and vanadium mining leases on federal lands in Colorado. Plaintiffs claimed that DOE failed to consult with USFWS regarding the lease's potential effects on four endangered species of fish in the Colorado River downstream. Noting that the record included DOE's determination that the lease program was "highly unlikely" to impact endangered species in the river and that the threshold for consultation ("may affect") is low, the court rejected DOE's argument that it was not required to consult because the program would have "no effect" on the species. Reasoning that ESA requires consultation at the "earliest possible time," the court held that DOE acted arbitrarily and capriciously by failing to consult with USFWS prior to or immediately following the issuance of the Environmental Assessment (EA) for the program. The court refused to find harmless error given that the EA was issued in 2007, consultation had not occurred as of June 2011, and DOE had meanwhile issued 31 leases, approved five exploration plans (with boreholes already drilled), and approved several plans pursuant to which reclamation had already been completed.

Section 7: Reinitiation of Consultation

Defenders of Wildlife v. Bureau of Ocean Energy Management, 684 F.3d 1242 (11th Cir. 2012) — The Bureau of Ocean Energy Management (BOEM) is the federal agency entrusted with federal offshore oil and gas leasing, exploration, and development. The Outer Continental Shelf Lands Act sets out a four-step process: (1) preparing the leasing program; (2) lease sales; (3) lessees' exploration; and (4) development and production. This challenge, which involved BOEM's review and approval of an exploration plan to

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BiOps Validity Issue

conduct drilling in the Gulf of Mexico, arose shortly after an offshore drilling rig (the Deepwater Horizon) suffered a blow out and ultimately discharged several million gallons of oil into the Gulf of Mexico. Based on the magnitude and duration of the Deepwater Horizon spill, BOEM voluntarily reinitiated Section 7 consultation with USFWS and NMFS. The Services had both concluded in 2007 that the exploration, development, and production activities in the area at issue were not likely to jeopardize threatened or endangered species or adversely modify critical habitat. Based on the request to reinitiate consultation and a significant gap between the assumptions underlying the 2007 BiOps and the Deepwater Horizon reality, Plaintiffs challenged the validity of both BiOps. Finding no precedent for the Plaintiff's argument that a request to reinitiate meant that the previous BiOps were invalid, the court reasoned that if the reinitiated consultation revealed a need to halt activities, BOEM could do so promptly.

Section 9 Litigation

Section 9 provides for governmental liability where an agency permits conduct that results in the "take" of a listed species.

Agency Conduct

The Aransas Project v. Shaw, 2011 WL 6033036, No. C-1O-75 (S.D. Tex. Dec. 5, 2011) — Plaintiffs alleged that the Texas Commission of Environmental Quality's failure to adequately manage freshwater flows into the San Antonio Bay ecosystem caused a taking of Whooping Cranes, an endangered species, by increasing salinity and decreasing the cranes' food and water supply, which resulted in the death of 23 cranes. Plaintiff requested declaratory and injunctive relief to prevent future takings, and the defendants moved for summary judgment. The defendants argued that ESA Section 9 does not extend to suits against regulators for takings, that the Plaintiff's requested relief was outside the scope of the ESA, and that regardless, Plaintiff did not demonstrate that a taking occurred. The court rejected all three arguments and denied the defendants' motion, holding that Plaintiff raised genuine issues as to whether a taking occurred.

Section 9 cases require evidence of actual take.

Concrete Evidence & Summary Judgement

Stout v. U.S. Forest Service ("USFS"), --- F. Supp. 2d --, No. 2:09-cv-00152-HA, 2012 WL 1424069 (D. Or. Apr. 24, 2012) — Plaintiffs sued the USFS for violations of the ESA, National Forest Management Act, and the Wild Free-Roaming Horses and Burros Act based on USFS's management of wild horses in the Murderer's Creek Wild Horse Territory (MCWHT) in the Malheur National Forest in eastern Oregon. Having been enjoined from allowing their cattle to graze on riverbanks in order to avoid erosion impacts to the threatened Middle Columbia River (MCR) steelhead, Plaintiffs argued that USFS was allowing too many wild horses to run free within the MCWHT, and that the wild horses were in fact causing the damage. This failure to manage the wild horse population thus caused "take" of MCR steelhead and required an injunction to enforce lower population limits in the MCWHT. The court disagreed, reasoning that concrete evidence existed that Plaintiffs' cattle damaged the riverbank and caused "take" but that Plaintiffs had not provided similar evidence with regard to damage by wild horses for summary judgment, which is generally appropriate only when there are no issues of fact.

RPA Implementation

National Wildlife Federation v. Federal Emergency Management Agency (FEMA), No. C11-2044-RSM (W.D. Wash. Apr. 12, 2012) — The new National Wildlife Federation (NWF) lawsuit did not dispute that FEMA complied with its Section 7 obligation to consult pursuant to the 2004 holding in *NWF v. FEMA*, 345 F. Supp. 2d 1151 (W.D. Wash. 2004) that: (1) FEMA had discretion in its mapping activities, amendment of the minimum eligibility criteria to qualify for flood insurance, and promotion of conservation measures through the Community Rating System; and (2) there was substantial evidence that FEMA's implementation of NFIP in the Puget Sound region "may affect" Chinook salmon.

However, NWF did dispute whether FEMA properly implemented the RPA presented in the 2008 BiOp resulting from this consultation. Arguing that failure to do so was an "irretrievable commitment of resources" and that the subsequent implementation of the NFIP automatically resulted in "take," NWF sought to enjoin FEMA from providing flood insurance, either directly or through third-party entities, for any new development project in jurisdictions with the most critical habitat and from processing certain floodplain map changes.

Injunction Standard

Under the ESA, "once a plaintiff establishes a probability of success on the merits and likely harm, the balance of hardship and the public interest require an injunction." Here, however, the court rejected the "simple logic" that FEMA's implementation of the modified NFIP automatically violated the ESA's prohibition of "take" because FEMA failed to incorporate all elements of the RPA within the relevant deadlines. Instead, the court reasoned that "[s]ince FEMA has significantly altered the manner in which it implements the NFIP in the Puget Sound region, the BiOp's conclusion that the 2008 version of the NFIP caused jeopardy to listed species is insufficient to demonstrate that the current implementation of the NFIP also is likely to cause jeopardy."

"Simple Logic"

ESA Litigation

Complexity & Science

CONCLUSION

These cases illustrate how the ESA has recently affected water quantity and water quality. The relationship is most direct in some cases, such as where the ESA required more stringent water quality standards for temperature to protect salmonids. However, the ESA can also show up in surprising situations, as with the cattle ranchers who sued under ESA to limit stream bank erosion due to wild horses. In addition to showcasing the complexity of ESA litigation, these cases also highlight the need to have science on your side, whether you are proposing mitigation measures or requesting injunctive relief. Professionals working with water quantity or water quality should remember that the ESA can support your desired outcome, but can also dramatically change your course of action.

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Drinking Water Regulation

UPCOMING EPA DRINKING WATER PROPOSALS

By J. Alan Roberson, P.E., Director of Federal Relations
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INTRODUCTION

Anticipated Regulation

While Congress is gridlocked on legislative issues, the US Environmental Protection Agency (EPA) is currently relatively busy with several national drinking water regulations.

Four major drinking water regulatory actions are anticipated to be published in 2013:

- Preliminary Third Regulatory Determination (RegDet 3);
- Proposed Perchlorate Rule;
- Proposed Long-Term Lead and Copper Rule (LT-LCR) Revisions; and
- Proposed Carcinogenic Volatile Organic Compounds (cVOC) Rule.

REGULATORY BACKGROUND

New Contaminants

The 1996 Safe Drinking Water Act (SDWA) Amendments framed two regulatory development processes for EPA. The first process is for the identification of new contaminants for potential regulation. This process starts with the development of a Contaminant Candidate List (CCL), and EPA is required by the SDWA to publish CCLs on a five-year cycle. The Third Contaminant Candidate List (CCL3) was published in 2009, and listed 104 chemicals and 12 microbial contaminants (74 FR 51850).

The next step for developing new regulations is a regulatory determination, and EPA is required to make these decisions on at least five contaminants every five years.

SDWA Criteria

The SDWA lists three criteria to be used on making these decisions:

- The contaminant may have an adverse health effect
- The contaminant occurs in public water systems at levels of health concern
- A national drinking water regulation provides a meaningful opportunity for risk reduction

Risk Reduction

EPA made the first two regulatory determinations in 2003 and 2008, and the Agency decided to not regulate 20 contaminants in these two actions because a national regulation would not provide "…a meaningful opportunity for risk reduction" as required by the SDWA (68 FR 42897, 73 FR 44251). The preliminary Third Regulatory Determinations are scheduled to be published in 2013 and are discussed in more detail below.

Drinking Water Regulation

Review Schedule

"RegDet3"

Nitrosamines

Data Gaps

Risk Assessments

Additional Candidates

Newborns & Infants Impacts

Proposed Deadlines

Life Stages Precedent

The second regulatory process is the review of existing drinking water regulations. Every six years, EPA is required to review the regulations to determine if any revisions are warranted given new health effects, analytical methods, occurrence, or treatment data. EPA has completed two Six-Year Reviews and the Third Six-Year Review is scheduled to be finalized in 2016. In the First Six-Year Review in 2003, EPA reviewed 69 regulations and decided to revise the Total Coliform Rule (68 FR 42908). In the Second Six-Year Review in 2010, EPA reviewed 71 regulations and decided to revise four standards for trichloroethylene (TCE), tetrachloroethylene (PCE), acrylamide, and epichlorohydrin (75 FR 15500).

THIRD REGULATORY DETERMINATION (RegDet 3)

EPA is expected to release the preliminary Third Regulatory Determination (RegDet 3) in early 2013. Given past historical regulatory development, the final determination will be published somewhere in the range for 13-15 months after the preliminary RegDet 3 is published. EPA will have two years after the final determinations to propose the regulation based on any final positive determination, per the Safe Drinking Water Act (SDWA) statutory language.

It is relatively certain that a positive regulatory determination will be made for nitrosamines. This decision kills two birds with one stone as it provides a second positive regulatory determination for EPA and provides a second group to be regulated under EPA's Drinking Water Strategy (Carcinogenic Volatile Organic Compounds [cVOCs] being the first; cVOCs are discussed in more detail later). Adequate health effects data is available for several nitrosamines, and adequate occurrence data is available for six nitrosamines from the Second Unregulated Contaminant Monitoring Rule (UCMR2).

However, significant data gaps exist for nitrosamine formation and control that will make defining appropriate risk management challenging, i.e., what systems would have to do to lower nitrosamine levels. Additionally, it will be challenging to demonstrate "…a meaningful opportunity for health risk reduction" as mandated by the SDWA, given the low percentage of exposure attributed to drinking water (Fristachi and Rice, 2007). The analyses of newborns and infants used in the final perchlorate regulatory determination is a likely precursor for some future analyses that show that bottle-fed newborns and infants with higher nitrosamine exposures (due to a higher drinking water/body weight ratio) for a couple of years — as opposed to the lifetime exposure used in traditional cancer risk assessments — show an increased cancer risk later in life. Therefore, EPA's analysis demonstrating "…a meaningful opportunity for risk reduction" for nitrosamines will likely be controversial.

Chlorate and strontium are also possible positive regulatory determinations, even though the occurrence data for both is a bit limited. Negative regulatory determinations are likely for several contaminants with zero or near-zero occurrence in UCMR1 and UCMR2 such as (but not limited to) disulfoton, diuron, molinate, and RDX.

PERCHLORATE

At a Senate Environment and Public Works (EPW) Committee hearing in February 2011, EPA Administrator Lisa Jackson announced that a national drinking water regulation would be developed for perchlorate, reversing the preliminary regulatory determination in 2008 (73 FR 60262). Based on a new analysis of the potential health impacts to newborns and infants with a lower body weight and higher water consumption, EPA determined that a national perchlorate regulation would provide a "…meaningful opportunity for health risk reduction" as mandated by the 1996 Safe Drinking Water Act (SDWA) Amendments. This positive regulatory determination was published in the Federal Register on February 11, 2011 (76 FR 7762). It should also be noted that this determination represents the first positive determination from a Contaminant Candidate List (CCL) since this new regulatory development process was mandated by the 1996 SDWA Amendments. As previously discussed, prior to the perchlorate decision, the agency had made 20 negative regulatory determinations off the first two CCLs, as these contaminants did not provide a "…meaningful opportunity for health risk reduction… ."

Based on the SDWA, EPA now has until February 11, 2013, to propose the perchlorate regulation. EPA has formed a panel of the Science Advisory Board (SAB) to review the scientific and technical bases for the approaches being considered to derive a Maximum Contaminant Level Goal (MCLG) for perchlorate. The SAB Perchlorate Panel met for the first time on July 18th and 19th, and one of the interesting policy issues discussed by the SAB Panel is the use of different life stages (7-day old infant, 30-day old infant, etc.) with different body weights and different water consumption than the typical 70-kg adult drinking two liters of water per day. How this is addressed in the perchlorate regulation could be precedent-setting for other future drinking water regulations.

The National Drinking Water Advisory Council (NDWAC) was also going to discuss perchlorate at a September meeting, but that meeting was recently canceled. EPA is also considering a stakeholder meeting

Drinking Water Regulation

Significant Costs

on the perchlorate regulation in fall of 2012 (probably after the SAB and NDWAC meetings), but that may not happen due to the short timeframe for the proposal of February 2013.

From a practical perspective, EPA has all of the data needed to develop this regulation as perchlorate has been on the regulatory radar screen for some time, and significant research on occurrence and treatment has been conducted over the past decade. National perchlorate occurrence data has been generated through the First Unregulated Contaminant Monitoring Rule (UCMR1) and found that, relative to other regulations, it will not impact all that many systems from a national basis. But for the impacted systems, the capital costs and the operation and maintenance costs (which are in perpetuity) are significant, given that the prospective health risk reductions are still being debated by the scientists. At this time, it is not clear what level USEPA is considering for its proposal for a perchlorate regulation.

LONG-TERM LEAD AND COPPER RULE (LT-LCR) REVISIONS

Likely Regulation

EPA is currently working on long-term revisions to the Lead and Copper Rule (LT-LCR). The Agency is likely to address several issues in its proposal that is also scheduled to be published in 2013.

EPA's upcoming Lead and Copper Rule (LT-LCR) proposal will likely address:

- Partial lead service line replacement (LSLR);
- Sample site selection;
- Tap sampling;
- Measures to ensure optimal corrosion control; and
- Public education for copper.

Effectiveness Evaluation

Partial LSLR is an issue that has been reviewed by both the Science Advisory Board (SAB) and the National Drinking Water Advisory Council (NDWAC). EPA asked the SAB to evaluate the current scientific data to evaluate the effectiveness of partial LSLR in reducing lead drinking water levels. The SAB found that the quantity and quality of the available data were inadequate to fully determine the effectiveness of partial LSLR in reducing drinking water lead concentrations. The small number of studies used in the evaluation had major limitations (small number of samples, limited follow-up sampling, lack of information about the sampling data, limited comparability between studies, etc.) for fully evaluating partial LSLR efficacy. However, the SAB still concluded that partial LSLRs do not reliably reduce drinking water lead levels in the short term (ranging from days to months) and potentially even longer. Additionally, partial LSLR was frequently associated with short-term elevated drinking water lead levels for some period of time after replacement, suggesting the potential for harm, rather than benefit during that time period. EPA is likely going to issue some recommendations to address these issues (and others) with partial LSLR, both in the context of the regulatory requirements for the LT-LCR and in typical main repair and/or replacement, i.e., when a system comes across a lead service line when repairing a main break or replacing a main.

Repair & Replacement

Blood Lead Levels

Additionally, the Centers for Disease Control and Prevention (CDC) recently changed its policy on blood lead levels for children. The CDC lowered by half the danger threshold for lead levels in children's blood. From now on, blood levels of lead exceeding 5 mcg/dL (micrograms per decilitre) will identify children "living or staying for long periods in environments that expose them to lead hazards," according to a CDC statement released on May 16th. The CDC also now states that any level of lead in the blood is a potential health hazard. While drinking water is typically not the largest source of exposure, as other sources such as paint and dust are reduced, lead in drinking water can become a bigger issue.

Sample site selection is one issue that could potentially impact all systems if EPA changes these regulatory requirements. Revising all of the LCR sampling plans and getting primacy agency approval for these revisions would be a significant effort for both systems and states.

Parameters Range

Optimized **c**orrosion **c**ontrol **t**reatment (OCCT) is another issue that EPA is closely evaluating. One potential outcome of these revisions is that the range of allowable water quality parameters may be tightened. EPA expects to publish the proposed Long-Term Revisions to the LCR in 2013. Given the historical regulatory development process, the final LT-LCR should be published in 2015.

"Lead-Free" Definition

A separate but related issue is implementation of the Reduction of Lead in Drinking Water Act (PL 111-380). On January 4, 2011, President Obama signed this bill into law and the deadline for compliance is January 4, 2014. This legislation changed the definition of "lead-free" from <8.0% lead to <0.25% lead for pipes, meters, and many other products used by water systems, plumbers, and homeowners. However, water systems need to prepare now to meet this deadline by managing their inventory of meters and other appurtenances appropriately for the balance of 2012 and through 2013. EPA held a stakeholder meeting on August 16th to solicit input from a variety of stakeholders on surrounding the implementation of this new definition of "lead-free." Meeting this deadline requires understanding the Act and the steps being taken by manufacturers, standards organizations, and EPA.

Drinking Water Regulation

Contaminant Group Regulation

TCE & PCE Targets

Unregulated eVOCs

Significant Impacts

Treatment Changes

CARCINOGENIC VOLATILE ORGANIC COMPOUNDS (cVOCs)

At the same EPW hearing in 2011, EPA Administrator Lisa Jackson also announced that Carcinogenic Volatile Organic Compounds (cVOCs) would be the first group to be regulated as part of the agency's new Drinking Water Strategy to regulate contaminants as groups as opposed to one at a time. In the fact sheet released at that time, EPA listed eight currently regulated cVOCs that would likely be included in this regulation, as well as eight unregulated cVOCs from CCL3 that could potentially be included in this regulation. This list was developed based on an initial analysis of commonalities such as health effects, analytical methods, treatment, etc., but it is not completely clear how many (or which) unregulated cVOCs will ultimately be included in this regulation.

This group regulation also links with EPA's efforts to revise the MCLs for trichloroethylene (TCE) and tetrachloroethylene (PCE) as part of its Second Six-Year Review of existing drinking water regulations (75 FR 15500). In this notice, EPA presented its analysis of the potential impacts of lowering both of these MCLs from the current standard of 5 µg/L (micrograms per liter) to 1 µg/L and 0.5 µg/L, which at this point, should be considered regulatory "targets" that EPA is seriously considering. Thus, any groundwater system that has detected either TCE or PCE (even if those detections are below the current standards) should pay attention to the development of the cVOC regulation.

EPA anticipates proposing this regulation in fall 2013 but this could slip given ongoing Agency budget issues and limited resources — again, that is why it says "maybe" on the first page as a 2013 action. EPA is planning some limited stakeholder outreach in mid-2012 timeframe. The final rule would likely be published two years after the proposal.

This regulation could take many shapes that include an MCL for the sum of cVOCs, similar to what is currently done for Total Trihalomethanes (TTHMs) and/or individual MCLs for TCE, PCE, and possibly 1,2,3-trichloropropane (TCP), or something else new and unique. However, because EPA is lacking data on occurrence and treatment for some of the unregulated cVOCs that were on its initial list, the regulatory development process for this regulation will be challenging to say the least.

CONCLUSIONS

EPA's four major regulatory actions planned for 2013 will have significant impacts for many water systems. While the results of the November election might change some of the projected schedules due to budgets and priorities, the SDWA is the law and EPA cannot ignore its statutory deadlines. So, EPA will continue to work on these drinking water regulations. All of the resultant regulations will have their own inherent complexities. Water systems should avail themselves of all of the available information during EPA's regulatory development process so that they can plan for any future treatment changes necessary to comply with the regulations that will ultimately result from these actions.

For Additional Information:
Alan Roberson, AWWA, 202/ 326-6127 or ARoberson@awwa.org

Reference

Fristachi, A. and Rice, G., 2007. *Estimation of the Total Daily Oral Intake of NDMA Attributable to Drinking Water.*Jour. Water and Health, 05.3, pp. 341-355.

J. Alan Roberson is currently the Director of Federal Relations for the American Water Works Association (AWWA), the largest technical and educational water association. He and his staff work closely with Congressional staff on water legislation, with the Environmental Protection Agency (EPA) staff on the development of national drinking water regulations, and with the Department of Homeland Security (DHS) on the development on national water security policy. He is part of the Senior Staff management team at AWWA that develops financial and operational strategies. He has been with AWWA for 21 years and has 12 years consulting engineering experience. In 2009, he was appointed to the Board of Directors of Fairfax Water (the largest water utility in Virginia with revenues of over $140 million) and serves on the Finance and Strategic Planning Committees, and as Chair of the Water Quality and Supply Committee.

Mr. Roberson has published over 20 papers in peer-reviewed journals, four book chapters, and serves as a peer reviewer for several journals. He regularly conducts interviews with trade press and popular media such as Consumer Reports and USA Today. He has a Bachelor's in Civil Engineering from Georgia Tech and a Master's in Civil Engineering from Virginia Tech. He is also a registered Professional Engineer in Virginia.

WATER BRIEFS

WATER PRIVATIZATION US
WATER & SEWER SERVICES TAKEOVER

On August 22, Food and Water Watch issued a report entitled "*Private Equity, Public Inequity: The Public Cost of Private Equity Takeovers of U.S. Water Infrastructure*." According to the Report investment bankers and other major financial players are increasingly interested in taking control of water and sewer services across the US. Private equity vehicles are funded with more than $185 billion for infrastructure worldwide. Although most deals in the US water utility market have involved existing private sector companies, a number of fund managers anticipate that the ongoing fiscal crisis will drive some governments to privatize their water infrastructure. To make that prediction a reality, major financial interests are backing various government proposals that facilitate privatization and private financing of public infrastructure.

There have been only half a dozen sizable private equity takeovers of water and sewer services in the US (see Report), but four new deals were nearing consummation or awaiting regulatory approval in 2012: Rialto's (CA) water and sewer systems (30-year concession); Utilities, Inc., a private water company serving 290,000 customers in 15 states; Bayonne Municipal Utilities Authority's (NJ) water and sewer systems through a 40-year concession; and the Lower Colorado River Authority's (TX) sale of 18-20 water and sewer systems.

The Report concludes that due to "the risks and costs associated with privatization, governments should not transfer control of their water and sewer services to investment bankers or other private interests." It goes on to suggest that cash-strapped communities can instead explore public-public partnerships to reduce the cost and enhance the performance of their public water and sewer services, with two or more public section water utilities joining forces on a not-for-profit basis to leverage their shared capacities — pooling resources, buying power and technical expertise to improve service and reduce costs.

The other option suggested is for the federal government to support public sector utilities by providing a dedicated source of funding for the Drinking Water and Clean Water State Revolving Funds and by reauthorizing the Build America Bonds program.

The Report provides a short litany of the key problems it sees with private equity takeovers. Although short, the Report contains a substantial reference section that should be of interest to readers.

For info: Report at: http://documents.foodandwaterwatch.org/doc/PrivateEquityReport.pdf

GROUNDWATER RESERVES CA
WATER SUPPLY & CLIMATE CHANGE

The California Energy Commission funded a new study prepared by the University of California, Santa Cruz, that recommends creating groundwater reserves to address water supply problems during extreme drought. The study is entitled, "*Climate Change and Water Supply Security: Reconfiguring Groundwater Management to Reduce Drought Vulnerability*" (Publication Number: CEC-500-2012-017). The key issue that the research addresses is how to *proactively* adapt to drought.

The 80-page study found that periodic droughts — projected to become more frequent and severe with climate change — present a significant planning challenge for California's water agencies. The research examined approaches to reducing drought vulnerability, focusing on five water agencies on California's north and central coast that rely on local and regional sources of water.

Curtailing water use is the principal response to drought. In contrast, this project highlights an important but underutilized proactive adaptation to improve water supply security during drought: the development of locally based groundwater drought reserves. While this approach represents an obvious solution in principle, it is uncommon to find it in practice, and this research provides insight into: (1) motivating factors, (2) legal barriers and opportunities, (3) tools, and (4) policy options to support increased drought resilience and the development of drought reserves.

"Our Proposition" was set forth in the introduction to the White Paper: "*We propose that the development and maintenance of locally based groundwater drought reserves, an underutilized and proactive adaptation, can improve water supply security during extreme droughts*. The emphasis is on groundwater recharge, storage, and the establishment of high-quality buffers to reduce drought vulnerability. Recovery of water for short-term demand can occur so long as the reserve is maintained. Moreover, given the decreasing reliability of imported water, our project focuses on the use of regional and local water sources to enable a community to develop its drought reserve supply."

For info: White Paper at: www.energy.ca.gov/2012publications/CEC-500-2012-017/CEC-500-2012-017.pdf

NEVADA PIPELINE NV
LAS VEGAS GROUNDWATER SYSTEM

The US Bureau of Land Management (BLM) announced the availability of the Clark, Lincoln, and White Pine Counties Groundwater Development and Utility Right-of-Way Project Final Environmental Impact Statement (EIS) in the August 3, 2012 Federal Register. The document analyzes the Southern Nevada Water Authority (SNWA) proposal for a system of regional water facilities and pipelines to transport water to the Las Vegas Valley.

BLM's action is to either grant or deny the request for rights-of-way (ROW) across public land. BLM will issue a Record of Decision after a 60-day availability of the final EIS. The preferred alternative identified in the EIS is defined as Alternative F with a provision that no more groundwater than what the Nevada State Engineer granted on March 22, 2012 would be available for pumping in future.

The project as envisioned by the preferred alternative would provide for the development of the first phase (main conveyance pipeline and associated facilities) of a multi-year project which would eventually deliver groundwater from Spring, Cave, Dry Lake, and Delamar hydrographic basins to the Las Vegas area. Although water rights, pumping rates, volume of water proposed for transport to the Las Vegas Valley, and the point of use of water proposed for transport across public land is outside the jurisdiction of the BLM, these issues are included in the EIS. Water rights and pumping rates are under the purview of the Nevada State Engineer. This EIS does not address the permitting or authorization of water rights. Water distribution and use associated with the importation of water in the Las Vegas Valley are addressed by local and regional planning agencies in accordance with Nevada Revised Statutes.

WATER BRIEFS

The final EIS (under the preferred alternative) addresses the construction and operation of a system of regional water facilities which include up to 263 miles of a buried water pipeline; 280 miles of 230 kilovolt (kV), 69 kV and 25 kV overhead power lines; six electrical substations; three pressure reducing facilities; two pumping stations; five regulating tanks; a 40 million-gallon-per-day buried storage reservoir; and a 165 million-gallon-per-day water treatment facility.

The Center for Biological Diversity (CBD) refers to the plan to siphon more than 37.1 billion gallons of groundwater per year from at least four valleys in central Nevada and pump it 300 miles to the Las Vegas Valley as an "epic environmental disaster" in the making. CBD pointed out that the "impact statement discloses that more than 137,000 acres of wildlife habitat will be permanently destroyed or changed because of the lowering of groundwater tables — by up to 200 feet in many areas." Other impacts "…disclosed in the BLM's impact statement…include ground-level subsidence in excess of five feet on over 240 square miles and tens of thousands of tons of new dust generated from dewatered and denuded lands." CBD also found fault with the BLM's assumption that SNWA will have adequate funds available to conduct the monitoring and successfully mitigate damage.

For info: JoLynn Worley, BLM, 775/ 861-6515, jworley@blm.gov; electronic version of the document at www.blm.gov/5w5c; Rob Mrowka, 702/ 249-5821 or rmrowka@biologicaldiversity.org

GROUNDWATER CLEANUP NM

PCE REMOVAL

On August 23, officials from EPA, City of Las Cruces, Doña Ana County and the New Mexico Environment Department celebrated the opening of a water treatment facility in the City to remove contaminants from groundwater. The new facility will remove the chemical perchloroethylene, commonly known as PCE, from groundwater in the area known as the Griggs and Walnut Groundwater Plume Superfund site (Plume Site). PCE is a man-made substance widely used for dry cleaning fabrics and textiles and for metal degreasing operations.

The Plume Site is centered within the City and is approximately 1.8 mile by one-half mile in size. Four municipal drinking water supply wells were impacted by the site but through the City's blending programs, PCE levels were kept below the maximum contaminant level established by the Safe Drinking Water Act or taken off line. The water treatment facility will utilize an air stripper to expose contaminated groundwater to oxygen which dissipates the PCE. The cleansed water is then suitable for drinking. The $5.2 million project to date is jointly funded by the City of Las Cruces and Doña Ana County.

For info: Dave Bary or Jennah Durant, EPA, 214/ 665-2200, r6press@epa.gov, or www.epa.gov/aboutepa/region6.html

ENVIRONMENTAL FLOWS TX

TCEQ APPROVES NEW PERMIT RULES

On August 8th, the Texas Commission on Environmental Quality (TCEQ) approved rules for "environmental flows" for surface water on several Texas rivers that were intended to help ensure sufficient water flows in the rivers and into the bays by placing limits on new water rights permits. The rules cover the Guadalupe, San Antonio, Mission, Aransas, Colorado and Lavaca rivers and the San Antonio, Matagorda and Lavaca bays.

As TWR went to print, TCEQ's website did not contain information regarding the approval of the rules. Environmental groups have expressed displeasure, stating the rules fall short of protecting environmental flows in the Guadalupe, San Antonio, Mission and Aransas rivers and the San Antonio Bay system. The Environmental Defense Fund (EDF) and the National Wildlife Federation (NWF) complained that there was flawed modeling by TCEQ in developing the initial rule proposal. EDF and NWF asserted that "following staff's recommendation, TCEQ Commissioners reduced environmental protections far below the levels recommended by the region's stakeholder committee in an apparent attempt to minimize effects on future water development" and that "TCEQ failed to capitalize on the work of the stakeholders, who had struck a careful balance between future water supply needs and environmental protection."

The Guadalupe-Blanco River Authority (GBRA), by contrast, supported TCEQ's proposed rules and noted in their August 2012 publication that the "stakeholders, with the exception of GBRA, the City of Victoria and the City of New Braunfels, submitted e-flow recommendations to [TCEQ] that failed to meet the SB-3 requirement of balance "in conjunction with other factors, including the present and future needs for water for other uses related to water supply planning." Calling their approach a "common-sense approach to managing water" GBRA maintains that "[R]estricting existing surface water permits is not the way to get a project done. The rules proposed by TCEQ, which also understands the need for balance and if sensibly refined, would allow the development of badly needed new water supplies without penalizing a growing population."

EDF and NWF's article went on to state that "TCEQ also adopted a more reasonable set of rules for the Colorado and Lavaca rivers and Matagorda and Lavaca bays" and "for this region, TCEQ adhered much more closely to unanimous stakeholder committee recommendations."

For info: Ron Ellis, TCEQ, 512/ 239-1282 or website: www.tceq.texas.gov/permitting/water_rights/eflows/rulemaking; EDF Blog at: http://blogs.edf.org/texaswatersolutions/2012/08/10/tceq-rules-fail-to-adequately-protect-regions-rivers-and-bays/; GBRA publication: www.gbra.org/documents/publications/riverrun/2012/summer.pdf

STOCKPOND PERMITS CA

ENFORCEMENT EFFORT BY WATER BOARD

Stockponds or reservoirs constructed after 1914 must have a permit, license or registration from the California State Water Resources Control Board (Board) if they divert water from a stream. A recent water rights enforcement effort by the Board has revealed that many reservoirs, including stockponds, may be out of compliance with the state Water Code. During July and August, the water board sent hundreds of letters to landowners in Humboldt, Marin, Mendocino, Napa and Sonoma counties informing them that reservoirs have been identified on their property for which the Board has no record. This enforcement effort will move quickly to other parts of the State.

The new enforcement effort appears tied to concerns for protected fish and the overall increased pressure on all water resources. Recent legal and technological changes also effect this enforcement effort. First, the 2009 California Legislature added significant penalties for failing to file

WATER BRIEFS

a Statement of Water Diversion and Use, and authorized the addition of 25 new enforcement personnel to enforce this and other requirements of the Water Code. Second, technological advancements in mapping aerial imagery made it relatively simple to find reservoirs, determine the owner of the parcel where they are located, and then determine whether the Board has a record of that diversion. Any member of the public can conduct a similar investigation, using Google Earth and reviewing the Electronic Water Rights Information Management System, available on the Board's website.

The letters from the Board explain that any surface water diversion initiated after 1914 that does not have a permit, license, or registration is unauthorized. Failure to have such authorization is considered a trespass against the State and is subject to a $500 fine for each day the unauthorized diversion or use occurs. The vast majority of reservoirs and stockponds were constructed after 1914 and it appears that there are a significant number that may not have the proper authorization.

Failure to file a Statement of Water Diversion and Use with the Water Board could result in a $1,000 fine. Failure to file a statement within 30 days of notification by the board subjects the water user to fines of $500 for each day the notice is late. Anyone with a reservoir or stockpond subject to Board jurisdiction must make certain to comply with both requirements. While there are circumstances where a reservoir or stockpond may not be subject to water board jurisdiction — for example, sheet flow ponds, groundwater storage or wastewater ponds — these are the few exceptions. The process for bringing reservoirs or stockponds into compliance is to submit a Statement of Water Diversion and Use within 30 days of the date of the letter. Within 60 days, the landowner should inform the Board of what actions will be taken to correct any unauthorized diversion of water. Both steps must be taken to bring a pond into compliance.

Additional information is available on the California Farm Bureau Federation website (see below).
For info: Jack Rice, Associate Counsel for the California Farm Bureau Federation (CFBF), jrice@cfbf.com or www.cfbf.com/issues/. This brief is a reprint of part of an article by Mr. Rice; credit is given to CFBF for its use.

FISH CONSUMPTION RATE WA

ECOLOGY TECHNICAL DOCUMENT

The Washington Sate Department of Ecology (Ecology) released an update to a technical document that evaluates available data on fish consumption by Washington residents. The public is invited to review and comment on the *Fish Consumption Rates Technical Support Document* through October 26.

Ecology is working to accurately identify how much fish residents eat so that protective standards may be set for water quality and in-water sediments.

The revised technical document focuses on scientific and technical issues, and removes perceived regulatory decisions — including a previously recommended range for fish consumption rates. Decisions on how to use the data will be part of the formal public regulatory process of revising the State's surface water quality standards with human health criteria, which will include a fish consumption rate. The revisions also add more information about fish consumption and exposure to contamination faced by both the general and recreational fishing population.

The second draft of the Fish Consumption Rates Technical Support Document is on Ecology's website: www.ecy.wa.gov/toxics/fish.html. The document may be modified based on public comments. Ecology expects to finalize the technical support document in late fall. Staff will hold technical meetings (TBA) to discuss the draft document in the next few months.
For info: Ecology website at: www.ecy.wa.gov/toxics/fish.html

BAY DELTA ACTION PLAN CA

EPA RELEASES PLAN

The US Environmental Protection Agency (EPA) released an Action Plan (Plan) on August 28 that proposes seven measures for improving water quality, restoring aquatic habitat, and improving the management of the San Francisco Bay Delta Estuary. The release of the Action Plan follows the agency's analysis concluding that existing federal and state water quality programs are not adequately safeguarding the ecosystem.

The Bay Delta is the hub of California's water distribution system, providing drinking water to 25 million people, sustaining irrigation for 4 million acres of farmland, and supporting 750 different species of plants, fish, and wildlife. According to EPA, the health of the ecosystem has been degraded over time by many factors, including the destruction of rivers and wetlands; the diversion of freshwater flows by federal and state water projects; the discharge of heavy metals, pesticides, and nutrients; and the invasion and spread of non-native weeds and animals. Fish populations have dwindled, and water supplies critical to public health and agriculture are at risk.

The Plan prioritizes actions to be pursued in partnership with the State Water Resources Control Board, the Regional Water Boards for the Central Valley and San Francisco Bay, the California Department of Pesticide Regulation, and numerous other state and federal agencies: by 2013, propose a standard to curb selenium discharges from cities, farms, and oil refineries; by 2013, achieve organophosphate pesticide water quality goals in Sacramento County urban streams; by 2014, set new estuarine habitat standards, including salinity, to improve conditions for aquatic life; by 2017, establish a monitoring and assessment program for water quality in the Delta; ensure that EPA's pesticide regulation program more fully considers the effects that pesticides have on aquatic life; restore and rebuild wetlands and floodplains to sequester drinking water contaminants, methylmercury, and greenhouse gases and make the Delta more resilient to floods, earthquakes, and climate change; and support the development and implementation of the Bay Delta Conservation Plan.
For info: Plan available at: www.epa.gov/sfbay-delta/actionplan.html; info on CWA at: http://water.epa.gov/action/cleanwater40c/

COMPLIANCE ASSISTANCE AZ

SMALL COMMUNITY PROGRAM

The Arizona Department of Environmental Quality (ADEQ) has announced that the Town of Taylor in Navajo County is the most recent municipality to participate in ADEQ's statewide program to help communities comply with state and federal environmental regulations. ADEQ began its Small Communities Environmental Compliance Assistance Program in 2007 for small cities and towns and special water and wastewater districts to sustain compliance with state and federal environmental laws.

As part of the program, Taylor agrees to develop a Small Community Environmental Protection Plan

WATER BRIEFS

(SCEPP). In addition to developing and implementing a SCEPP, Taylor agrees to disclose known environmental violations, request compliance assistance before enforcement actions begin, participate in a compliance evaluation to identify violations, and promptly correct known violations. After satisfying the above conditions, the town will be eligible for up to a 100 percent penalty reduction if it has future environmental violations.

The project was funded by a $12,000 grant from the Environmental Council of States (ECOS) for the communities to develop SCEPPs to improve compliance. Guidance materials, including a comprehensive manual, have been prepared to train small communities on environmental requirements and help with SCEPP development.

For info: Mark Shaffer, ADEQ, 602/771-2215 or www.azdeq.gov/function/compliance/smallcomm.html

WATER MARKETS **WEST**

PRICES DECREASE AGAIN

WestWater Research's Water Rights Price Index (WRPIx) estimates annual changes in the general market price level for water rights in the West's most active market regions. For 2011, the WRPIx is down nearly 18% in the West, a decrease that represents the third consecutive year of falling water right prices, based on data on water right sales and leases through 2011.

The 445 point decline in the WRPIx brings the index back down to 2005 levels. WestWater's Matt Payne attributes the 2011 decrease to several factors, including "a wet year in California leading to low spot market prices, continuing depressed real estate market conditions in Nevada and New Mexico, and temporary market exit of high value buyers on Colorado's Front Range." Despite falling in 2011, the WRPIx continues to outperform the Case-Shiller Home Price Index. The WRPIx also indicates that water rights are uncorrelated with the Dow and S&P 500, measures of price changes for more traditional public equity investments. Since 2002, the WRPIx has shown upside volatility, with any downward movements being relatively modest.

For info: WestWater Research at: www.waterexchange.com (News> WRPIx 2011 Update)

NONPOINT SOURCE **TX**

RESTORATION SUCCESS

High levels of E. coli bacteria in Buck Creek, primarily from wildlife, livestock and humans, prompted the Texas Commission on Environmental Quality (TCEQ) to add the creek to the Clean Water Act (CWA) section 303(d) list of impaired waters in 2000. Extensive outreach led to voluntary implementation of **b**est **m**anagement **p**ractices (BMPs) by landowners, which contributed to reductions in bacteria loading. As a result, TCEQ removed Buck Creek from the State's list of impaired waters in 2010.

Buck Creek's watershed covers 289 square miles within the Red River Basin in the southeastern corner of the Texas Panhandle near the Oklahoma state line. The creek is a small stream surrounded by agricultural land, with uses primarily devoted to row crops and grasslands. Monitoring data indicated that wildlife (including feral hogs) was the largest contributor of E. coli bacteria.

Beginning in May 2004, Texas AgriLife Research personnel conducted water quality monitoring in Buck Creek to identify potential pollutant sources.

At a Texas Watershed Steward Program workshop held in the Buck Creek watershed in 2008, nearly 61% of the participants indicated that they planned to adopt BMPs. A follow-up survey six months later indicated that 80% of respondents had adopted BMPs on their property. Local landowners voluntarily implemented a number of agricultural BMPs to support grazing management, including: installing off-stream alternative watering sources for livestock (can reduce in-stream bacteria levels by 50–85 percent by making upland areas more desirable and drawing livestock away from riparian areas); implementing prescribed grazing systems to adjust stocking rates and grazing intensity; and installing cross-fencing to manage livestock distribution and access to riparian areas.

In collaboration with landowners, TSSWCB certified nine water quality management plans that implemented prescribed grazing on 29,630 acres. The US Department of Agriculture Natural Resources Conservation Service developed conservation plans that include prescribed grazing on an additional 4,520 acres. Landowners also collaborated with the USDA Wildlife Services to conduct feral hog (invasive species) abatement and removal activities. Wildlife Services performed aerial control on 45,867 acres, removing 258 hogs.

For info: http://water.epa.gov/polwaste/nps/success319/tx_buck.cfm

UTAH & TRIBAL MOU **UT**

NEGOTIATION TO QUANTIFY RIGHTS

At the 7th Annual Native American Summit in Salt Lake City on August 15, Governor Gary Herbert of Utah and Confederated Tribes of the Goshute Chairman Ed Naranjo signed a Memorandum of Understanding (MOU) regarding water rights. Federal case law and Indian treaties have established water rights for tribes. "However, we need to quantify the amount of our federally reserved water rights to make them meaningful," Naranjo said. "Without a specific amount of water, our rights are meaningless."

The MOU states that both parties will enter into voluntary discussions to quantify the tribe's water rights and both parties agree to use litigation only as a last resort and to work toward an agreement.

The Goshute Tribes' need to quantify their water rights takes on added importance as part of the Tribes' opposition to the Southern Nevada Water Authority's (SNWA's) groundwater development and pipeline project. The Joint Inter-Tribal Resolution (June 5, 2011) opposing SNWA's project includes a provision noting that "groundwater is almost the only, and by far the most essential, supply of water available to the Tribes, the farmers, hunters, ranchers and all residents of the neighboring communities, and the plant and animal life within the Great Basin… ."

For info: Goshute Tribe, http://www.goshutewater.org/index.php/june-utl-resolution.html, Governor Herbert, http://www.utah.gov/governor/index.html

CALENDAR

September 18-20 MT
Wetland Restoration & Management with a Focus on Monitoring for Success (Course), Bozeman. MSU. Sponsored by Montana Water Ctr. & Montana DEQ. For info: http://watercenter.montana.edu/training/wetlands/

September 19 AZ
WATERSHED Film Screening & Panel Discussion, Tucson. Loft Cinema. Sponsored by Water Resources Research Ctr. For info: http://wrrc.arizona.edu/

September 19-20 OR
Sustainable Stormwater Symposium, Portland. World Trade Ctr. Sponsored by Oregon Section - American Society of Civil Engineers Environment & Water Resources Group and Oregon Chapter of American Public Works Ass'n. For info: www.stormwatersymposium.org/

September 19-21 ID
East or West, Water Defines Us All: 2012 Pacific Northwest Chapter - Society of Wetland Scientists Conference, Boise. The Grove Hotel. For info: www.sws.org/regional/pacificnw/nat_meetings.html

September 21-23 OR
RiverFest - Celebrate the Willamette!, Portland. Cathedral Park. For info: www.portlandriverfest.org/

September 23-26 TN
Ground Water Protection Council Annual Forum + Water Pro Conference (National Rural Water Ass'n), Nashville. Gaylord Opryland Resort. For info: www.waterproconference.org

September 24-25 ID
Idaho Water Law Seminar, Bosie. Owyhee Plaza Hotel. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

September 24-26 CO
Fifty Years of Watershed Modeling Conference, Boulder. NCAR, 3038 Center Green Drive. For info: www.engconfintl.org/12ao.html

September 25 AZ
Goverance Measures to Effectively Manage Groundwater Storage (Brownbag), Tucson. WRRC, 350 N. Campbell Ave. Sponsored by Water Resources Research Ctr. For info: Jane Cripps, WRRC, 520/ 621-2526, jcripps@cals.arizona.edu or http://ag.arizona.edu/azwater/

September 27 WA
Water Right Transfers Conference, Seattle. WA State Convention Ctr. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

September 28 OR
New Water Year Celebration, Corvallis. OSU. For info: http://water.oregonstate.edu/

September 29-Oct. 3 LA
WEFTEC: 85th Annual Water Environment Federation Exhibition & Conference, New Orleans. Morial Convention Ctr. For info: Water Environment Federation, 800/ 666-0206 or WEFTEC website: www.weftec.org

October 1 OR
Oregon Stormwater Conference, Portland. For info: Environmental Law Education Center: www.elecenter.com/

October 1-2 ID
Pacific Northwest Climate Science Conference, Boise. Boise Center. Sponsored by EPA Region 10, Climate Impacts Group (UW), Dept. of Geography (UI), Idaho Water Resources Research Institute, Oregon Climate Change Research Institute (UO), USFWS (Pacific Region Science Applications); University of Idaho. For info: http://pnwclimateconference.org/

October 2-4 MT
Montana Water School, Bozeman. MSU. Conducted by MDEQ, Montana Environmental Training Center, Montana Water Center & MSU Civil Engineering Dept. For info: http://watercenter.montana.edu/conferences/water_school.htm

October 3-5 NV
2012 WaterSmart Innovations Conference & Exposition, Las Vegas. South Point Hotel. Presented by Southern Nevada Water Authority & Others. For info: www.watersmartinnovations.com/index.php

October 4 WEB
Water Quality Standards 101 - Virtual Academy Webinar, WEB. Presented by EPA. For info: http://water.epa.gov/learn/training/standardsacademy/index.cfm

October 4-5 TX
Water & Energy: Upstream Supply & Demand Strategies Summit, Houston. The Houstonian Hotel. Sponsored by WestWater Research & American Water Intelligence. For info: www.waterrightstrading.us/

October 4-5 CA
ACWA's CLE for Water Professionals: Risk Management in the 21st Century, Napa Valley. Napa Valley Marriott. For info: Ass'n of California Water Agencies, www.acwa.com/events/acwa-continuing-legal-education

October 5 OR
Environmental Law: Year in Review Annual CLE, Troutdale. McMenamins Edgefield. Presented by Environmental & Natural Resources Section - Oregon BAR. For info: http://osbenviro.homestead.com/files/EnviroNatLaw_12CLE.pdf

October 10 WA
Wetlands in Washington Seminar, Seattle. WA State Convention Ctr. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

October 10-12 MT
Montana's Water Resources: Water Management in the Face of Uncertainty - 2012 Annual Montana Water Conference, Fairmont Hot Springs. Fairmont Hot Springs Resort. Organized by MT AWRA & Montana Water Center; Field Trip on 10/10. For info: http://state.awra.org/montana/

October 10-12 MT
4th Annual Symposium on Columbia River Governance, Polson. KwaTaqNuk Resort. Convened by Universities Consortium on Columbia River Governance, with Tribes & First Nations of the Columbia River Basin. For info: Molly Smith, U of Montana, 406/ 552-0979 or molly.smith@umconnect.umt.edu

October 10-12 TX
WSWC Fall (170th) Council Meeting, San Antonio. Holiday Inn Riverwalk. Western States Water Council Meeting. For info: www.westgov.org/wswc/170mtg.html

October 11-12 UT
Utah Water Law Conference, Salt Lake City. Marriott Downtown at City Creek. For info: CLE International, 800/ 873-7130 or www.cle.com/

October 12 OR
Balancing Investor Protections, the Environment, and Human Rights - 17th Annual Lewis & Clark Law School Forum, Portland. Lewis & Clark Law School - Wood Hall. For info: https://law.lclark.edu/live/files/12081-2012-fall-forum-brochure

October 12-13 OR
Hydrophiles of OSU Field Trip & Float, Maupin. Deschutes River. Tour of Round Butte Dam Water Withdrawal Facility & River Float. For info: jordan.beamer@gmail.com

October 12-18 CA
7th Biennial Bay-Delta Science Conference - Ecosystem Reconciliation: Realities Facing the San Francisco Estuary, Sacramento. Convention Ctr. For info: http://scienceconf.deltacouncil.ca.gov/

October 13-20 CO
Climate Research & Leadership Network for New PhDs Symposium, Colorado Springs. La Foret Conference Ctr. For info: http://disccrs.org/disccrsposter.pdf

October 14-17 OK
20th Annual Nonpoint Source Monitoring Workshop - Secrets of Success: Making the Most of Available Resources, Tulsa. DoubleTree Hilton at Warren Place. Sponsored by US EPA & Oklahoma Conservation Commission. For info: https://npsmonitoring.tetratech-ffx.com/index.htm

October 15-17 OH
Urban Water Sustainability Leadership Conference, Cincinnati. For info: Lorraine Loken, UWS, 202/ 533-1819, lloken@cwaa.us or www.cleanwateramericaalliance.org

October 16-17 LA
Gulf Coast Groundwater Issues Conference, Baton Rouge. Marriott Hotel. For info: NGWA: www.ngwa.org/Events-Education/conferences/5010/Pages/5010oct12.aspx

October 17 OR
Regulatory Takings Seminar, Portland. World Trade Ctr. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

October 17 CA
Litigating Property Rights Cases: Eminent Domain, Takings & Due Process Claims (Seminar), Los Angeles. Marriott LA Downtown. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

October 17-19 CA
Northern California Tour (Field Trip), Sacramento. Sponsored by Water Education Foundation. For info: www.watereducation.org/toursdetail.asp?id=841&parentID=821

October 17-20 CA
Dividing the Waters Annual Conference: Making the Connection: Surface & Groundwater, Davis. UC Davis King Hall School of Law. Note: Judges Only. For info: Susan Conyers, DTW, 775/ 327-8213, conyers@judges.org or www.judges.org/dividingthewaters/news.html

October 18-19 LA
Urban Water Resources: Stormwater Management, Groundwater Recharge & LID Course, Baton Rouge. Sponsored by National Ground Water Ass'n. For info: www.ngwa.org/Events-Education/Pages/

October 19 WA
Ecological & Environmental Mitigation Banking Seminar, Seattle. Edgewater Hotel. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

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CALENDAR

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October 19 CO
Colorado WaterWise 4th Annual Water Conservation Summit, Denver. Police Protective Association, 2105 Decatur Street. For info: www.coloradowaterwise.org

October 20-24 FL
Coastal & Estuarine Habitat Restoration 6th National Conference: Restoring Ecosystems, Strengthening Communities, Tampa. Sponsored by Restore America's Estuaries. For info: http://program.estuaries.org/

October 23-25 ID
2012 Western States Source Water Protection Forum, Sun Valley. Sponsored by IDEQ. For info: Amy Williams, IDEQ Source Water Program Coordinator, 208/ 373-0115 or amy.williams@deq.idaho.gov

October 25-26 CA
California Water Law Conference, San Francisco. Hotel Nikko. For info: www.deq.idaho.gov/assistance-resources/conferences-trainings/2012-western-states-source-water-protection-forum.aspx

October 26 OR
Energy Efficiency: The Next Generation Conference, Portland. U of O's White Stag Block. Sponsored by CUB Policy Ctr. & UO School of Law. For info: http://cubpolicycenter.org/conference

October 26 HI
Climate Change Impacts in Hawaii Seminar, Honolulu. YMCA, 1040 Richards Street. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

October 26-28 WA
6th Graduate Climate Conference, Seattle. UW's Park Forest Conference Ctr. For info: www.atmos.uw.edu/gcc/GCC_Home.html

October 27 OR
Celebration of Oregon Rivers (10th Annual), Portland. Ambridge Event Ctr. Sponsored by WaterWatch of Oregon. For info: Michele, WW, 503/ 295-4039 x2, michele@waterwatch.org or www.waterwatch.org

October 31 WA
Hydropower in the Northwest Seminar, Seattle. State Convention Ctr. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

November 1 CA
Ecosystems Services & Markets Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

November 1-2 CA
NWRA Annual Convention, San Diego. Hotel del Coronado. For info: National Water Resources Ass'n: www.nwra.org

November 2 WA
Washington Stormwater & Source Control Conference, Seattle. For info: Environmental Law Education Center: www.elecenter.com/

November 5-7 South Africa
International Conference on Fresh Water Governance for Sustainable Development, Drakensberg. Champagne Sports Resort. Organized by Water Research Comm'n & Dept. of Water Affairs-South Africa. For info: www.wrc.org.za/freshwater/Pages/default.aspx

November 5-7 CA
CASQA 8th Annual Stormwater Conference, San Diego. Hilton at Mission Bay. Sponsored by California Stormwater Quality Ass'n. For info: http://stormwaterconference.com/

November 6-7 CA
Environmental Management & Sustainability, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

November 8-9 OR
21st Annual Oregon Water Law Conference, Portland. Hotel Monaco. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

November 8-9 CA
San Joaquin River Restoration Tour (Field Trip), Friant Dam - Merced River. Sponsored by Water Education Foundation. For info: www.watereducation.org/toursdetail.asp?id=845&parentID=821

November 8-9 CO
Upper Colorado River Basin Water Conference, Grand Junction. Colorado Mesa University. Hosted by Water Center. For info: www.coloradomesa.edu/WaterCenter

November 8-9 WA
Growth Management & Land Use Seminar, Seattle. TENTATIVE. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com or www.lawseminars.com