The Water Report™

Water Rights, Water Quality & Water Solutions in the West

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BASIN-WIDE TMDL DEVELOPMENT

IMPACTS ON NPDES PERMITS

by Suzanne C. Lacampagne and Jason B. Joner, Miller Nash LLP

The federal Clean Water Act of 1972 (CWA) requires a facility to obtain a National Pollutant Discharge Elimination System (NPDES) permit for the discharge of any pollutant from a "point source" to any water subject to federal jurisdiction as a "water of the United States." Most states administer the NPDES permit system through a delegation of authority from the United States Environmental Protection Agency (EPA). Both the **t**otal **m**aximum **d**aily **l**oads (TMDLs) required by the CWA and the Endangered Species Act of 1973 (ESA) stand to significantly impact NPDES permits. This article discusses potential impacts from Oregon's new basinwide TMDLs for the Willamette River Basin.

TMDLs—BACKGROUND

The CWA places the responsibility to "restore and maintain the physical, chemical, and biological integrity of all waters of the nation" on EPA. One of the means by which EPA accomplishes this mandate is by delegating its authority to the various state jurisdictions through the establishment and approval of water quality standards. Specifically, Section 303(d) of the CWA provides in part that:

> "(1)(A) Each State shall identify those waters within its boundaries for which effluent limitations…are not stringent enough to implement any water quality standard applicable to such waters…(B) Each State shall identify those waters … for which controls on thermal discharges…are not stringent enough to assure protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife. (C) Each State shall establish for waters identified in paragraph (1)(A)…the total maximum daily load, for those pollutants [identified]…" (D) Each State shall estimate for the waters identified in paragraph (1)(B) of this subsection the total maximum daily thermal load required to assure protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife. Such estimates shall take into account the normal water temperatures, flow rates, seasonal variations, existing sources of heat input, and the dissipative capacity of the identified waters or parts thereof. Such estimates shall include a calculation of the maximum heat input that can be made into each such part and shall include a margin of safety which takes into account any lack of knowledge concerning the development of thermal water quality criteria for such protection and propagation in the identified waters or parts thereof."

In Oregon, the responsibility for assessing water quality criteria and listing waters as impaired under Section 303(d) is delegated to the Oregon Department of Environmental Quality (ODEQ). ODEQ's 2002 Section 303(d) list (currently under revision) includes approximately 13,300 stream miles of water listed as impaired waters under Section 303(d) for one or more water quality pollutants. The most common pollutants causing these waters to be listed as impaired waters under Section 303(d) are temperature, bacteria, and dissolved oxygen.

NPDES

EPA Approval

Basin-Wide TMDLs

TMDL Focus

Temperature

Salmonids

Low Flows

High Air Temperatures

Once a state lists a body of water as an impaired water under Section 303(d), it then has the responsibility of establishing the pollution reductions that are necessary to meet that state's established water quality criteria. CWA Section 303(d)(1)(C). These required pollution reductions are what are commonly known as TMDLs. While the states are required to establish TMDLs for all waters listed as impaired waters under Section 303(d), EPA holds the final approval authority and must approve all TMDLs proposed by the states.

PROPOSED WILLAMETTE RIVER BASIN TMDLS

Overview

On October 25, 2004, ODEQ released its proposed Willamette Basin TMDLs for public comment and review. The Willamette Basin TMDL is ODEQ's largest geographical undertaking of TMDLs to date, and its first attempt to create a basin-wide TMDL rather than TMDLs for only subbasins.

The Willamette River has 13 major tributaries and drains approximately 12,000 square miles — almost an eighth of Oregon's total area. The Willamette River is the tenth largest river in the continental US in total discharge, with over 24 million acre-feet annually. The 187-mile mainstem of the Willamette River extends from its source south of Eugene northward to the Columbia River at Portland. There are approximately 16,000 total stream miles in the basin. [For source and additional information, see State of the River 2001, available online in "pdf" format from EPA at www.epa.gov/rivers/sor/sorwillamette.pdf.]

The Willamette Basin TMDL focuses primarily on three specific pollutants: temperature, mercury, and bacteria. The proposed TMDLs may significantly impact NPDES permit holders in the Willamette Basin. NPDES permit holders should take special notice of the proposed temperature and mercury TMDLs, which stand to have the greatest impact on NPDES permitting. The temperature, mercury, and bacteria TMDLs within the proposed Willamette Basin TMDLs and their likely effects on NPDES permit holders are discussed below.

[Editor's Note: ODEQ's October 25, 2004, proposed Willamette Basin TMDLs consist of: an executive summary; an overview; a Willamette Basin bacteria TMDL; a Willamette Basin mercury TMDL; a Willamette mainstem temperature TMDL and subbasin summary; nine completed Willamette subbasin TMDLs; a Water Quality Management Plan; and technical appendices for the proposed bacteria, mercury, and temperature TMDLs. The discussion on the proposed Willamette Basin TMDLs has been compiled and drawn from these documents, which are available from ODEQ (see contact and Web site information below).]

Proposed Temperature TMDL

Certain parts of the Willamette River and its various tributaries are listed by ODEQ as impaired waters under Section 303(d) for exceeding the Oregon water temperature standard during certain times of the year. Specifically, the Willamette River and its tributaries are warmer than what is necessary to protect the rearing and spawning of certain salmonid species, including chinook salmon, coho salmon, steelhead trout, bull trout, and resident cutthroat trout. All of these salmonid species migrate and spawn in various parts of the Willamette Basin. The establishment of temperature TMDLs to limit the heat-loading of the river during certain times of the year is therefore important in order to protect the species listed as endangered or threatened under the federal Endangered Species Act (ESA).

ODEQ has found that during the summer and early fall, the combination of low stream flows and high air temperatures cause the water temperature to rise to levels that can be lethal to salmonids. It has therefore set water quality temperature standards well below this lethal range in order to protect the fish from conditions that can kill them. In addition, ODEQ has found that warmer water can harm salmonids by increasing the incidence of disease, impairing their ability to spawn, reducing growth rates, decreasing survival of eggs and juveniles, and reducing their ability to compete for habitat and food with other species that are adapted to warmer stream temperatures.

In December 2003, ODEQ's governing citizen's board (i.e., the Oregon Environmental Quality Commission (EQC)), adopted new temperature criteria for the state of Oregon that have since been approved by EPA in March 2004.

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NPDES

The new temperature criteria are set forth in Table 1:

TABLE 1 — OREGON TEMPERATURE CRITERIA

Waters Identified as Migration Corridors	**20.0°C** (68.0°F)
Generally Applies Year Round	
Salmon/Trout Rearing and Migration	**18.0°C** (64.4°F)
Generally Applies Late Spring to Early Fall	
Core Cold Water Habitat	**16.0°C** (60.8°F)
Generally Applies Late Spring to Early Fall	
Waters and Times Identified for Salmon and Steelhead Spawning	**13.0°C** (55.4°F)
Generally Applies Late Fall to Early Spring	
Bull Trout Spawning and Rearing	**12.0°C** (53.6°F)
Generally Applies Year Round	

(Source: Oregon Department of Environmental Quality)

Heat-Loading

ODEQ's findings in the Willamette Basin TMDLs indicate that the majority of the heat-loading in the Willamette River is the result of solar radiation. The temperature TMDL allocations reflect this, but also provide relatively small heat-load allocations to point sources, nonpoint sources (including dams), and reserves for future discharges, such as treatment plants necessary to accommodate future population growth.

ODEQ Option

The proposed temperature TMDL actually contains two alternative proposals for the final temperature TMDL. The first option is that proposed by ODEQ, while the second option is that proposed by EPA. The two options differ in how they deal with the reserve capacity for the temperature TMDL. ODEQ's version proposes that the reserve capacity will become available for use when the TMDL is issued by ODEQ. Its rationale for this option is that the reserve capacity is part of the human use allowance, which represents an insignificant addition of heat to the river. ODEQ's proposal provides that the reserve would then become available for use at the time the final Willamette Basin TMDLs are issued.

Reserve Capacity

EPA Option

EPA's proposed option, however, provides that reserve capacity will become available upon completion of future modeling analyses for the dams and reservoirs linked to the mainstem Willamette, and when significant reductions in temperature are scheduled for implementation. Its rationale for this option is that the reserve heat-loading capacity for the human use allowance should not be used until the uncertainties related to the effects of the dams and reservoirs are more fully understood, and until actions to reduce temperature impairments are identified and scheduled to be implemented within a specified time frame.

Reservoir Impacts

Point Sources

Although ODEQ expects that the majority of point source dischargers will not have to change operations with the new temperature TMDLs because their current heat-loads fit within the proposed TMDL wasteload allocations, the final temperature TMDL is likely to have a significant impact on facilities discharging heat into the Willamette River, regardless of whether ODEQ's or EPA's proposal makes it into the final Willamette Basin TMDLs. [See discussion on Blue Heron permit below.] Needless to say, the extent to which the new temperature TMDLs will affect NPDES permit holders will vary depending on which of the two proposed alternatives is ultimately incorporated into the final temperature TMDL.

NPDES

Mercury Reduction

Proposed Mercury TMDL

There are currently multiple Section 303(d) impaired water listings on the Willamette River because of fish consumption advisories for elevated mercury concentrations found in northern pike minnow (squawfish) and largemouth bass. These advisories indicate that mercury is bioaccumulating in these fish species to levels that may adversely affect public health. The levels of mercury in bass and northern pikeminnow in the Willamette River routinely exceed the mercury criterion of 0.35 parts per million. The proposed mercury TMDL is designed to reduce the mercury levels in the basin to a point at which fish are safe for human consumption.

Editor's Note: The following discussion on the proposed mercury TMDL is taken largely from the proposed Water Quality Management Plan contained within the proposed Willamette Basin TMDLs and is available from ODEQ (see contact and Web site information below).

Sources of Mercury

ODEQ has found that mercury is a naturally occurring element found in soils throughout the Willamette Basin. Mercury was mined commercially in Oregon and used in many commercial products, including fluorescent lights, thermometers, automobile switches, and dental amalgam. Mercury is also found naturally in trees and fossil fuels such as coal, natural gas, diesel, and heating oil. The mercury present in these fuel sources is released into the atmosphere upon combustion. Atmospheric mercury can be transported great distances and can later be deposited on the landscape, where stormwater runoff can carry it into rivers and lakes. The primary sources of mercury in the Willamette Basin are associated with nonpoint sources, namely, the erosion of soils containing mercury and runoff from urban, agricultural, and forested landscapes carrying atmospherically deposited mercury. Point sources of mercury include discharges from industrial facilities and municipal wastewater treatment facilities. These sources contribute a relatively minor amount of mercury to waters of the Willamette Basin.

Nonpoint Sources

Interim Targets

The mercury TMDL has been developed using an incremental approach, with interim targets and allocations being established in this 2004 Willamette Basin mercury TMDL. These interim numbers acknowledge that a significant problem exists and necessitates expanded efforts to deal with mercury pollution. Immediate implementation efforts will require point and nonpoint sources to develop water quality monitoring and mercury minimization strategies to better understand mercury discharges and to begin mercury reductions. ODEQ plans to release revised estimates of water column targets and allocations in 2009. In the interim, ODEQ will conduct three years of water quality mercury monitoring in the Willamette Basin to collect additional information on ambient mercury and methylmercury concentrations. The collection of this extensive data set will help refine ODEQ knowledge of ambient mercury levels, the percentage of total mercury in the methylated forms, and the total load of mercury in the Willamette River. Additional source characterization work will also take place to refine ODEQ's knowledge of sector-specific source contributions. ODEQ plans to conduct additional storm surveys, as well as a pilot study, to determine the mercury concentrations in the effluent of various water quality point source discharges. ODEQ's Air Quality Program will also work with air stakeholders to refine the estimates of mercury emissions based on emission factors or monitoring data — or both.

2009 Revision

Monitoring

Water Quality Management Plan (WQMP)

The proposed WQMP provides for an incremental (phased) approach for the mercury TMDL. With a grant from EPA, ODEQ is implementing a basin-wide mercury monitoring program to support development of a food-web model and assessment of mercury sources and loads. The phased approach will move ODEQ and stakeholders from the current understanding of mercury in the Willamette Basin, as represented by the 2004 TMDL, to a better understanding that will enable ODEQ to update the TMDL in 2009. ODEQ anticipates that the 2009 TMDL will include revised water column guidance values, revised allocations, and water quality based effluent limits for mercury point sources.

Overview & Strategy

Overview of Implementation Strategy and Path Forward

- ODEQ will implement this TMDL consistent with the mercury reduction strategy developed as part of the agency's overall toxics strategy, as presented to the EQC in December 2003, and any subsequent updates.
- The overall strategy and this path forward call for minimizing mercury releases when possible, with a goal of removing the fish consumption advisories.
- The path forward focuses on expanding ODEQ's knowledge through further analysis and data collection. This is intended to increase understanding of how mercury is being released, how releases relate to fish advisories, how releases can be reduced, the economic implications of such reductions, and the public safety results from such reductions.

NPDES

Study Proposed

- A mercury strategy (path forward) for the TMDL outlines a multi-year effort to enhance understanding of mercury.

THIS WILL INCLUDE:

* ODEQ development of a mercury mass balance analysis by 2008.
* Further evaluation of the methodological and modeling tools employed in this study (specifically the food-web model for methylmercury bioaccumulation).
* Coordinated implementation of monitoring requirements and mercury reduction strategies for appropriate water point sources.
* Incorporation of data from the EPA-funded mercury water point source grant.
* Incorporation of mercury considerations into nonpoint source implementing mechanisms such as the Oregon Forest Practices Act and Oregon Senate Bill 1010 Agricultural Water Quality Management (AWQM) plans where applicable.
* Incorporation of new United States Geological Survey (USGS) air deposition monitoring data for the Willamette Valley and any additional air emission data that may become available.
* Focused efforts to clean up abandoned mines discharging mercury
* Exploration of innovative approaches for holistic reductions from facilities and activities that discharge mercury.
* Additional water column and effluent sampling by ODEQ.
* By 2009, incorporation of additional data into a revised TMDL that will update targets and provides new load allocations and wasteload allocations to be incorporated into future permits. If new information suggests improved alternative methods for establishing water column guidance values or load allocations, this information will be incorporated into the 2009 revisions as part of the adaptive management framework.

NPDES Permits 2005-2009

PERMITTED WASTEWATER DISCHARGERS (NPDES WASTEWATER PERMITS)

Permit limits will not be established for permits issued from 2005 to 2009. ODEQ's intent is that a general permit or a TMDL implementation rule would be issued for all wastewater dischargers that are major sources that may discharge mercury, such as municipal wastewater treatment plants and pulp and paper facilities. The general permit or rule will require quarterly monitoring for total mercury and methylmercury, and the development and implementation of a mercury reduction plan. Water quality based effluent limits are envisioned for permitting actions occurring after the 2009 TMDL update.

- Wasteload allocations in the 2004 TMDL will be developed as group/sector allocations.
- Water point sources will not have Waste Load Allocations (WLA's) incorporated into permits as numeric water quality effluent limits during the first round of permits.
- After issuing the 2004 TMDL and prior to issuing the general permit or TMDL implementation rule, ODEQ will use the EPA mercury monitoring grant to collect total mercury and methylmercury data from major **p**ublicly **o**wned **t**reatment **w**orks (POTWs) and pulp and paper facilities.

General Permit

- A general permit or TMDL implementation rule will be developed for all municipal and industrial wastewater point sources. The permit or rule would be issued after the issuance of the 2004 TMDL. A sector-specific general permit could be developed and issued if deemed appropriate.
  * These mechanisms would put all sources on the same time frame, enhancing the development of mercury baseline information.
  * A general permit or TMDL implementation rule would separate mercury from the main permit for each permittee.

Monitoring Requirements

  * It would include an effluent monitoring requirement for all sources that acknowledge mercury in their effluent as documented on their ODEQ permit applications or in EPA's Toxic Release Inventory (TRI), or if ODEQ suspects that mercury is in the effluent. All major NPDES POTWs and NPDES pulp and paper facilities would be included.
    - Monitoring required on a regular basis as data from the mercury monitoring grant suggests is appropriate. Monitoring will involve ambient and effluent methylmercury and total mercury.
    - Monitoring will not be required for sources that do not acknowledge mercury on their applications, do not report it in their TRI data, or have not been otherwise identified as potential mercury sources by ODEQ.
    - If valid effluent monitoring data indicates that mercury is not present or does not exceed de minimis levels, then future effluent monitoring will not be required.

Minimization

  * MERCURY MINIMIZATION: The general permit or TMDL implementation rule will include elements pertinent to mercury minimization strategies. ODEQ will work with stakeholders to develop these elements and specific measures that would be incorporated into the permit or rule.

NPDES

- The identified elements and any specific strategies would be made available for public review and comment as part of the general permit or TMDL implementation rulemaking process.
- The strategies shall be implemented within 12 months after the issuance of the general permit or rule. Strategies may be implemented sooner, if feasible. (Note: This process has a different timeline from the TMDL implementation plan development process.)

Dental BMP

- An example of such a strategy for the POTWs is the Oregon Dental Association BMP to reduce mercury effluent loadings from dental offices served by the POTW. The Oregon Dental Association Web site is found at: www.oregondental.org.
- Sources may work together to jointly implement a specific strategy as long as the specific implementation issues are approved by ODEQ, similar to the proposed permit bubble concept (see below).
- The TMDL analysis and related reductions are based on total mercury; but strategies to minimize methylmercury will be considered.

"De Minimis"

- ODEQ will use its EPA mercury point source grant to conduct effluent monitoring screening of various general permits or other minor sources that may discharge mercury.
- Effluent monitoring would be required for a minor NPDES or general permit source if the above effluent monitoring screening reveals that a source or source category discharges mercury at a significant level. These sources may need coverage under the general permit.
- "De minimis" is defined as the target concentration of mercury in the mainstem of the Willamette River, which is 0.92 nanograms/liter.
- ODEQ will examine how credit can be given to those sources that have already made mercury reductions.

"Permit Bubble"

- PERMIT BUBBLE: Some water point sources, such as POTWs, have expressed interest in a "permit bubble" that would allow a group of similar sources to join together to determine the best way to reduce mercury effluent loadings. This would allow the group to collectively solve their mercury reduction needs. From 2004 to 2009, the bubble concept will be fully explored for implementation after 2009, when new mercury water quality based effluent limits go into effect.

Trading?

- Trading would be an option to meet future wasteload allocations. A trading program would need to be proposed by sources to ODEQ for review and approval. Public review and comment would be part of any proposed trading program.

Stormwater Discharges

- PERMITTED STORMWATER DISCHARGES: Municipal Separate Storm Sewer System (MS4) Phases 1 and 2 ODEQ's intent is that permit limits will not be established for the NPDES MS4 permits issued from 2005 to 2009. Instead, these permits will trigger requirements established in the MS4 program for a pre-TMDL situation with a focus on controlling pollutants identified on the 2002 303(d) list which includes mercury.
  - * Mercury requirements will be specifically incorporated into the first permits issued after the issuance of the 2009 TMDL, which will trigger the TMDL requirements found in Schedule D(2)(d) of the MS4 permit.
  - * Prior to the issuance of the 2009 TMDL, the MS4 co-permittee must adhere to the 303(d) listed pollutants requirements found in Schedule D(2)(e). Under this requirement, the co-permittee must qualitatively review the pollutants that are listed in the 2002 303(d) report that are relevant to MS4 stormwater sources, including mercury. This review and corresponding summary of proposed actions must be incorporated into the second year annual report under the MS4 permit.

Review Requirements

THE REVIEW AND SUMMARY MUST ACCOMPLISH THE FOLLOWING:

- Determine whether there is a reasonable likelihood for stormwater from the MS4 to add or contribute to water quality degradation of receiving waters through the discharge of mercury. Provide the rationale for the conclusion, including the results of an evaluation.
- If the discharges from the MS4 are a contributor for mercury, determine and describe the relationship between mercury and the MS4 discharges.
- Determine whether the BMPs in the existing stormwater management plan are effective to address mercury. If not, describe how the plan could be adapted to more appropriately address mercury. A summary of the rationale for this determination must also be included in the report.
- If sufficient information is not available to make the determinations required above, compile the additional pertinent information necessary to adequately complete these determinations.

NPDES

Permit Modification

26.4% Reduction

Bacteria in Tributaries

Sources

Stormwater

MS4 Impacts

Industrial Stormwater Requirements

ODEQ's intent is to reduce mercury stormwater runoff from industrial sources most likely to include mercury. It will require the development or modification of ODEQ's "1200Z general permit" to include monitoring requirements and mercury reduction strategies.

- Any new mercury requirements in the renewed general permit would be incorporated into a source's stormwater management and must be reviewed and approved by ODEQ.
- After issuance of the 2009 TMDL, water quality based effluent limits may be placed into individual source permits or bubble permits within the first permit cycle.

Mercury TMDL Summarized

To summarize, the ODEQ suggests that a 26.4 percent reduction in the total mercury load is needed to reduce mercury in fish tissues to a safe level. This corresponds to the elimination or removal of 37.5 kg of total mercury per year. This reduction will be allocated to the various point and nonpoint sectors responsible for mercury loading in the basin. But because of the many uncertainties related to mercury's sources and behavior in the environment, ODEQ will *not* incorporate these allocations into wastewater permits at this time. ODEQ is proposing an incremental approach to the mercury TMDL. *Interim* targets and allocations, based on the body of information currently available, are being proposed. *Final* targets and allocations will be developed in 2009 following additional data collection, analysis, and stakeholder outreach. The 2009 TMDL allocations will therefore have significant impacts on NPDES permits in the Willamette Valley in order to achieve ODEQ's 26.4 percent target reduction standard.

Proposed Willamette Basin Bacteria TMDL

ODEQ's water quality data for the Willamette Basin shows that many small Willamette tributaries exceed the bacteria standard set by the EPA throughout the year. The mainstem Willamette River generally meets this standard in the summer months, but frequently exceeds the standard during heavy rainfalls and occasionally at other times of the year. Bacteria in the Willamette Basin originate from a variety of sources: discharges of untreated or poorly treated sewage resulting from malfunctions or overflows, failing residential septic systems, and runoff from animal feces, to name a few.

ODEQ determined that a large contributor of bacteria pollutants in the Willamette River and its tributaries originates from stormwater discharges. Depending on location, the proposed bacteria TMDL provides for a 30 to 90 percent reduction in current bacterial loading. In order to meet the new bacteria load reduction, ODEQ will revise the NPDES permits for industrial, facility, municipal, and urban discharges to reflect the proposed wasteload allocations.

MS4 Discharge Control Measures for Bacteria

The proposed bacteria TMDL is likely to have the most significant effect upon the MS4 permit holders. In order to reduce bacterial loading, ODEQ's proposed bacteria TMDL proposes three levels for applying MS4 control measures. The first level, also known as Phase I, will be implemented by means of ODEQ-issued MS4 permits. MS4 Phase I permits are issued to jurisdictions with a population size of 100,000 or more. There are seven entities (plus co-permittees) covered in Phase I: Portland (with Port of Portland and Multnomah County), Washington County (with Clean Water Services), Gresham (with Fairview and Multnomah County), Clackamas County (and cities within the county), Salem, Eugene, and the Oregon Department of Transportation.

The second level, or Phase II, applies to jurisdictions that are located in census defined urbanized areas over 50,000 in population, but are not covered by one of the ODEQ Phase I MS4 permits. These jurisdictions must each develop a stormwater management component that addresses each of the control measures as part of their Phase II MS4 permits. The Phase II MS4 permits applicable to this TMDL/WQMP include the cities of Corvallis, Keizer, Philomath, Springfield, Wood Village, Troutdale and Turner, as well as Benton, Marion, and Lane Counties.

The third level applies to DMAs that have jurisdiction over stormwater with a population size of up to 50,000 but are not covered by one of the ODEQ Phase I or II MS4 permits. These DMAs must develop a stormwater management component that addresses any appropriate control measure that is relevant for the community as part of their TMDL implementation plan.

In short, the proposed bacteria TMDLs will probably have a substantial impact on MS4s through significant reductions of bacterial loading through MS4 control measures.

NPDES

Nonpoint Source Obligations?

9th Circuit Decision

Oregon Challenge

Blue Heron Permit

"TMP"

Permit Requirements

TMDL LITIGATION IN THE NORTHWEST

Recent TMDL litigation has focused on governmental authority to regulate nonpoint sources of pollution. It should be noted that nonpoint sources of pollution are exempted from the NPDES permit program and correspondingly are not required to obtain NPDES permits. With respect to TMDLs, however, these cases remain important because they challenge whether nonpoint sources are obligated to comply with the TMDLs set by ODEQ and EPA.

Pronsolino v. Marcus

At issue in *Pronsolino v. Marcus,* 291 F3d 1123 (9th Cir 2002), *cert denied*, 539 US 926 (2003), was the federal government's legal authority to require states to establish TMDLs for nonpoint sources, such as forestry and agricultural lands. On March 30, 2000, a federal district court in San Francisco upheld EPA's practice of interpreting the CWA to provide EPA and the states with the authority to identify waters impaired by nonpoint sources of pollution and to develop TMDLs for those impaired waters listed under Section 303(d). On May 31, 2002, the Ninth Circuit Court of Appeals affirmed the lower court's ruling, holding that Section 303(d) authorizes EPA and the states to list and establish TMDLs for waters impaired by nonpoint sources only.

THE NINTH CIRCUIT RULED THAT:

"...the CWA is best read to include in the § 303(d) listing and TMDLs requirements waters impaired only by nonpoint sources of pollution. Moreover, to the extent the statute is ambiguous—which is not very much—the substantial deference we owe the EPA's interpretation...requires that we uphold the agency's more than reasonable interpretation."

The decision was appealed to the United States Supreme Court, but on June 16, 2003, it declined review of the Ninth Circuit's opinion.

Hawes v. State of Oregon

In *Hawes v. State of Oregon* [No. CV A120374 (Benton County Circuit Court 2000), appeal to the Oregon Supreme Court pending] the state's legal authority to establish TMDLs pursuant to the CWA for waters impaired only by nonpoint sources was challenged. In December 2000, the Oregon Circuit Court for Benton County held that the state does not have authority to establish TMDLs for waters impaired solely by nonpoint pollution because the CWA does not provide the state with authority to regulate nonpoint pollution.

The Oregon circuit court's holding in *Hawes* is virtually in direct conflict with the Ninth Circuit's holding in *Pronsolino*. The circuit court stayed enforcement of its decision pending appeal, which is scheduled for argument before the Oregon Supreme Court in December 2004.

TMDLS AND THE FUTURE OF NPDES PERMITS

As noted above, the TMDLs for the Willamette Basin will not be incorporated into NPDES permits until 2009. In the interim, ODEQ has been requiring some companies that discharge into water quality impaired water bodies to address issues such as temperature to meet water quality criteria.

For example, in 2000, ODEQ proposed an NPDES permit for the pulp and paper mill now owned by Blue Heron Paper Company on the Willamette River in Oregon City, after the original permit had expired. The permit contained new stipulations which required the company to reduce discharges of heated wastewater to the Willamette River. ODEQ had determined that the water quality criterion for the Willamette River was 20 degrees Centigrade, and the river exceeds that criterion between July 1 and September 15. Blue Heron's wastewater discharges were found to increase river temperature outside of its assigned mixing zone (the small designated area where treated wastewater mixes back into the river). The permit required Blue Heron to develop and implement a **t**emperature **m**anagement **p**lan (TMP) that would implement specific heat reduction projects. The permit also noted that when a TMDL for temperature was complete, Blue Heron would be given specific heat load limits created to meet the temperature standard.

THE FINAL PERMIT CONTAINED THE FOLLOWING REQUIREMENTS:

Temperature

- The TMP requires Blue Heron to monitor influent and effluent temperature and the temperature above the points of discharge.
- Effluent temperature limitations are unnecessary from November 16 to April 30 because there is no reasonable potential for Blue Heron discharge to cause a measurable increase in temperature outside the mixing zone.

NPDES

Reduction Alternatives

Heat Load Reduction Feasibility Study

Blue Heron must conduct a study looking into alternatives to reduce its wastewater temperature to below permit levels, including:

- recycling and eliminating or reducing part of its discharge
- recycling selected waste streams
- directly removing heat from wastewater and transferring it back to the process
- storing or reducing heated wastewater during periods when river temperatures are high
- installing treatment technology to reduce temperatures of the discharge
- adding cool water to the river

Model for Future?

The Blue Heron permit is an indication of what the future holds for NPDES permits in order to comply with the upcoming temperature TMDLs on the Willamette River by reducing heat-loading of facilities. NPDES permit holders whose discharge adds to the heat-loading of the Willamette River, especially during the spring through fall months, should expect to have to undertake significant steps to reduce their heat-loading of the river in order to comply with the new temperature TMDLs.
[For additional information on the Blue Heron NPDES permit (from which the above information was largely obtained), see the ODEQ publication in "pdf" format at: www.deq.state.or.us/wq/wqfact/BlueHeronFactsheet.pdf]

CONCLUSION

NPDES Impacts

In Oregon, TMDLs will likely have a significant impact on NPDES permits. In particular, the recently proposed mercury and bacteria TMDLs for the proposed Willamette Basin TMDLs are likely to have a significant future impact on NPDES permit holders as the new TMDLs are finalized and implemented. Temperature water quality standards are already affecting NPDES permits and permit renewals, as ODEQ is requiring permittees to address heated wastewater discharges to temperature impaired water bodies.

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Websites:

Proposed Willamette Basin TMDL

Draft of Proposed Willamette Basin TMDL, Oregon Department of Environmental Quality (Sept. 2004), available on ODEQ's Web site in "pdf" format at: www.deq.state.or.us/wq/willamette/WRBHome.htm

Court Decisions

The federal court decision in *Pronsolino v. Marcus* is available in "pdf" format at: http://www.epa.gov/owow/tmdl/pronsdecision.pdf; the Ninth Circuit Court of Appeals decision in *Pronsolino v. Marcus* is available from EPA website: www.epa.gov/owow/tmdl/lawsuit.html

FISH PASSAGE ASSESSMENT

KITSAP COUNTY, WASHINGTON

by Paul Conrecode, Senior Project Fisheries Biologist, Golder Associates Inc.

Tributary Barriers

Introduction

Salmon are anadromous: born in freshwater, they migrate to and mature in saltwater, and then return to spawn in their natal streams. The migratory nature of salmon is part of planning and problem solving for Pacific Northwest water resource managers, but much of the attention has been focused on hydroelectric and municipal water supply facilities that are usually on the mainstem of rivers. Tributaries, however, account for a large part of salmon habitat in many watersheds, and culverts at stream/road crossings and irrigation screens or diversions also create barriers to fish passage. These barriers prevent upstream migration of adult salmon, denying them access to spawning areas and thereby limiting their overall productivity and abundance. Interference with downstream (seaward) migration of juvenile salmon can also occur – for example, if a culvert bottom is fractured, and flow is dispersed or lost from the main channel.

"SSHEAR"

Washington Methodology

Your author is currently working on fish passage assessment for the Kitsap County (Washington) Department of Public Works. More specifically, we are applying the Washington Department of Fish and Wildlife's "Salmonid Screening, Habitat Enhancement, and Restoration" methodology ("SSHEAR" — see internet site: http://wdfw.wa.gov/hab/engineer/habeng.htm) to determine if a culvert is a barrier or is passable, and then to prioritize the culvert for repair or replacement. This methodology uses a Prioritization Index (PI), which is derived from an equation employing six variables.

Prioritization Index

THE PI VARIABLES INCLUDE:

- B: PASSAGE IMPROVEMENT – some culverts have partial passability, and it can vary with flow levels
- P: PRODUCTION POTENTIAL – in terms of adult fish per unit area of stream, varies with species
- M: MOBILITY MODIFIER – accounts for differences in resident or anadromous species
- D: STOCK CONDITION – based on Washington Department of Fish and Wildlife's stock inventory status, the productivity and abundance of a particular sub-population relative to historic levels
- C: COST – one of three possible values based on projected cost of culvert repair or replacement, gives greater weight to less costly projects
- H: HABITAT GAIN – in units of area, the habitat to be gained by culvert repair or replacement

Passage Problems

Fish passage problems at stream/road crossings are most obvious where there is an outfall drop at the downstream end of the culvert. Vivid images of leaping salmon notwithstanding, any outfall drop greater than 0.24 meters (a little over nine inches) is considered a barrier in the SSHEAR methodology. Less obvious factors include culvert length, slope, water depth and velocity, and ratio of culvert span to streambed toe width (i.e. bottom). The criteria for these parameters are based on fish behavior as well as stream conveyance. For example, adult salmon making the arduous upstream migration tend to swim in bursts through riffles and then rest in pools – behavior consistent with the heterogeneous habitat in healthy streams. In a long culvert with uniform or uninterrupted flow and/or low depth, fish can become stranded from exhaustion. Likewise, slope (especially over long distances) and velocity (especially during high flow events) can be barriers to fish passage in culverts with inadequate design.

Species Use

The Production Potential variable (P) weights the Prioritization Index (PI) according to which species use (or historically used) spawning or rearing habitat upstream of the culvert. Pink, chum, and sockeye salmon have high production values as they are limited by spawning habitat, which is generally more plentiful. Other fish in the salmonid family (Chinook, coho, steelhead, and resident trout and char) are limited by rearing habitat, which is typically less abundant. For streams with multiple species, a species complex factor is used to adjust for competition so that the overall production value is below the simple total of individual values.

Costs

The Cost variable (C) assigns a value from one of three cost ranges: 3 = less than $100,000, 2 = between $100,000 and $500,000, and 1 = greater than $500,000. With other factors being equal, less costly projects will have a higher PI value. The Cost variable includes the cost of design. In Washington State, any work in or over streams requires a Hydraulic Project Approval (HPA) permit from the Washington Department of Fish and Wildlife. The HPA is typically written by the Area Habitat Biologist, but for more technical projects engineers from the Department's Habitat Program will provide technical review and design assistance. Their participation will also expedite the permitting process.

"HPA" Permit

Fish Passage

Habitat Fieldwork

Determination of the Habitat Gain variable (H) is costly because it requires extensive fieldwork – detailed habitat surveys to measure spawning and rearing habitat areas. The fieldwork includes walking upstream to measure riffle and pool areas, percentage of substrate (e.g., gravel) suitable for spawning, and evaluation of other habitat important to salmonids – canopy closure, in-stream cover, temperature, and seasonal stream flow. For this reason, each culvert was looked at with regard to the first five variables (B, P, M, D, C – described above) in order to evaluate which culverts merited the further effort required to determine the H variable. Both Kitsap County and the Washington Department of Fish and Wildlife participated in this effort.

In some cases, the available information for the first five variables was incomplete or dated. For example, the salmon species using the stream, their extent of distribution within the watershed for spawning and rearing, the stock condition (healthy, depressed, unknown), or even the inclusion of all tributaries used by fish in the stream catalog and maps might be lacking. We reviewed reference materials, and worked with state, local and tribal resource managers to update, qualify, and add value to data pertaining to production potential, stock condition, and habitat. We also conducted field surveys in selected stream reaches to verify the presence of juvenile anadromous salmonids (e.g., coho) and to determine the location and extent of natural barriers like waterfalls or steep gradients.

Funding Priorities Database

Having conducted the fish passage assessment and determined the PI for culverts identified as barriers, Kitsap County can now have the culverts added to the database maintained by the Washington Department of Fish and Wildlife. The list is used to determine funding priorities for culvert repair or replacement throughout the state. The PI has also been used to support applications for funding from other sources such as the Salmon Recovery Funding Board. Created in 1999 and consisting of five citizens appointed by the Governor and five state agency directors, the Salmon Recovery Funding Board grants funds for salmon habitat restoration and has helped finance over 500 projects.

Funding Sources

The Washington Department of Transportation has dedicated annual funding to address fish passage problems on state roads, and private landowners can apply for Small Forest Landowners Grant through the Interagency Committee, the same agency that serves the Salmon Recovery Funding Board. Other sources for funding fish passage and salmon habitat enhancement projects can be found on-line at: / www.iac.wa.gov/srfb/grants.asp and http://ssrc.boisestate.edu/.

Other Factors

Factors other than the PI may also affect culvert prioritization and grant funding: if the stream is habitat for species listed under the federal Endangered Species Act, or if the stream's fish have other unique attributes. East Kitsap Peninsula chum salmon are significant because of their early run timing, their isolation from other chum salmon stocks in Puget Sound, and their association with small streams rather than a major river. Maintaining the abundance of stocks with particular temporal and geographic adaptations within the larger species population is generally considered to be part of good resource management. The chum salmon also have cultural and economic importance as they support a major tribal and sport fishery.

Salmon access to upstream areas is a fundamental habitat concern, and therefore a priority for cities and counties working to improve the fishery. Fish passage assessment requires a range of capabilities in hydrology, fisheries, and engineering to facilitate culvert repair and replacement, and secure funds (grant acquisition).

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Reference:
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THE ROLE OF SCIENCE IN THE ESA

BALANCING THE NEEDS OF PROTECTED SPECIES: A HISTORICAL PERSPECTIVE

by Michael G. Thabault, US Fish and Wildlife Service

Since the Endangered Species Act was passed in 1973 there have been approximately 514 animal species listed. Protecting most of these species involves ongoing water management and allocation issues — at least 258 of these species are aquatic or aquatic dependant.

Habitat Conflicts

As one would expect, the ranges, distributions, and ecological needs of many of these species overlap. Due to changes in the physical environment, many of these species' range of habitat has been restricted to a fraction of its historical extent. Some species now occupy habitat from which they were historically absent. As a result of these changes, there may be significant conflict between the varying needs of different listed species which are now restricted to sharing the same limited areas — areas which are often outside the preferred range of at least one of the concerned species. These conflicts are further complicated when the areas involved are critically important for societal needs.

Fortunately, science can provide us with valuable tools to help manage these conflicts. Unfortunately, allocating the resources necessary to inform the pertinent science capable of meeting these challenges is all too rarely a priority. This article examines the application (or lack of application) of these tools in the management of several such conflicts.

Traditional Approach

The following brief overviews of ESA experiences in California, Oregon, and elsewhere have implications for other similarly controversial programs (e.g., the Platte River Recovery Program, the Rio Grande, the Pecos — the list goes on). It appears that despite obvious signals of ecological and species decline, there is generally an unwillingness to invest in structured science prior to a crisis (e.g., the listing a species under the ESA or some other operational constraint). This lack of advance scientific endeavor leads to a lack of targeted long-term data sets. This data-lack, in turn, creates a void for new science and delayed knowledge once a species has been listed. Additionally, our traditional emphasis has been on species-specific information and a single species' minimum requirements for survival. This traditional approach has hindered our management capability, ignoring multi-species, landscape-scale management strategies which might provide for creating more optimal conditions.

Data-Lack

California Examples

Historical Conditions

The National Marine Fisheries Service (NOAA Fisheries) listed winter-run chinook salmon in the Sacramento River in the Central Valley of California as a threatened species in 1990. They were subsequently reclassified as endangered in 1995. These winter-run chinook historically began their spawning run up the Sacramento River in December and continued through June. Spawning would occur typically in April through July. Rearing and out-migration would continue throughout the spawning period during spring flows. Prior to the construction of Shasta Dam on the upper Sacramento River, winter-run chinook would go past the present dam site into the upper Sacramento, Pit, and McCloud Rivers. The glacial melt that stimulated spawning would also keep the temperature of the water in the rivers very cool, providing optimal rearing conditions. This race of chinook salmon became adapted to this ecological niche.

Blocked Passage

No provision for upstream passage by salmon was provided when Shasta Dam and its downstream re-regulating reservoir (controlled by Keswick Dam) were built. Winter-run chinook were effectively precluded from virtually all their historical spawning habitat upstream of Keswick. The construction of Red Bluff Diversion Dam approximately 30 miles downstream of Keswick (which provides irrigation supply to the Tehama Colusa Canal) further precluded upstream passage by salmon. Faced with these extreme changes to the river system in which they evolved, it is perhaps surprising that winter-run chinook salmon were not extirpated soon after construction of these dams. However, Shasta Dam was regularly operated for hydropower production, which meant that water was released at an elevation on the dam to accommodate the turbines. When the reservoir was full these releases were cold and created suitable downstream environmental conditions for winter-run chinook salmon spawning and rearing. Winter-run chinook salmon were soon observed using new spawning habitat below Keswick Dam. Unfortunately, the reservoir was not always full. When the reservoir was low the releases were warm, which created adverse conditions for winter-run chinook salmon. This series of physical changes to the environment forced the winter-run Chinook out of its historical range and straight into the path of water development projects in the Central Valley of California.

Cold/Warm Releases

Listing

The listing of winter-run chinook salmon was determined appropriate because the population of spawning adults returning to the river had declined from over 100,000 individuals in the late 1960s to less than 200 at the time of listing (i.e., 1990). Additionally, NOAA Fisheries concluded that the continued

ESA Science

Delta Smelt

Salinity Tolerance

CVP & SWP Alterations

Species Conflict

Shasta Dam Releases

Studies Lacking

Galvanizing Events

CalFED

Adaptive Management

operation of the Central Valley Project — specifically Shasta Dam and Red Bluff Diversion Dam — were significant threats to the species.

At the lower end of the Sacramento Valley, in the Sacramento-San Joaquin Delta (Delta), the US Fish and Wildlife Service (USFWS) listed the delta smelt as a threatened species in 1993. The delta smelt is a small, mostly annual fish that resides in the Delta, Suisun Bay, and Suisun Marsh. Historically, this species began its spawning migration from Suisun Bay as early as February and continued this migration through April and early May. Spawning occurred from March through May (perhaps as late as mid-June in drier years). This species has a very narrow salinity tolerance. In the past, water exhibiting the species' appropriate salinity range, while prone to shifting location, could be found over a relatively broad geographic area — its prevalence being controlled by the amount of spring outflow.

The Delta now contains State and Federal water projects which divert water to agricultural and municipal purposes in the San Joaquin Valley and Southern California. The Federal Central Valley Project (CVP) began diverting from the Delta in 1939. The State Water Project (SWP) began diverting from the Delta in 1968. Combined, these projects have historically diverted as much as 70% of the inflow into the Delta, in amounts of up to 6.1 million acre feet annually. As relates to the delta smelt, these two water projects modified the physical environment in primarily two ways. First came the construction of the dams themselves. The Central Valley is a "spring snowmelt" system, i.e., historically the rivers peaked in flow during April and May as the Sierra snowmelt occurred. The dams were purposefully developed to capture this snowmelt for water supply — thereby preventing it from arriving in the Delta. Secondly, the pumps exporting water from the Delta significantly affected habitat conditions in the Delta itself. The Delta's diverted fresh water was replaced by higher-salinity water from the Bay. This resulted in a constriction of suitable delta smelt habitat due to increased salinity.

This simplified example highlights how the physical changes to this system have affected these two species and increased the potential for conflict. Friction now exists both between these two species and between these species and California's water supply needs. Prior to water development there was no potential for conflict between these species' life cycles. Now, however, both species depend on timely releases from Shasta Dam. The water release times appropriate for each species don't always match up, however, and may be inconsistent with the seasonal needs of California's agricultural and urban water users. There is ongoing tension between releasing water to aid with Delta water quality and retaining water for temperature management. This situation is not just confined to the upper Sacramento River. These competing interests exist for all major tributaries to the Sacramento and San Joaquin Rivers and involve many other runs of salmon in the Central Valley.

A substantial amount was known about these species at the time of their listing. This included knowledge of the ecological functions and physical habitat characteristics necessary for their survival. However, prior to ESA protection — spanning the many years of their decline — there was very little targeted monitoring and evaluation of these species. In addition, though there were clear warning signs, little was done to modify the physical threats to these species in order to preclude listing. Even subsequent to ESA listing, it took four-to-five years to begin true adaptive management and monitoring programs for delta smelt and roughly a decade to establish such programs for winter-run chinook. Only now are we truly reaping the benefits of additional knowledge on how to manage this system for the species while providing for the original purposes of the water project with a higher degree of certainty.

Significant reductions in pumping and water supply deliveries — coupled with critical habitat designations, additional species listings, and new water quality standards for the Delta (largely developed around the needs of the fish) — galvanized the valley's various stakeholders into participating in negotiation. Substantial interruptions in project operations due to the issues surrounding ESA-listed species preceded the evaluation of the scientific capabilities necessary to refine system management around real-time data.

The Bay-Delta Accord (1994) resulted in the CalFED Bay-Delta Program being launched in 1995. This Program really got things started. CalFED, however, has yet to attain true adaptive management. The essence of adaptive management is determining the uncertainties and then designing focused experiments to resolve the uncertainties. CalFED has implemented only a few measures supporting such efforts. One major uncertainty that agencies and stakeholders wrestled with was whether managing for temperature in aid of winter-run chinook through the summer would deplete available storage to the extent that salinity management in the Delta would be compromised the following spring. The flip side of this is that water would be released from storage to meet water quality standards, depleting the cold water pool in the reservoir. CalFED is still early-on in implementing its "experiment." While only time will tell whether sufficient momentum has been gained to reverse the deleterious trends for these species, early results appear very promising.

ESA Science

Data Gathering

In the CalFED process, as well as with many highly complex and controversial ESA-driven programs nationwide, it took strong leadership in the stakeholder community to get beyond simply bemoaning the lack of science and actually dedicating the resources needed to gather pertinent, useful, scientific information. These efforts go beyond just securing funding and lining-up other resources. Stakeholders and non-agency staff have challenged existing paradigms and established a process to jointly find a way to operate the system to better meet all of its demands. This collaborative effort established an environment where agencies were willing to take on some risk in the interest of obtaining results. These largely unprecedented undertakings appear to require some prompting. As is noted in a paper by David Hayes (Hayes, 2002), other elements need to be present, perhaps a "forcing event" which creates a "tipping point" and moves people off entrenched positions. This allows political leadership to bring parties to the table and work things out.

The Klamath Experience

Recent and on-going events in Klamath Basin (which spans the Oregon-California border), provide further illustration of the pitfalls of postponing the gathering of adequate, targeted, scientific data.

Science Pitfalls

As with the previous example, the Klamath Basin has multiple ESA-listed species — suckers in the upper basin and salmon in the lower basin. The science is likewise less than complete, despite the fact the suckers in the upper basin have been listed under the ESA since 1988 and coho salmon since 1997.

The endangered Lost River sucker and the short-nosed sucker reside in the Klamath Basin upstream of and in Upper Klamath Lake. The threatened coho salmon reside downstream of Iron Gate Dam, below Upper Klamath Lake. Historically, the suckers of Upper Klamath Lake have suffered significant mortality events for which the specific causes are unclear. Some data indicates poor water quality has occurred in Upper Klamath Lake, but not necessarily at the same time as the mortality events. Coho salmon utilize both the mainstem and the tributaries of the Klamath River, but at different times of the year. USFWS and NOAA Fisheries independently arrived at the conclusions that there should not be dramatic changes in the lake level (for sucker survival), and that there should be minimum instream flows (to aid coho salmon survival). These decisions — coupled with a natural drought event — provided the backdrop for heated conflict in the summer of 2001.

Mandated Action

In the absence of sufficient species-specific data, the evaluation arising from mandated regulatory action usually points to a single answer. In the absence of upfront information on uncertainties, agency personnel must act on pre-existing information. This often leads to a prescriptive solution due to the lack of information to assess the risk of alternative courses of action. As often interpreted, the structure of the statutes and regulations leave little flexibility to explore variations in management that might minimize impacts while still protecting the resource. The prescriptive solution becomes the only scientifically supportable solution, in part because the lack of information — or the presence of conflicting information — leaves agency personnel averse to risk. In some respects this was the real time ramification of the Klamath Basin situation.

Limited Flexibility

The ESA does not provide for USFWS or NOAA Fisheries to not act pending additional information. They are charged with making decisions based on the information at hand. The lack of precision in the science often leads the agencies to choose conservative alternatives with relatively little flexibility. One result is that when a crisis hits there is little room to maneuver to find creative solutions. The results of the agencies' evaluation becomes "the" answer. More comprehensive scientific knowledge would have provided the agencies more guidance on where flexibility lies and how to formulate an adaptive management program that could resolve some of the ongoing uncertainties in the Klamath Basin.

Lack of Data

The National Research Council (National Research Council (NRC), 2004) evaluated the science behind the decisions of the agencies in the Klamath basin and concluded that the vast majority of those decisions were appropriate and that their exercise of judgment was not outside the bounds of scientific knowledge. However, they did conclude that in certain instances (e.g., water level in Upper Klamath Lake) there was a lack of clear science to justify the decision. In fact, they concluded that there may be data which runs counter to the conclusion reached by the agency. The NRC Report points to the need for a basin-wide effort of recovery implementation and participation in order to achieve success. The Report's discussion and conclusions about the lack of data supports the argument that a more collaborative process, initiated earlier, might have avoided this crisis.

The Missouri Example

Three Listings

Similar conclusions may be reasonably reached by assessing recent and current activities in the Missouri River Basin. The Missouri River is currently home to three ESA-listed species: Interior least terns, Great Plains piping plovers, and pallid sturgeon. The Missouri River traverses seven states in the central plains of the US. While there is fairly good information on population status and trends across the

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Evaluation Needs

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range of the piping plover, there has been no range-wide or basin-wide coordinated scientific effort to evaluate and manage the least tern or the pallid sturgeon. The Missouri River has historically been, and to a certain degree still is, a highly dynamic system. The three ESA-species, as well as numerous other native species in the basin, have principally suffered and declined because of the loss of physical form and function of the river. There appears to be little debate on this point. However, because of the lack of a comprehensive scientific approach within the basin, there is currently no agreement on precisely how much of that form and function must be returned to the river to stem the decline of these species — especially with regard to the pallid sturgeon.

USFWS took the position in 2000 that some semblance of form and function needed to be restored to the Missouri River in order to ensure the survival of these species. As a result, USFWS prescribed an approach. In 2003, USFWS was asked to reconsider its approach and the agency again concluded that some semblance of form and function needed to be restored to the Missouri River to ensure the survival of the pallid sturgeon. USFWS did, however, modify the specific measures required. There was substantial litigation associated with this issue (see Hayes/Schneider/Sturkie, TWR #4). The essential polarized arguments were: (1) there is insufficient science to do anything; and (2) the science is so clear that USFWS should have never deviated from their original conclusion. The court ultimately decided that the basic revised course laid out at the end of 2003 was defensible (see Briefs, TWR #5 & #6).

Years of conflict, both in the basin and in the courts, have done little to further our understanding of what works and what does not work ecologically in the Missouri River. Although the courts have ruled on the basic framework, it takes leadership and people to collaborate on the science to ensure success for all interests. Leadership and collaboration in the basin appear to be in short supply.

Despite a long history of conflict there has, as yet, not been sufficient coalescence around dedicating the resources necessary to implement a comprehensive monitoring and adaptive management program. Even after 2000 — when events might have provided for a "tipping point" — there was only further polarization. The polarization yielded very little new information with which the USFWS could perform its 2003 evaluation.

Recently, in an attempt to comply with one component of the biological opinion, the US Army Corps of Engineers (Corps) proposed to construct an unprecedented amount of shallow water habitat in the Missouri River. Their basic premise that they would be able to springboard off work that had been done since the mid-1970's. Remarkably, after 35 years of implementation, there is very little structured empirical data with which to assess the reliability or efficacy of the course chosen by the Corps. Therefore, there remains great uncertainty as to the degree of impact that the Corps' recent actions will have on the biological environment. Only with dedicated adaptive management and monitoring will we be able to remove some of the uncertainties to maximize biological benefits.

Conclusion

There are numerous species that are in decline and are considered to be candidates for protection under the ESA. Many of these are already in areas where other species are currently afforded protection and for which management is currently being applied. In many cases very little structured science is being conducted to evaluate what may be the conservation needs of these candidate species and whether their conservation needs can be incorporated into the management for species which are already protected. The more work done upfront at the system-wide level, the more flexibility will become available. However, it is also important to determine whether there already exists sufficient information to develop starting points for actions, within an adaptive management framework, to avoid crisis. An advance on investment in terms of money, human resources, and collaborative process will likely save money and resources in the long-term.

Secondly, those agencies and stakeholders that are involved in these highly complex issues must choose to deviate from positional and advocacy science and enter into a collaborative process in order to develop viable adaptive management programs. Only cooperative collaboration will provide certainty for all sides. This will require that agencies assume some short-term risk for long-term gains in knowledge and management flexibility. For stakeholders, it requires assuming some risk of short-term impacts in order to establish longer-term management flexibility and stability.

Third, in order to have a sustainable and defensible process and outcome, the development of adaptive management programs must be transparent and subject to outside review. Only through "ownership" and understanding will all the parties accept and buy-into the results. As long as people are focusing on interpreting results that flow from an agreed upon program, progress can be made. If there is suspicion because the program was developed by a smaller subset of the community, other interested parties will want to focus on why or how results were obtained rather than focusing on the results

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themselves. If done properly, outside independent review will validate the program and insulate and defend against the extremes. Independent outside review gives any involved party the legitimacy to accomplish needed change if that is what the science supports.

Lastly, science should focus on mechanisms and ecological processes leading to desired outcomes rather than the setting of precise criteria. Knowing what you want to achieve and the mechanisms (physical or chemical processes, etc) that are relevant to the objectives allows for a reasonable starting point from which to assess and manage change. By establishing this type of approach, agencies and stakeholders can react to unusual circumstances without violating the boundaries of the regulatory construct. It is also an admission that we probably don't know enough about these large systems to give the definitive answer today or even tomorrow. The bottom line from the agency perspective is that decisions must be made and starting points must be established. Other interested parties must be assured that the starting points are reasonable and that agencies will respond to information, even if it means moving away from prior established positions.

Your author thanks Patrick Leonard for his review and editorial advice on this paper.

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CENTRAL VALLEY PROJECT: No Jeopardy BiOp

On October 22, 2004, NOAA Fisheries released its Biological Opinion (BiOp) on the effects of the proposed long-term **o**perations, **c**riteria **a**nd **p**lan (OCAP) for on-going operations of the Central Valley Project (CVP) in conjunction with the California State Water Project (SWP). A preliminary BiOp was included on the effects of future operations in the south Delta region. The BiOp addresses effects on: endangered Sacramento River winter-run Chinook salmon; threatened Central Valley spring-run Chinook salmon; threatened Central Valley steelhead; threatened Southern Oregon/Northern California Coast coho salmon; threatened Central California coast steelhead — and their designated habitat in accordance with section 7 of the ESA.

The CVP, administered by the Bureau of Reclamation (Reclamation), includes 20 reservoirs, 500 miles of major canals and aqueducts, and 12 **m**illion **a**cre-**f**eet (MAF) of storage capacity. The SWP, administered by the California Department of Water Resources (DWR) includes facilities storing 3.5 MAF. Project operations alter the quantity, timing, and quality of water passing through the Central Valley into the San Francisco Bay/Sacramento-San Joaquin Delta estuary (Delta). The Project affects the conditions under which juvenile and adult salmonids migrate through the river reaches and spawn and rear downstream.

The BiOp states: "[B]ased upon the best available scientific and commercial information available, the current status of the species, the environmental baseline for the action area, and our analysis of the effects of the proposed action, including cumulative effects, NOAA Fisheries has determined that the Project, as proposed, is not likely to jeopardize the continued existence" of the five fisheries "or result in the destruction or adverse modification of designated critical habitat for Sacramento River winter-run Chinook salmon or SONCC coho salmon." NOAA Fisheries also stated: "our preliminary conclusions based on early consultation regarding the effects of prospective actions to implement Project Integration and the South Delta Improvement Program (SDIP) are that including these prospective actions in the Project is not likely to jeopardize the continued existence [of the five fisheries] or result in the destruction or adverse modification of designated critical habitat for Sacramento River winter-run Chinook salmon or SONCC coho salmon." NOAA Fisheries went on to note that in regard to future operations in the south Delta region (SDIP), when "Reclamation and DWR are prepared to implement these prospective actions, you must request in writing that NOAA Fisheries confirm our preliminary biological opinion as a final biological opinion."

NOAA Fisheries noted that incidental take of Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, and Central Valley steelhead is expected. Incidental take statements included in the BiOp "identify specific terms and conditions that Reclamation and DWR must comply with to minimize take of listed salmonids resulting from implementing the long-term CVP and SWP operations, criteria and plan, and the prospective actions to implement project integration and the SDIP." From NOAA Fisheries October 22 Letter.

For info: James H. Lecky (NOAA Fisheries), 562/ 980-4015, BiOp & 10/22/04 Letter website: http://swr.nmfs.noaa.gov/

NORTHWEST WATER QUALITY DATA EXCHANGE

EASY ACCESS REGIONAL INFO AVAILABLE ON-LINE

by Janet Gillaspie, Environmental Strategies, LLC

Data Sources

The Pacific Northwest Water Quality Data Exchange (the Exchange) is a new water quality regional data network funded by the US Environmental Protection Agency (EPA) and designed in part by the Oregon Department of Environmental Quality (ODEQ). The Exchange pulls data from a variety of sources and generates a single report. Currently, information related to water quality, soil, sediment, aquatic populations, and fish tissue are available through the Exchange. The data is being drawn from ODEQ private drinking water well information (related to real estate transactions), Washington Department of Ecology, and Idaho DEQ databases. The Exchange is working with the Alaska Department of Environmental Conservation to include Alaskan data gathered by tribes, universities, and volunteer groups. The Exchange is seeking additional partners to include ambient water quality data collected by regional governments, other state and federal agencies, volunteer groups, and municipalities. Federal agencies have also expressed interest in using the system and to share their data, including reporting water quality data for the 303(d) list of streams that may not meet water quality standards.

Variable QA/QC

The project staff has handled data quality issues by giving the ultimate user of the data the ability to decide the level of data quality they need for answering their specific question. The system does not set data quality assurance and quality control (QA/QC) standards. Rather, it includes the information on the QA/QC elements of the specific data and associated documents so that the end user can make their own decision about using the data.

Internet-Based Access

Search Parameters

Access to the Exchange is internet-based. [see internet site: http://deq12.deq.state.or.us/pnwwqx] The search engine is geared towards serving the environmental scientist.

DATA BASE SEARCHES MAY EMPLOY ANY COMBINATION OF THESE PARAMETERS:

- Project data
- Location
- Results criteria (e.g., date, analyte, etc.)

Mapping

A demonstration query pulled up groundwater data for a local-scale area selected from a map of Oregon, Washington, and Idaho. The search targeted groundwater data for nitrate concentrations over the past two years. In less than one minute, the Exchange had the information. It identified 12 projects from four data base sources. This included 269 locations with latitude and longitude information (some specific addresses) and information about specific wells. In all, the inquiry brought up 567 results — over 12 pages of data. These results can be mapped at the click of a button on the field screen. Additional information includes the sample methods used collecting the data, along with detection levels and data quality control/quality assurance information. The data can be exported into an Excel spreadsheet or Access database.

The system has an abundant capacity to accommodate more use.

Next Steps

Adding Data

The next step in the Exchange project is to engage additional partners — e.g., municipalities; state and federal agencies; watershed councils; and volunteer groups — to share their data with the exchange. After incorporating this next round of additional information, the Exchange plans to focus on determining how best to accomplish data integration with EPA's "STORET" database (STORET interface with other computer and database systems has proven difficult in a number of cases).

ODEQ will also be developing avenues for smaller organizations — such as watershed councils — to more easily interface with the data exchange.

Funding Needs

Funding

ODEQ has funding for the data exchange until June of 2006, according to ODEQ's Mitch West. He estimates that the ongoing expenses for the network are about $4,000 – 5,000 per year in hardware and roughly one-quarter of a full-time staff position. West is hopeful that EPA will continue to fund the program, or that the ODEQ Water Quality Division will find alternative funding.

"We are really hopeful that this information technology initiative turns into a water quality initiative. This is a great water quality project. But, if the folks in water quality don't see the value, well then, there is no sense in keeping the system going…," West stated.

FOR ADDITIONAL INFORMATION:

CURTIS CUDE, ODEQ, 503/ 229-6086 or email: cude.curtis@deq.state.or.us

EXCHANGE INTERNET SITE: http://deq12.deq.state.or.us/pnwwqx

WATER BRIEFS

GW SETTLEMENT ID
PURCHASE OF SURFACE RIGHTS

An interim committee of Idaho lawmakers working to prevent a water crisis in the Magic Valley has authorized efforts to determine the level of interest among water users that might be willing to sell their water rights as part of a proposed settlement agreement being considered by the Expanded Natural Resources Interim Committee. The interim committee unanimously passed a motion to finalize and distribute Requests for Proposals to holders of water rights above Hells Canyon Dam, to identify willing sellers and potential prices, possibly as early as November 1. Interested water right holders would have a month to submit their proposal back to the state to be evaluated before the legislative session.

Acquisition of water rights is one element of the proposed settlement agreement intended to reduce pressure on the East Snake Aquifer by creating an annual positive change in the aquifer's ground water supplies of 600,000 to 900,000 acre-feet (AF), stabilizing discharge in the Thousand Springs area and other surface water supplies. If water rights acquisition proceeds, as much as 220,000 to 280,000 AF of natural flow or storage water rights would be purchased to help meet remaining demands and avoid a potential legal battle between surface and ground water users. The Idaho Water Resources Board would administer the acquisition program and the purchases would be paid for with revenue bonds issued by the board or other potential means.

The interim committee also passed another motion supporting efforts of a working group put together by the Farm Service Agency, which is considering a proposal to place 100,000 acres of Idaho farm ground in a Conservation Reserved Enhancement Program (CREP). The CREP proposal sets a goal of conserving as much as 200,000 AF of water and is another component of the proposed settlement.
For info: Katharine Gerrity or Toni Hobbs, Legislative Services Office, 208/ 334-2475.

NOAA DRAFT PLAN REGION

NOAA Fisheries has drafted a new Strategic Plan to guide stewardship activities for living marine resources over the next five years, 2005 to 2010. This draft plan has been put together as a starting point and the NOAA Fisheries' Draft Strategic Plan 2005-2010 is now out for review and comment. The comment period will remain open through November 30, 2004. All comments on NOAA Fisheries' draft plan should be sent to strategic.planning@noaa.gov; include the words "Comments on Fisheries' Strategic Plan" in the subject line.
For info: Brian Pawlak, 301/ 713-1346 x190, or email: Brian.Pawlak@noaa.gov

REGIONAL WATER PLAN NM
LOWER RIO GRANDE

In an effort to plan for an adequate water supply in relation to projected demand for a specific region of the state — including during drought conditions that have been experienced across New Mexico over the last several years — the New Mexico Interstate Stream Commission yesterday accepted the Lower Rio Grande Regional Water Plan. The state's regional water planning process provides a forum for water users, local governments, businesses, and interested citizens to have input into the development of the regional plan.

The Lower Rio Grande water planning region is located in south central New Mexico in the Rio Grande Basin north of the Texas border. The Lower Rio Grande Regional Plan included input from representatives from the City of Las Cruces, Elephant Butte Irrigation District, New Mexico State University, Dona Ana County, Dona Ana Mutual Domestic Water Consumers Association, the Village of Mesilla, the Berino Mutual Domestic Water Consumers Association and the Village of Hatch.

Most of the water supply is used by agriculture and is stored in Elephant Butte Reservoir. Municipalities and other entities use groundwater, which is directly linked to the surface water system. The plan addresses projected demand for public water supply and other needs, which are expected to grow significantly due to rapidly growing municipal entities in the region. The plan also addresses future challenges to managing water resources in the region including water conservation, reclaimed water watershed management, desalination, aquifer storage and recovery, capture of storm water, a surface water diversion and treatment system, and other options.

The plan was developed with a number of grants from the Interstate Stream Commission totaling more than $437,000. The Lower Rio Grande Water Users Organization contributed matching funds and in-kind services. The plan will be posted on the Office of the State Engineer's website located at: www.ose.state.nm.us
For info: Karin Stangl, Public Information Officer, Office of the State Engineer/Interstate Stream Commission, 505/ 827-6139.

FED HATCHERY POLICY OR
CALL FOR COMMENT

The National Marine Fisheries Service is calling for public comment as it prepares to write a new EIS for Columbia Basin salmon and steelhead hatcheries funded by the 1938 Mitchell Act to boost harvest opportunities after mainstem dams were constructed. Several new options will likely be reviewed, including the use of some traditional Mitchell Act funding ($11.4 million slated for FY 2005) to help recovery of ESA-listed stocks or moving some hatchery production upstream to better accommodate fisheries such as the tribal harvest area above Bonneville Dam. At present, none of the 18 Mitchell Act hatcheries operate above The Dalles Dam. Other issues likely to be discussed are the possibility of changing the numbers and species of salmon and steelhead produced, and emphasizing an increase in harvesting fish in certain areas.

Other topics that will be discussed in the EIS are hatchery/wild fish interactions, tribal trust responsibilities, and effects of the hatchery fish on the cultural and economic life of tribal communities. The draft EIS is expected to be completed by Fall 2005, with a final EIS finished by the fall of 2006. Comments must be

received by NOAA Fisheries no later than December 2, 2004. Send correspondences to Allyson Ouzts, 525 NE Oregon St., Suite 510, Portland, OR 97232. Comments can also be sent via fax to (503) 872-2737, or via e-mail to MitchellActEIS.nwr@noaa.gov
For info: NMFS website: www.nwr.noaa.gov/1srd/Propagation/MAHatchEIS/

CALFED BILL SIGNED CA

On October 25, President Bush signed the historic Water Supply, Reliability and Improvement Act reauthorizing the state-federal CALFED Bay-Delta Program. The legislation authorizes a total of $389 million to the program through 2010 for water supply, water quality, flood control and environmental restoration efforts. The complete bill can be viewed at the website listed below.

The state-federal CALFED Program is set to implement a multi-year plan for restoration of the Sacramento-San Joaquin Bay Delta ecosystem while making improvements in statewide water supply, flood control and water quality. The bill will bring four new surface storage reservoir studies to completion. It also funds work at the Salton Sea, fish survival improvements at Folsom Reservoir, and a feasibility study at Alder Creek in El Dorado County.
For info: Patrick Wright, Director, California Bay-Delta Authority, 916/ 445.5511, website: http://calwater.ca.gov/

CONSERVATION REPORT TX
BMP GUIDE

A comprehensive report to the Texas Legislature has been issued by the Water Conservation Implementation Task Force endorsing the effective and efficient utilization of voluntary water conservation, including water reuse. The Task Force determined that such conservation is critical for the water supply needs of future generations of Texans to be met. The Task Force proposed a number of integrated actions and recommendations in their report that they believe will, if adopted, provide a solid foundation for fully implementing the water conservation strategies adopted in current and future State Water Plans. The impetus for the Task Force was the 2002 State Water Plan's finding that the inability of current water sources to meet demands for water during drought conditions will increase from 2.4 million acre-feet per year (AFY) in 2000 to an estimated 7.5 million AFY in 2050.

In addition to the water conservation report, a separate Best Management Practices Guide was developed for use by planning groups and political subdivisions responsible for water delivery service. The BMP Guide consists of 21 municipal, 14 industrial, and 20 agricultural BMPs. The practices contained in the BMP Guide are voluntary efficiency measures that save a quantifiable amount of water, either directly or indirectly, and that can be implemented within a specific timeframe.
For info: To review a copy of the Report to the Legislature and the BMP Guide, go to the Texas Water Development Board's website: www.twdb.state.tx.us/home/index.asp

COLUMBIA INITIATIVE WA

Governor Locke of Washington remains committed to proposing a new state water management program for the Columbia River mainstem. The Initiative involves two main ideas: (1) securing and dedicating water to the Columbia River mainstem that will benefit fish and will allow the state to authorize new off-stream uses that are mitigated by this water; and (2) state investment to secure the water, offset by annual mitigation payments from new water users.

The Department of Ecology (Ecology) has been studying ways to support water rights that can be interrupted during drought years or during periods of low flow crucial to the survival of salmon. Ecology commissioned two studies to help the agency craft a new management program for the Columbia River. An analysis conducted by the National Academy of Sciences (NAS; released in March 2004; see Brief, TWR #2), along with an economics study prepared by the University of Washington (released in December 2003). The NAS report cautioned the agency on allowing new water withdrawals during low flow periods; the economic report predicted new withdrawals would result in substantial economic growth for the region.

Ecology is currently working on a comprehensive implementation package that will include: (1) negotiated agreements with the Bureau of Reclamation, the Columbia Basin irrigation districts, the Colville Tribes and others to secure water; (2) an executive request policy bill allowing for full legislative consideration of this approach; (3) a substantial budget initiative to fund water acquisition and to begin to move towards new off-channel storage; and (4) a proposed draft rule to implement the policy bill and to comply with the terms of a legal settlement with the Columbia Snake irrigators.

The current administration does not plan to adopt a final rule. The State will put all the features in place for decisions and actions by the incoming legislature and the new administration. A formal public comment period to address issues in the rule will be scheduled as a part of the agency's rule-making process. Visit the Columbia River Initiative website for more CRI information or to see a copy of the draft rule: www.ecy.wa.gov/programs/wr/cri/crihome.html
For info: Bari Schreiner, Ecology Rules Div, 360/ 407-6998 or email: CRI@ecy.wa.gov

WATERWAYS DATA CA
QUANTITY & QUALITY

A comprehensive access point for data related to the health of California's waterways has been created at www.baydelta.ca.gov. The website has been enhanced to allow state waterways information to be available to users on an ongoing basis. The California Resources Agency in partnership with the California Environmental Protection Agency (Cal/EPA), the Department of Water Resources (DWR), the State Water Resources Control Board and the Moss Landing Marine Laboratory have created a central location where

WATER BRIEFS

waterways data may be retrieved.

Previously, factual information had been located among various agencies making the data difficult to locate and retrieve. Inconsistent formats also required even more time to merge the data before analyses could be done. More than 50 other organizations currently contribute data voluntarily to the website. In addition, state agencies and Moss Landing Marine Laboratories are using their combined resources to include information from groups throughout the state in an ongoing expansion of their data sharing process.

The Resources Agency's CERES system (http://ceres.ca.gov/) facilitates the overall process by cataloging the various environmental monitoring programs throughout the state. Cal/EPA is working with EPA to integrate the state's environmental regulatory data. DWR manages data sharing for the network and provides distribution services to support the system. The SWRCB created the Surface Water Ambient Monitoring Program (SWAMP) that along with Moss Landing Marine Laboratories is gathering and combining data about surface water quality. SWAMP has developed standards required for water boards, or any group collecting environmental monitoring data. More information on the SWAMP Program is available at: http://www.swrcb.ca.gov/swamp

This effort will expand the information currently available through the California Data Exchange Center (CDEC). CDEC makes available river flow, snow survey, weather, and Delta water quality and related information at: http://cdec.water.ca.gov

For info: Karl C. Jacobs, DWR Environmental Services, 916/ 227-0435 or email: kjacobs@water.ca.gov

FERC RELICENSING OR KWUA INTERVENTION

The Klamath Water Users Association (KWUA) recently formally filed its motion to intervene in the relicensing proceedings associated with the Klamath Hydroelectric Project in southern Oregon and northern California. At issue is PacifiCorp's application for a new license for the hydro project, which it operates pursuant to a 50-year license with the Federal Energy Regulatory Commission (FERC) that expires in March 2006. See also TWR #4 regarding a lawsuit by the Klamath Tribes against PacifiCorp.

As a condition to the current license, FERC required PacifiCorp to enter into a contract with the Bureau of Reclamation (BOR) that governs certain operational, water and power issues. Pursuant to the contract, BOR and KWUA members purchase electrical power from PacifiCorp at a specified rate. FERC imposed this condition on the current license in response to a mandatory condition submitted by the US Department of Interior.

KWUA has an interest in ensuring that its members continue to have access to an adequate supply of low-cost electrical power. The association also has a similar interest in ensuring that its members' access to adequate water supplies (to meet their irrigation and domestic needs) is not hampered by the future operation of the Klamath Hydroelectric Project. The environmental and operational aspects of PacifiCorp's license application could directly or indirectly affect water use throughout the Klamath River Basin.

KWUA's position is that FERC should reject the license application submitted by PacifiCorp unless FERC once again requires, as a condition of the new license, that PacifiCorp renew its contract with Reclamation with substantially similar terms.

For info: Dan Keppen, KWUA, 541/883-6100, website: www.kwua.org

POLLUTION DETECTION US EPA WITHDRAWAL

EPA is withdrawing its March 2003 proposal to revise detection and quantitation procedures used in water permitting and monitoring in Clean Water Act (CWA) programs and allowing the existing 1986 procedures to stand. The existing procedures are being left in place in order for EPA to conduct additional discussions with stakeholders on remaining technical issues related to quantitation and detection. Detection indicates the presence of a pollutant in a sample, while quantification indicates how much of the pollutant is in the sample. Detection and quantitation procedures apply to all chemical analytical methods under the Clean Water Act. The procedures are a way to calibrate, or pre-test, laboratory instruments to confirm that they accurately measure a specific chemical pollutant in a water sample. The procedures allow the lab to determine how well the instrument detects (the presence of a pollutant) and quantifies (the amount of that pollutant) a chemical in a water sample. Each laboratory must prove to the permitting authority (states, regions, or tribes) that it can operate within these specifications. The Agency will announce in December how stakeholder discussions will proceed. EPA is also releasing a revised assessment document entitled "Revised Assessment of Detection and Quantitation Approaches," which completes the terms of a settlement agreement with industry petitioners. Information about both actions is available at: www.epa.gov/waterscience/methods/det

For info: William Telliard (EPA) email: telliard.william@epa.gov

KLAMATH AGREEMENT OR

On October 13, Interior Secretary Gale Norton, California Resources Secretary Mike Chrisman and Oregon Natural Resources Adviser David Van't Hof announced an agreement. The "Klamath River Watershed Coordination Agreement" is designed to be a template for a coordinated approach to allocating existing resources between state and federal agencies dealing with fish, wildlife and agriculture issues in the Klamath Basin in southwest Oregon and northern California. It is intended to work in conjunction with a US Bureau of Reclamation program, called the Conservation Implementation Program.

For info: For a copy of the agreement, go to: http://www.doi.gov/news/klamathagreement.pdf

WATER BRIEFS

PERCHLORATE FUNDING US
DEMO PROJECTS

The Department of Defense, through the Environmental Security Technology Certification Program (ESTCP), will be funding demonstration projects for treatment of perchlorate in drinking water. The objective of this effort is to evaluate alternative technologies that can significantly reduce the costs of removing perchlorate for large-scale drinking water treatment. ESTCP intends to fund multiple demonstration projects through this competitive selection process. The demonstrations will be conducted at a number of selected public water supply utilities in southern California that have been impacted by perchlorate. The due date for these pre-proposals is November 18, 2004.

For info: ESTCP website: www.estcp.org/opportunities/solicitations/

TMDL LAWSUITS US
EPA WEBSITE

EPA has a website devoted to "TMDL Lawsuit Information" that contains a summary of recent TMDL litigation with links to the various cases and EPA press releases. The site also gives a summary of TMDL litigation by state.

For info: EPA website: www.epa.gov/owow/tmdl/lawsuit.html

WATER STORAGE WA
WASHINGTON STATE GRANTS

In the 2004 supplemental budget, the Washington Legislature provided $9.65 million to the Department of Ecology to fund several water-storage projects, including $4 million for the Yakima River Basin Water Storage Feasibility Study and $2.24 million for a first phase study to restore fish habitat in Manastash Creek in Kittitas County. In addition, Ecology, in partnership with the state departments of Agriculture and Fish and Wildlife approved four early-implementation storage projects: 1) $500,000 to the city of North Bend in King County. The grant will help defray the cost of either pumping water from a nearby deep underground water source into the Snoqualmie River or constructing a pipeline to carry water from the Cedar River to the Snoqualmie; 2) $450,000 to the East King County Regional Water Association. The grant will be used to pay for pumping water from an underground source in the upper Snoqualmie system during low-flow and put it directly in the river to help salmon migration. The association will monitor how the aquifer is replenished during wet months; 3) $350,000 to Walla Walla County to see whether two river-basin sites are suitable to store water under ground in the future; and 4) $200,000 for the Columbia River Initiative.

In November 2003, Ecology solicited proposals for water-storage projects to be submitted by January 2004. The department received 15 proposals requesting funding totaling $3,745,020. The following proposals were approved to receive water-storage study grant funding: 1) $450,000 to the Chelan County Conservation District to study how underground and surface waters interact, including how area aquifers are replenished, and to evaluate where and how water-storage sites might be developed along the Entiat River; 2) $300,000 to Yelm (Thurston County) to study the viability of storing water underground to augment flows in Yelm Creek or to replenish the Nisqually River aquifer; 3) $285,000 to the Stevens County Public Utilities District to cover survey work and engineering evaluations for diverting spring runoff from Loon Lake to an existing gravel pit or new infiltration trenches; 4) $75,000 to the Stevens County Public Utilities District to conduct hydrologic and environmental studies to determine whether to construct multiple ponds or a single large water-storage facility on private property owned by the Walter Davis family on Sheep Creek; 5) $275,000 to the city of Walla Walla to extend the geographic boundaries of its existing groundwater-modeling study area to explore potential effects of storing water underground and how recovering the water might influence regional underground and surface-water resources; 6) $250,000 to the Agnew Irrigation District (Clallam County) to design the Atterberry Irrigation Reservoir that would store about 500 acre-feet of water. Additional funds may be required to complete an environmental impact statement and pay permitting costs; and 7) $200,000 to the Asotin County Public Utilities District to assess if storing water in shallow aquifers in the Tucannon or Clarkston valleys during the wet season can help maintain flows in the Tucannon River during drier times of the year.

For info: Ecology website: www.ecy.wa.gov/programs/wr/asr/wsgp.html

NEW RULES & REGS NM
NEW MEXICO SURFACE WATER

Proposed new Rules and Regulations for Administration of Surface Water in New Mexico were posted for public review November 4th on the State Engineer's website. The administrative hearing on the proposed rules and regulations was held last June. On Nov 3, the State Engineer decided to extend the period to entertain public comments for 30 more days. The new deadline for receiving public comments will be Dec 3, 2004. "We encourage suggestions for improvement of this draft, which will be helpful in revising these proposed rules and regulations," said State Engineer John D'Antonio. "Revisions were necessary because the existing regulations did not adequately address additions to state law, revised methods in accounting for the state's waters, nor the conjunctive management of surface and underground water." These proposed rules and regulations, which will govern effective management of surface waters throughout the state, were last updated in 1953.

The Proposed New Mexico Surface Water Management Rules and Regulations can be downloaded from the Office of the State Engineer website at: www.ose.state.us Written comments should be e-mailed to publiccomments@ose.state nm.us or mailed to: Office of the State Engineer, Attn: Paul Wells, PO Box 25102, Santa Fe, NM 87504.

For info: Karin Stangl, Public Information Officer, 505/ 827-6139.

CALENDAR

November 15-16 DC
Toxic Substances Control Act (TSCA) Compliance Course, Washington DC. Regulating the Manufacture, Distribution & Use of Chemicals. For info: ABS Consulting, 800-769-1199 or website: absconsulting.com/gi

November 16 OK
Oklahoma Environmental Quality Board Meeting, Miami, Miami Civic Center, 129 5th Street NW. For info: Jimmy Givens (DEQ), 405/ 702-7100, website: http://www.deq.state.ok.us/mainlinks/press.htm

November 16-17 OR
16th Annual Northwest Environmental Conference & Tradeshow, Portland, Jantzen Beach DoubleTree Hotel. For Government, Industrial, Agricultural, Business and Others. For info: Conference-EWE ME, 244-4294 x202; Tradeshow-Cara Bergeson, NEBC, 503/ 227-6361. Website: www.nwec.org

Nov 16-18 ID
Northwest Power and Conservation Council Meeting, Coeur d'Alene, The Coeur d'Alene Resort, 1st Street & Sherman Avenue, For info: NWPC, 800/ 452-5161, email:info@nwcouncil.org, website: www.nwppc.org/

November 16-19 AZ
Transboundary Waters Management Symposium, Tucson, Sponsored by U. of Arizona's Center for Sustainability of semi-Arid Hydrology and Riparian Areas (SAHRA), RE: Transboundary Issues of National, State, Tribal and Other Borders. For info: Rannie Fox (SAHRA), 520/ 626-6974, email: rannie@sahra.arizona.edu, website: www.sahra.arizona.edu/twm/

November 17-19 OR
"Growing Healthy Watersheds" OWEB 8th Biennial Conference, Ashland, Windmill Inn, RE: Growing Organizations, Fundraising, Growing Communities, Planning for Watersheds, Restoration. For info: Oregon Watershed Enhancement Board. For info: Bonnie King, 503/ 986-0181, or website: www.oweb.state.or.us/

November 18 CA
State Water Resources Control Board (Cal EPA), Sacramento, 1001 I Street (Coastal Hearing Room), 10am. For info: Debbie Irvin, Clerk, 916/ 341-5600, email: dirvin@swrcb.ca.gov, website: www.swrcb.ca.gov/wksmtgs/schedule.html

November 18-19 TX
Texas Groundwater 2004: Towards Sustainability, Austin. For info: website: www.txstate.edu/iiswr/groundwater2004/index.html

November 19 CO
Colorado Ground Water Commission Meeting, Parker, Parker Water & Sanitation District, 18100 E. Woodman Drive (NW Corner of E-470 and Parker Road), RE: Aquifer Storage & Artificial Recharge; Permanent Well Set Aside through EQIP Program; Rulemaking on New Appropriations in Republican River Basin; Future Legislation; Attorney General Rept.; Management District Repts. For info: Marta Ahrens, 303/ 866-3581, email: marta.ahrens@state.co.us, website: http://water.state.co.us/cgwc/

Nov 30-Dec 3 CA
"California's Water Workout: Who Will Do the Heavy Lifting?" ACWA Fall Conference & Exhibition, Palm Springs, Wyndam Hotel and Convention Center, RE: Water Quality, Attorney, Finance, Groundwater and Small Agencies Tracks. For info: Ellie Meek, 888/ 666-2292, email: elliem@acwnet.com, website: http://acwanet.com/events/futureconf.asp

December 1 NM
New Mexico Water Trust Board Meeting, Albuquerque, Capitol - Room 309, 1:00 pm. For info: Chrissy Salazar (Meeting Coordinator), 505/ 984-1454, email: csalazar@nmfa.net

December 1-3 OR
"To Move Toward Balance" Oregon Water Resources Congress, Hood River, Hood River Inn, Clean Water Act, Federal 411, Tribal Rights, Litigation Update, 2005 Legislation, Federal Affairs, Sustainability, Water Marketing & Banking, ESA & Sound Science. For info: OWRC, 503/ 363-0121, website: www.owrc.org

December 1-3 WA
"Keeping the Water Flowing" Washington State Water Resources Association Annual Meeting, Spokane, Davenport Hotel, RE: Clean Water Act Compliance (12/1 Workshop); Technical, Legal & Political Aspects of Water; NW Power Issues; Washington Water Case Law; Ecology Programs; Odessa Sub-Area Aquifer. Speakers: Interior Secretary Gale Norton, BOR Director John Keys. For info: WSWRA, 360/ 754-0756, or website: www.wswra.org

December 1-3 CA
Fall Conference and Exhibition, Association of California Water Agencies, Palm Springs, Wyndham Hotel, Speakers: Lester Snow, Director of California Depart. of Water Resources, Senator Jim Brulte, former Senate Republican leader. For info: ACWA, Ellie Meek, 888/ 666-2292, email: elliem@acwanet.com, website: www.acwanet.com/events/FC04_conference.asp

CALENDAR

December 2-3 CA
Endangered Species Act and Habitat Conservation Planning – 11th Annual Conference, San Francisco, Fairmount Hotel, RE: Bush/ Schwarzenegger Administration Perspectives on the ESA, Incidental Take Permitting Under Sections 7 & 10, Science & ESA, Implication for Local Government, Regional Habitat Conservation Plans, ESA Innovation, Incentives and Techniques. For info: CLE Int'l, 800/ 873-7130, website: www.cle.com

December 2-3 ID
Idaho Water Resources Board, Boise. For info: IWRB, 208/ 327-7880

December 2-3 CA
California Fish & Game Commission Meeting, Monterey, The Beach Resort, 2600 Sand Dunes Drive, 12/2: 10am, 12/3: 8:30am. For info: CFGC, 916/ 653-4899, website: www.fgc.ca.gov/ 2004/2004mtgs.html

December 2-3 Canada
Watershed Protection Seminar: Planning for the Future of Source Water, Winnipeg, Canad Inns Fort Garry, 1824 Pembina Highway, Sponsor: American Water Works Association. For info: AWWA, 800/ 926.7337 website: www.awwa.org/

December 6 OR
Environmental Mediation and Ethics, Portland, World Trade Center Two (Mezzanine Level) Sponsored by the Environmental Law Education Center, RE: Environmental and Natural Resources Mediation, Environmental Law Ethics. For info: ELEC, 503/ 282-5220, email: hduncan@elecenter.com, website: www.elecenter.com

December 7 NM
Interstate Stream Commission Meeting, Santa Fe, RE: Agenda posted on website November 29th. For info: Karin Stangl, Public Information Officer, 505/ 827-6160, website: www.seo.state.nm.us/ calendar/isc/isc-menu.html

December 9-10 OR
Oregon Environmental Quality Commission (EQC) Meeting, Portland, DEQ Headquarters, 811 S.W. Sixth Avenue. For info: Mikell O'Mealy, DEQ, Office of the Director, 503/ 229-5301

December 10 OR
Willamette River 2004 Conference, Portland, World Trade Center Two (Auditorium), Sponsored by Environmental Law Education Center, RE: Superfund, Endangered Species Act, Clean Water Act, Intersection of Laws, Regulatory Programs and Creative Compliance Strategies. For info: Holly Duncan, 503/ 282-5220, email: hduncan@elecenter.com, website: www.elecenter.com

December 10 OR
Oregon Fish & Wildlife Commission Meeting, Salem, 8 am. For info: Director's Office, 800-720-6339, website:www.dfw.state.or.us

December 10 UT
Board of Water Resources Meeting, Salt Lake City. For info: Utah Division of Water Resources, 801/ 538-7230, website: www.water.utah.gov/ board/default.asp

December 12-15 NV
2004 NGWA Ground Water Expo, Las Vegas, Las Vegas Hilton, RE: Drilling and Well Construction, Water Quality and Treatment, Water Systems, Business Management, Safety/Compliance, Monitoring Logging & Geology, Groundwater Availability, Modeling, & Much More. For info: NGWA, 800/ 551-7379, website: www.ngwa.org/e/ expo/0412126010.shtml

Dec 14-16 OR
Northwest Power and Conservation Council Meeting, Portland. For info: NPPC, 800/ 452-5161, email:info@nwcouncil.org, , website:www.nwppc.org

December 15-17 NV
"Pushing The Limits" Colorado River Water Users Association 59th Annual Conference, Las Vegas, Caesar's Palace, RE: Conflict, Goodwill & Resolution, Basin Impacts & Drought Perspectives, Compact Survive the Drought, Arizona Odd Man Out, Forecasting the Colorado, CWA & ESA: Threats to Western Water Use, Desalinization, & Much More. For info: CRWUA, 760/ 398-2651, website: www.crwua.org

2005

January 5 NM
New Mexico Water Trust Board Meeting, Location TBA. For info: Chrissy Salazar (Meeting Coordinator), 505/ 984-1454, email: csalazar@nmfa.net

January 13-14 OR
Water Resources Commission Meeting, Salem. For info: Cindy Smith (OWRD), 503/ 986-0876, website: www.wrd.state.or.us/commission/index.shtml

January 20-21 WA
Endangered Species Act 12th Annual, Seattle, Red Lion on 5th, RE: ESA and Salmon in Washington, DC Politics, Litigation Update, Regulation of Treaty Rights Under ESA, Species and Protection, Evolution of Jeopardy, EPA and Section 7, Critical Habitat, Biodiversity, Innovative Forms of HCPs, ESA Salmon Recovery. For info: The Seminar Group, 800/574-4852, website: www.theseminargroup.net

January 25-26 CO
Colorado Water Conservation Board Meeting, Denver, Location TBA. For info: email:cwcbnews@state.co.us, website: http:// cwcb.state.co.us/

January 27-28 CA
California Wetlands 11th Annual Conference, San Diego, Loews Coronado Hotel, RE: 404 Permitting and ESA Issues, Special Area Management Plans, Mitigation Banking, National Wetlands Mitigation Action Plan, Stormwater Regs and Treatment Options, Delineation Issues, California Rapid Assessment Method. For info: CLE Int'l, 800/ 873-7130, website: www.cle.com

(continued from previous page)

January 27-28 TX

Texas Wetlands 15th Annual Conference, Houston, Omni Hotel, RE: Trip Wires to Wetlands Permitting, Riparian Protection and Restoration, Isolated V. Adjacent Waters, Delineation and Emerging Technology, Mitigation Banks, Case Studies, Developer's Perspective, Economic Advantages in Environmental Consideration, Hot Topics, Post SWANCC. For info: CLE Int'l, 800/ 873-7130, website: www.cle.com

January 27-28 NM

Law of the Rio Grande SuperConference: Albuquerque, Hyatt Regency, RE: Feature – River of Complexity: Environmental, Legal, Social & Econ Issues (Kathleen Hartnett White, Chairman, Texas Commission on Environmental Quality), Developing Law of the Rio Grande, New Mexico & Texas Adjudications, Rio Grande Compact, Water Management Strategies, Bilateral Water Issues, Legislative Update, Native American Settlements & Adjudications. For info: CLE Int'l, 800/ 873-7130, website: www.cle.com

February 6-9 AZ

Disinfection 2005, Phoenix, Sponsored by the Water Environment Federation (WEF). Held in cooperation with the Arizona Water Pollution Control Association (AWPCA), American Water Works Association (AWWA), and the International Water Association (IWA)

February 10-11 TN

Dam Removal: Lessons Learned, Knoxville, University of Tennessee, Sponsored by The Environmental & Water Resources Institute of ASCE, RE: Various Aspects of Dam Removal, Communication Across Disciplinary Boundaries, Permitting, Economic Impacts, Biological Impacts, Social/Cultural Impacts, Aesthetics/Recreation, and Geomorphologic/ Hydrologic Impacts. For info: Katie Gorscak, 703/ 295-6371, or website: www.ewrinstitute.org/damremoval04/tennessee/tn_register.cfm

March 6-11 CA

Pacific Fisheries Management Council Meeting, Sacramento, Doubletree Hotel, 2001 Point West Way. For info: PFMC, 866/ 806-2280, website: www.pcouncil.org/

March 7-8 CO

Colorado Water Law: Long-Term Solutions for Acquiring, Using and Protecting Water, 4th Annual Conference, Denver, Marriott City Center Hotel, RE: Well Augmentation Plans, Computer Water Accounting, Denver Water Board View, Integrating Municipal and Agricultural Water Supplies, Statewide Water Supply Initiative, Drought & Colorado River, Compliance Under ESA Sections 7 & 9, Platte River Recovery Implementation, Bypass Flows, Recreation In-Channel Diversion, Ethics, San Luis Valley, Clean Water Act Issues for Water Management, Legislative & Case Law Update. For info: CLE Int'l, 800/ 873-7130, website: www.cle.com

April 6 AZ

"Water and the Environment" Conference, Tucson, Radisson Hotel City Center, Sponsor: Arizona Water Resources Research Center. For info: WRRC, 520/ 792-3124, email: wrrc@cals.arizona.edu, website: www.cals.arizona.edu/azwater

April 11-12 CA

California Water Law and Policy, San Francisco. For info: CLE Int'l, 800/ 873-7130, website: www.cle.com

April 14-15 OR

Water Resources Commission Meeting, Salem. For info: Cindy Smith (OWRD), 503/ 986-0876, website: www.wrd.state.or.us/commission/index.shtml

April 20-22 ID

Western States Water Council Meeting, Boise, For info: WSWC, 801/ 561.5300, website www.westgov.org/wswc/meetings.html

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