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Water Rights, Water Quality & Water Solutions in the West

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STORMWATER RETENTION ON SITE

AN ANALYSIS OF FEASIBILITY AND DESIRABILITY

by Eric W. Strecker, PE, and Aaron Poresky, EIT, Geosyntec Consultants (Portland, OR)

INTRODUCTION

Both nationally and in various localities, there is increasing regulatory pressure to maximize or require the retention of stormwater on site with compliance often linked to matching post-development runoff with predevelopment hydrology.

For example, in California the recently adopted Ventura Municipal Separate Storm Sewer System (MS4) NPDES permit requires retention on site — via infiltration, evapotranspiration and/or harvest and "re-use" — of precipitation from storms ranging up in size to the permit-defined "design storm" (Standard Urban Stormwater Mitigation Plan (SUSMP) depth of 3/4 of a inch — "design storms" are events defined in regulation and reflected in stormwater system design). There is an exception allowed where it is not feasible to retain the entire volume: the project may then retain "only" 70 percent of the SUSMP storm on site and mitigate the remaining volume off site. Another example is the North Orange County permit, which requires that infiltration, evapotranspiration, and/or harvest and re-use be employed to manage the water quality design storm, unless infeasible.

Nationally, the recent Energy Independence and Security Act (EISA) Section 438 requires that any Federal project with over 5,000 square feet of impervious area "maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow." Guidance for compliance with this provision allows either retention of the 90th percentile, 24-hour storm event or a model-based evaluation of discharge rates and volumes, matching predevelopment with post-development runoff hydrology. In effect , both of these conditions mandate substantial on site retention.

These permits/regulations have "narrowed" the traditional definition of Low Impact Development (LID) down to only a few elements — i.e., infiltration, evapotranspiration and/or harvest and use. This narrowing precludes management options present in the broader LID definition, such as detention and bio-filtration in vegetation-based facilities that provide incidental infiltration and evapotranspiration, but have a surface discharge point (e.g. bioretention with underdrains).

Nationally, the US Environmental Protection Agency (EPA) has also limited the definition of LID in some of their various guidance documents. For example, *Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices*, December 2007 (EPA 841-F-07-006) includes the definition: "LID comprises a set of approaches and practices that are designed to reduce runoff of water and pollutants from the site at which they are generated. By means of **infiltration, evapotranspiration, and reuse of rainwater**, LID techniques manage water and water pollutants at the source and thereby prevent or reduce the impact of development on rivers, streams, lakes, coastal waters, and ground water." (Emphasis added) It should be noted that other EPA documents include

Stormwater On Site

LID Definitions

Harvested Water

Natural Balance

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definitions with the broader definition of filtration and surface release (see **Table 1**). It also should be noted that even in the guidance that includes the narrowed definition, in most cases the examples and guidance details include filtration and surface release of runoff.

Table 1. Summary of Filtration and Surface Release Inclusion in LID Definitions and associated guidance

Document/Reference	Filtration and Surface Release	
	In Definition	In Guidance/Examples
Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices, December 2007 (EPA 841-F-07-006)	No	Yes
Low Impact Development (LID) Literature Review, October 2000 (EPA-841-B-00-005	Yes	Yes
Low-Impact Development: An Integrated Environmental Design Approach (Prepared by the Prince George's County Maryland Department of Environmental Resources Programs and Planning Division, with assistance from EPA), June 1999	Yes	Yes
Polluted Runoff (Nonpoint Source Pollution) Low Impact Development (LID), Last updated on Thursday, January 15th, 2009 Additional information from linked factsheet: *Design Principles for Stormwater Management on Compacted, Contaminated Soils in Dense Urban Areas*, April 2008 (EPA-560-F-07-231)	Not Clear	Yes
Low Impact Development (LID) and Other Green Design Strategies, Last updated on October 09, 2008	No	Not Clear

To date, the retention of stormwater on site has been primarily been accomplished via infiltration and, to a much more limited extent, evapotranspiration. Only in a few cases has harvest and use (the authors believe that stormwater that is captured and used is not "re-used") been employed on a site scale (typically as a part of a Leadership in Energy and Environmental Design (LEED) rating process). Uses for harvested water typically include non-potable uses such as irrigation and toilet flushing and in some cases process water for industrial uses.

The feasibility and desirability of retaining stormwater on site up to some design storm level has not been vetted technically on a national or regional scale. For example, in the EPA *Reducing Stormwater Costs* Guidance referenced above there is virtually no assessment via monitoring or modeling information of the potential results of the case studies presented. It is primarily a compendium of antidotal information. There has been almost no consideration of the natural water balance (i.e., predevelopment conditions) in technical guidance or whether infiltrating more volume than occurs under natural conditions (as would tend to result from matching runoff hydrology without matching evapotranspiration) could, in many cases, cause problems. This paper attempts to present some of the considerations for retaining on site to determine whether it is feasible and/or desirable. It focuses on Southern California examples, but the factors discussed are applicable to much of the West and beyond.

It should be noted that "retaining stormwater on site" in its contemporary usage typically only refers to not having surface discharges result from specific "design storm" events. This usage ignores the fact that infiltrated or evapotranspirated stormwater is not actually "retained" on site — it either enters a deeper aquifer, flows as shallow interflow which may emerge elsewhere or, in the case of evapotranspiration, escapes to rain another day.

The authors believe that, while one should try to maximize the retention of stormwater on site, such retention should not be mandated, as site specific circumstances often indictate wiser alternatives.

PERFORMANCE OF STORMWATER BEST MANAGEMENT PRACTICES (BMPs)

General Considerations

In order to assess the performance of stormwater treatment Best Management Practices (BMPs), it is important to understand the range of factors which may impact BMP performance. BMP performance is effected by: runoff patterns; pollutant types and forms; the storage volume and/or treatment rate; the ability to recover storage capacity (for BMPs that rely on storage); the treatment processes for released flows (to surface waters or groundwaters); and operations and maintenance issues that affect the ability of the BMP to continue operations (Strecker, et. al., 2006). For storage-based BMPs, methods for recovering storage capacity include: surface discharge; evapotranspiration; deeper infiltration; and putting the stored water to use. For systems which include cisterns (harvest and use), one of the most critical factors is the ability to quickly recover storage capacity before the next storm event arrives. Typically, if storage capacity cannot be recovered within two-to-four days, then the amount of runoff bypassing storage becomes significant due to the cistern being partially to nearly full.

Stormwater On Site

Storage Capacity Recovery

Weather and Resulting Runoff Patterns

In Southern California and the West Coast in general, precipitation patterns in most urban areas are affected by the presence or absence of a high pressure ridge that in essence blocks-out low pressure storm systems. Typically, once the high pressure ridge is absent a series of storms arrives, delivering "back-to-back" storms until a high pressure ridge re-establishes. Storms arrive about every two to three days during this period. If the storage capacity is not quickly recovered, these back-to-back storms can result in storage-based BMPs that are full or partially full when the next storm arrives, which then causes significant bypass or overflow to occur. In Southern California, most precipitation arrives from December to March. **Figure 1** shows the monthly normal rainfall in Irvine California (and monthly **e**vapo**t**ranspiration (ET)). Monthly normals tend to mask the patterns that occur within specific months in the period of record. **Figure 2** shows a typical precipitation pattern for the same gage, which includes the effect of 'back-to-back" storm events on a weekly timescale in an actual year. These weather patterns indicate that the recovery of storage on a sub-weekly time scale is critical to ensure that sequential storms do not result in excessive bypass or overflow of BMPs. Study of typical storm patterns indicates that storage capacity should be regenerated within two-to-three days to maximize the stormwater management performance when harvesting stormwater.

Precipitation v. "ET"

Figure 1. Monthly Precipitation vs. Monthly Evapotranspiration for Irvine, California.

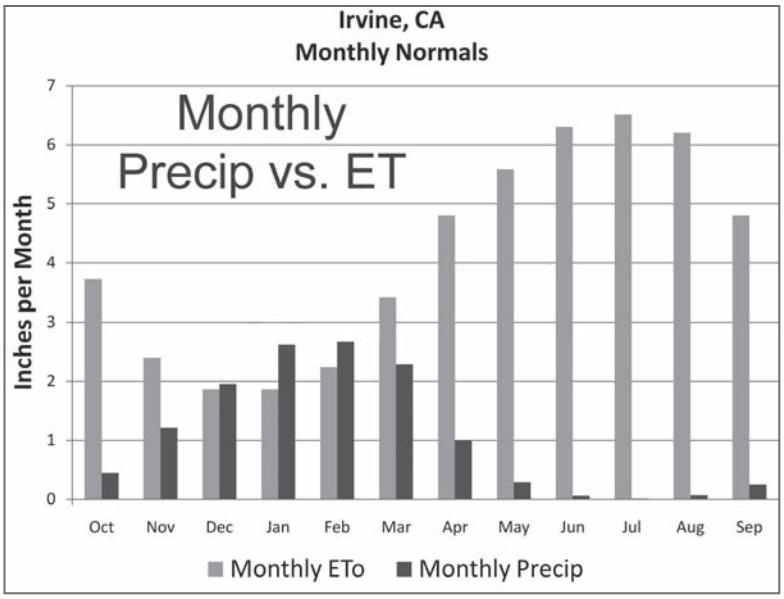
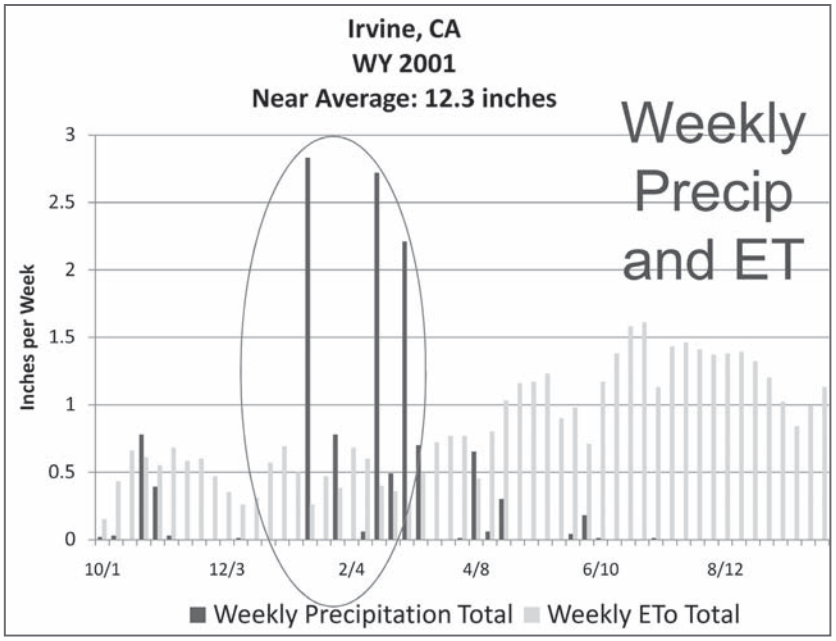


Figure 2. Typical Precipitation Pattern Showing Back-to-Back Storms at Irvine California for a Near Average Water Year.

Precipitation Pattern



Stormwater On Site

Infiltration Issues

Soil Factors

Infiltration Rates & Design

Infiltration is the primary method that is employed to retain stormwater on site. This is because, when it can be accomplished, infiltration is the method most likely to be successful. However, the authors believe that three key questions/issues need to be addressed when considering infiltration strategies if unintended, problematic consequences are to be avoided.

Key infiltration considerations include:

- Can you do it?
- Should you do it and, if so, to what extent?
- If you do employ infiltration, what factors need to be addressed to insure a desirable outcome?

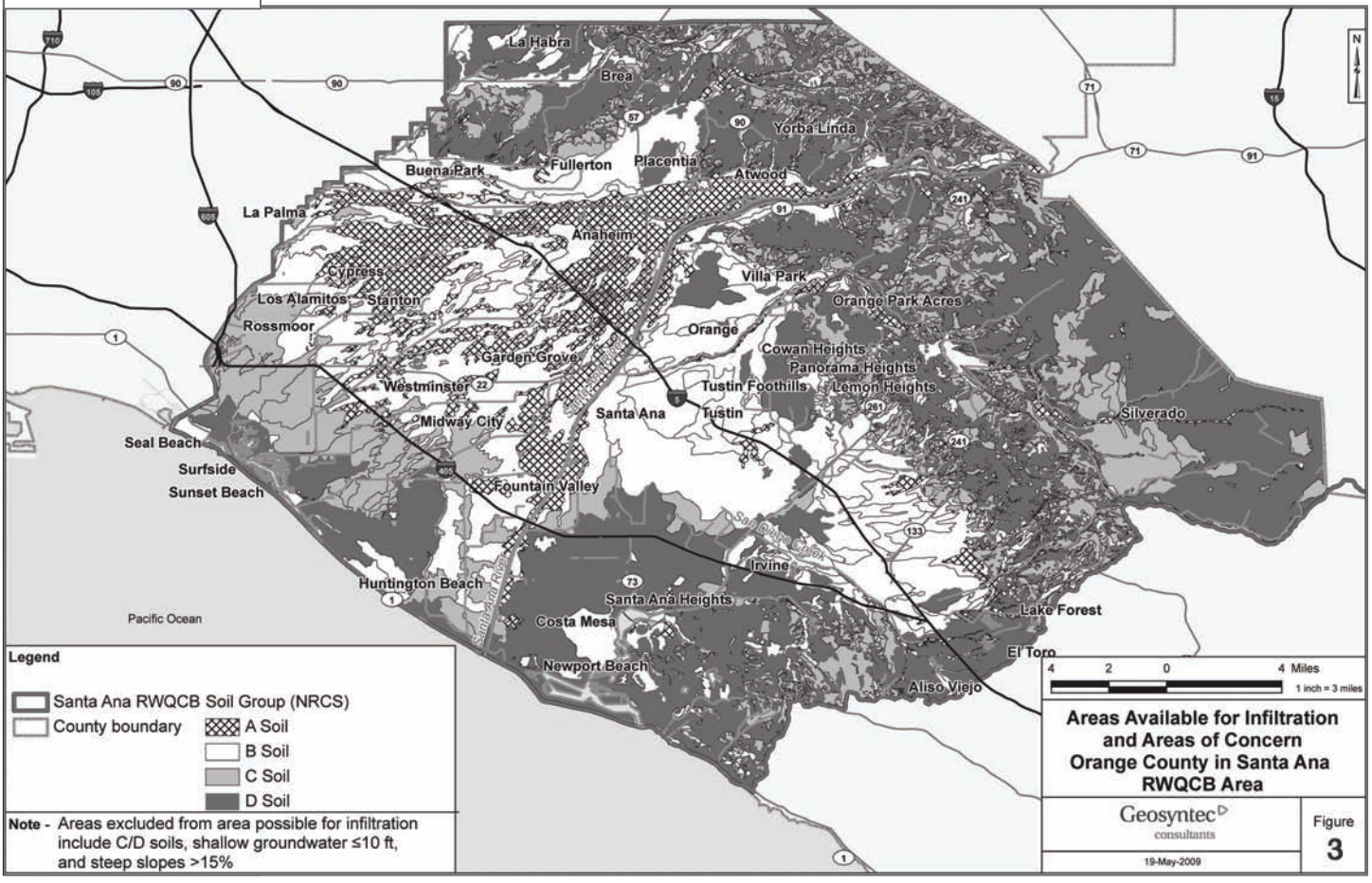
Infiltration: Can You Do It?

Underlying soils greatly affect the ability to infiltrate. In much of Southern California (and the West) urban areas are situated atop soils that are difficult for infiltration. Some practitioners have suggested soil amendments as a strategy for increasing infiltration. However, amending soils typically only addresses surface soils, so if underlying soils are still difficult for infiltration, soil amendments may only be increasing the storage available (vs. significantly increasing underlying infiltration rates). **Figure 3** presents a map that shows underling soils for the North Orange County, California permit area. It is expected that, in general, infiltration will only be successful in areas with A and B soil types. Of course, in mapping broader soils groups, there may be pockets where infiltration is more feasible. However, the converse is also true. In this Orange County example, a little over 58% of the permit area has C and D soil types that would be unlikely to promote infiltration at an acceptable rate. Infiltration facilities that ignore low underlying infiltration rates in their design would tend to be full for much of the wet season, resulting in substantial bypass/overflow, thereby greatly reducing retention on site. Infiltration facilities designed with lower infiltration rates in mind would have shallower allowable ponding depths and thus require a greater amount of site area, possibly promoting sprawl. To ascertain feasibility, maps like this should be developed prior to requiring infiltration or on site stormwater retention.

Infiltration: Should You Do It?

The next question is "should you (or how much should you) infiltrate?" In many areas there are unnatural (e.g., solvent) or natural (e.g., selenium) plumes or soil contamination that infiltration could negatively impact by either moving or spreading the contaminants. Infiltration in industrial areas is often not desirable due to general concerns about groundwater contamination resulting from potentially elevated

Figure 3.
Soil types for North Orange County MS4 NPDES Permit Area



Stormwater On Site

Water Balance Consequences

Groundwater Quality

Maintenance Issues

pollutant concentrations in industrial stormwater runoff. Geotechnical issues associated with steep slopes or expansive soils may also be an issue for infiltration. Depth to groundwater typically limits infiltration to areas with 10 or more feet of separation from the bottom of infiltration facilities to groundwater. Finally, in some locations upgradient of an ephemeral stream, increased infiltration may cause undesirable habitat type changes downstream of the site due to increased periods of base flows that result in vegetation changes (e.g. conversion of dry wash to a thickly vegetated system). There has been a lack of consideration of the overall water balance consequences that a "retention on site" requirement may have in terms of habitat.

As an example, **Figure 4** presents a map of the North Orange County permit area that shows the areas remaining with good potential for infiltration after consideration of some of the issues covered above. The area remaining within the permit area for consideration of infiltration is less than 23 percent of the permit area, even without considering habitat issues or regulated facilities (small contamination areas shown as dots). There are large urbanized areas where infiltration would not be either feasible or desirable.

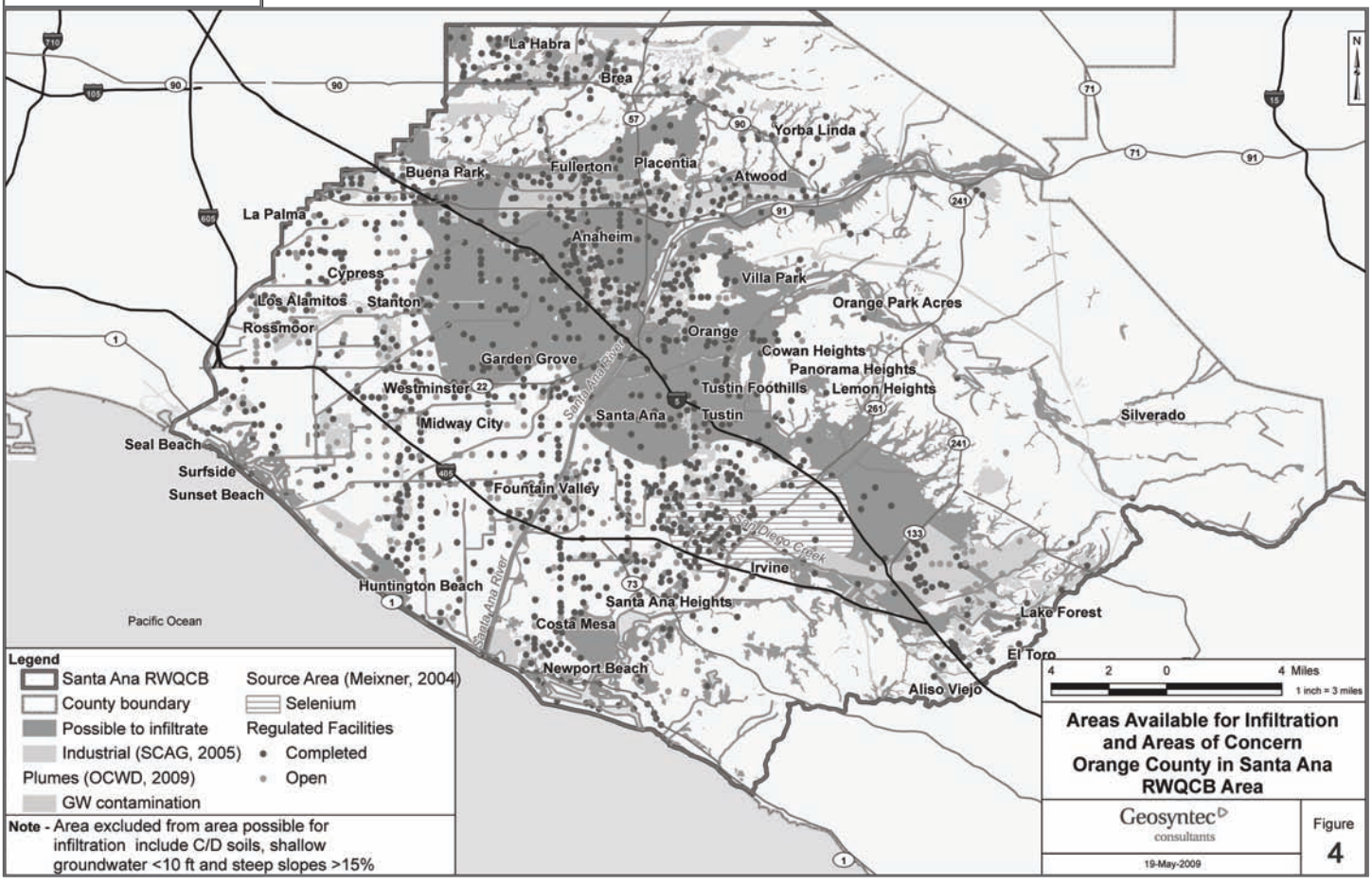
Infiltration: Do It Carefully

Finally, infiltration should be done carefully to ensure that groundwater quality is protected and widespread stormwater management facility failure does not occur. Proper treatment of infiltrating water should occur before this water reaches groundwater either via treatment with BMPs or ensuring that soils are adequate to provide treatment while passing infiltrating water. Infiltration facilities have often failed due to poor maintenance and operation of the facilities. One needs to think through how to design infiltration facilities to minimize maintenance issues, including whether widely-distributed infiltration facilities can be maintained as adequately as one centralized facility. Water districts that utilize groundwater should obviously be involved in decisions about where and how to infiltrate stormwater so that groundwater supplies are protected.

Infiltration: Summary

Infiltration must be done carefully to ensure that it can be successful on a long-term basis as well as be protective of water supplies. The best opportunities for successful infiltration are in areas where groundwater is actively managed for water supply. Such areas are unlikely to face as many water balance hindrances or other issues. For example, areas along the Santa Ana River are actively managed for recharge and withdrawals by the Orange County Water District. These localities provide the best opportunity for successful infiltration.

Figure 4. Areas available for infiltration for the North Orange County Permit Area



Stormwater On Site

Development Factors

Precipitation v. ET

In Soil Storage Recovery

Water Balance

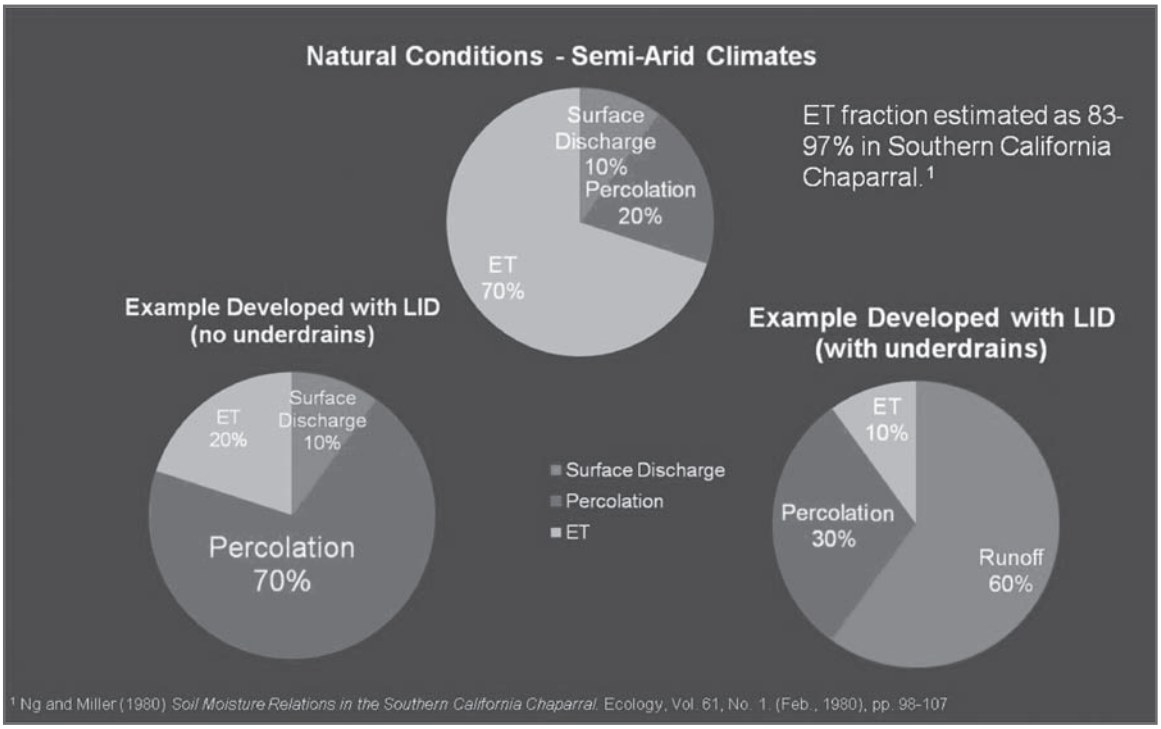
EVAPOTRANSPIRATION (ET)

After an area undergoes development there will be less available area for **e**vapo**t**ranspiration (ET)to occur. This holds true even when vegetated roofs, pervious pavements, and other "green" development practices are employed and is especially true for high density projects. Some analysts have compared monthly or seasonal ET to precipitation levels to assess the potential for ET losses as a significant retain-runoff on site measure. This is particularly inappropriate on the West Coast in light of the region's tendency for back-to-back storm events.

Refer again to **Figures 1 and 2** appearing above. **Figure 1** shows monthly normal comparisons of precipitation versus ET, while **Figure 2** shows precipitation and ET as weekly totals for an example year. While the former suggests that ET matches or exceeds precipitation on a monthly normal bases, it does not account for back-to-back storms or the fact that months with higher than normal rainfall would be the same months that correspond to lower than normal ET. **Figure 2** clearly demonstrates that ET cannot keep up with precipitation on a weekly basis in critical periods of the typical back-to-back storms of an average year. During these critical periods, the storage provided in soils would not have recovered in time for subsequent rainfall. While ET of stormwater should be maximized, it almost certainly will not be able to match pre-development levels and is likely a minor component of retaining stormwater on site (without storage and use for irrigation).

ET is a very important consideration when assessing the ability to mimic predevelopment runoff volume. **Figure 5** presents typical arid southwest water balances for: undisturbed areas; areas developed with infiltration facilities (Example Developed with LID – no underdrains); and for areas developed using LID with underdrains. Predevelopment ET can range upwards of 80 to 97 percent of the precipitation on an average annual basis. It is very unlikely that predevelopment ET will be matched by post-development ET due to reduction in vegetated open soils areas. So, the choice for development, particularly high density development, is to either have more runoff than predevelopment or more infiltration, or a combination of the two. This fact and its ramifications have not been considered during the development of on site retention requirements that are focused on surface hydrology versus overall hydrology (including sub-surface).

Figure 5. Typical Water Balance from Precipitation in Arid Southwest Climate



Stormwater On Site

Harvest Demand

Model Assumptions

Capture & Use Levels

Biofiltration Comparison

CAPTURE & USE ("RE-USE")

In most all cases where infiltration is not feasible or possible, the only option remaining to meet the retain on site requirements is to capture (harvest) and use the stormwater. In North Orange County, for example, this would be the option in about 77 percent of the permit area or more.

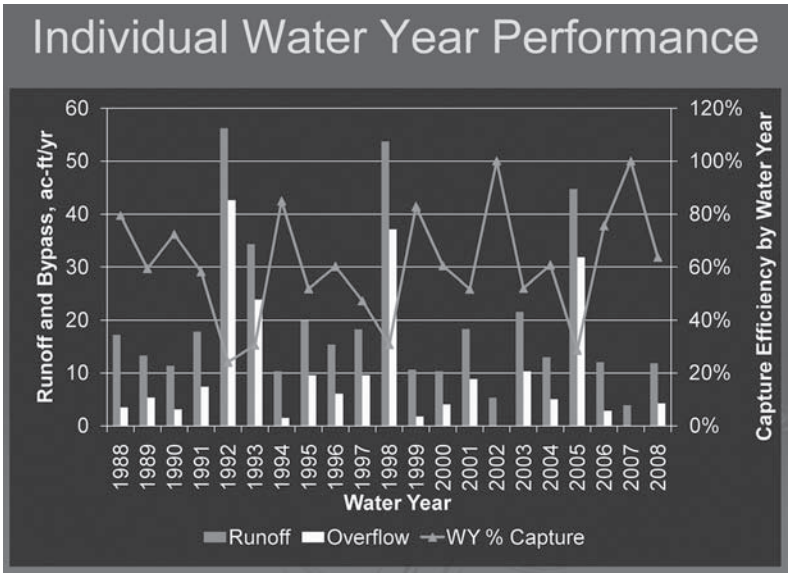
The key factor for success of capture and use of stormwater as a means to retaining water on site is the rate at which storage can be made available for subsequent events. This means having a demand for the captured water that is high enough, especially during the rainy season. The two most obvious uses for captured stormwater are for irrigation and toilet flushing. There are significant code issues with capture and use for internal non-potable demand in many jurisdictions. In addition, there are water rights issues associated with capture of stormwater in some areas (e.g., Colorado and Utah). These limitations are not the focus of this article. Other potential uses include process water for commercial or industrial purposes. A scenario for a residential development was conducted to illustrate the potential for capture and use of stormwater. This scenario is discussed next.

Capture and Use: Residential Scenario

Your authors modeled and evaluated a100-acre residential catchment with 60 percent overall impervious area using a continuous simulation model (SWMM) as an example of a capture-and-use scenario. It was assumed that infiltration losses would be minimal (due to shallow groundwater depth, poor soils for infiltration and/or other issues). A tank (above ground storage) of 1.3 million gallons (equivalent to the runoff from the catchment resulting from a 0.8 inch storm event — the water quality design storm) was evaluated with toilet flushing and irrigation uses combined. Toilet flushing assumed 65 gallons per day per dwelling unit at 4.5 units per acre. For simplicity, irrigation demands were assumed to equal the monthly average ET levels for the 30 acres of landscaped areas. It was also assumed that irrigation was always on, even during rainfall (note that irrigation demands during and after rainfall are significantly over-estimated in this analysis). A 21-year hourly long-term simulation model was run to ascertain the potential effectiveness of such a system for retaining runoff on-site. We also evaluated potential pollutant removal results as compared to biofiltration with an underdrain (surface water release).

Overall the system resulted in an estimated capture and use of stormwater of about 48% of the total runoff volume (52% bypassing with no treatment — though one could treat the bypass as well). The capture and use levels varied annually from less than 30 percent to 100 percent for the 21 water years evaluated (**Figure 6**).

Figure 6. Predicted Annual Runoff and Overflow for Example Cistern System



Using data from International BMP Database (see: www.bmpdatabase.org), a comparison of total loadings performance to a biofiltration system with underdrains was made. This comparison showed that the biofiltration system reduced **t**otal **s**uspended **s**olids (TSS) loads by about 63% compared to 48% for the cistern scenario for the 21-year simulation. So, in this case the assumption that retain on site is the most effective at reducing pollutant loadings is not valid, unless one also required treatment of the bypassed flows (in essence an additional BMP treatment requirement). Finally, the average annual potable water saved was on the order of about 10 percent of the average annual demand.

Stormwater On Site

Another scenario was run doubling the size of the cistern tank to 2.6 million gallons (equivalent to a 1.6 inch design storm). Under this scenario, the capture and use level went up to about 57 percent (so doubling the tank size resulted in another nine percent of the runoff being captured and used). Again, this emphasizes the point that being able to drain the cistern relatively rapidly is the key to success for capture and use.

Capture and Use: Limiting Factors

Evaluation Factors

As illustrated in these examples, one should evaluate carefully potential scenarios to help ensure that choices made regarding retention on site requirements actually result in the desired results. Evaluation should consider land use and density assumptions as well as assessment of local precipitation and runoff patterns, irrigation needs, and ability to use water for toilet flushing or other non-potable uses.

Rapid Storage Recovery

For capture and use to work, the storage must be quickly recovered. Irrigation typically is not an effective use for recovering storage quickly as irrigation needs during wet periods are minimal and in some cases (i.e., colder climates) there is no irrigation demand for long periods. In addition, much of the arid southwest is encouraging "xeri-scaping" (drought tolerant plants), which is likely much more effective at reducing potable demand than capture and use for irrigation. Xeriscape plant pallets typically do not like to be saturated for long periods, as would occur via over-irrigation if irrigation use was maximized. Further, use of a water-loving plant palate to maximize the use of captured runoff during normal and wet years could exert an additional demand for potable water during dry years.

Toilet Use Ratio

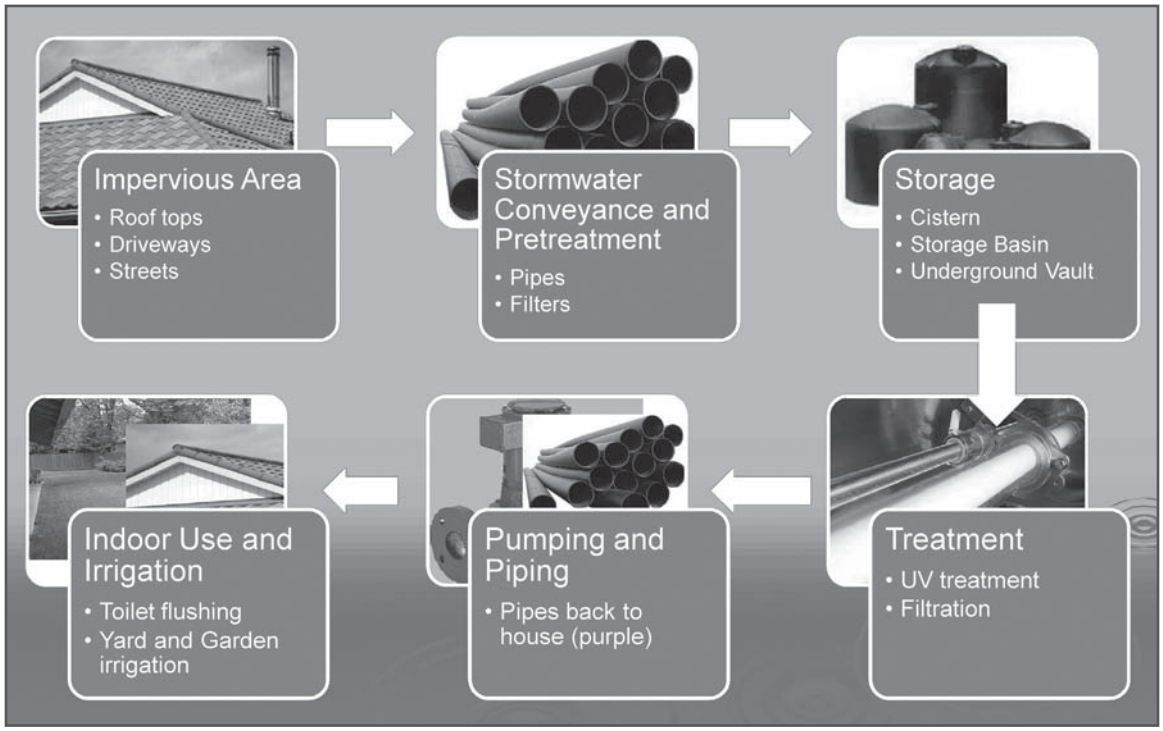
For toilet flushing to be effective, there needs to be a high enough ratio of Toilet Users To Impervious Area (TUTIA). Perhaps in high-rise condominiums, office buildings, institutional buildings, etc. this ratio would be high enough to drain the tank sufficiently fast and in these cases capture and use should be considered.

However, there would be a "competition" for reclaimed water in much of the arid west. Reclaimed water systems tend to be limited in their ability to distribute water in the wetter and colder periods of the year due to low irrigation demands. In addition, in some locations use of reclaimed water for toilet flushing is required in high density projects. One has to question if the capture and use of stormwater that may result in reclaimed water being discharged is an effective strategy. Under this scenario, the captured stormwater would not be reducing potable water demand.

Infrastructure Needs

Finally, there is significant infrastructure (**Figure 7**) that would be required to employ cistern and use on a site basis, including piping, storage, treatment, pumping, and separate piping (purple pipes). Questions about sustainability for these systems need to be explored and assessed.

Figure 7. Typical Components of a Stormwater Harvest and Use system.



Stormwater On Site

Key Considerations

Unique Factors

CONCLUSIONS

In Summary:

- Infiltration is often not broadly feasible, effective and/or desirable. While it should be maximized where appropriate, studies are needed to identify suitable areas and also identify areas where infiltration may be feasible but not appropriate.
- Precipitation/runoff patterns in California and much of the West limit the ability of evapotranspiration-based BMPs to achieve retention on site requirements. Evapotranspiration of stormwater should be maximized, but will not be a significant component of retaining stormwater on site in densely developed areas.
- Precipitation/runoff patterns coupled with landscaping and reclaimed water considerations limit the applications where capture and use of runoff can be effective. Generally, only scenarios with high indoor demand and no competing requirements to use reclaimed water can be expected to provide a complete and reliable stormwater solution. Capture and use should be maximized in these cases, but in other cases it should be carefully considered against other options such as biofiltration and discharge to determine which option is most effective in meeting stormwater management goals.
- The overall water balance should be considered when making choices on proper levels of infiltration versus surface runoff.
- There needs to be more technical vetting of "retain on site" and stormwater harvest and use before these approaches are made mandatory.

Each watershed and site has unique soils, topography, groundwater, water quality, land uses, receiving water sensitivities, wastewater strategies, etc. which should be considered when evaluating retention on site as a requirement or strategy. The authors believe that management approaches that are "one size fit all" are not appropriate and in many cases would likely lead to undesirable results.

Proper Stormwater Management Includes:

- Source controls
- Infiltration where feasible and appropriate
- Maximizing ET losses
- Harvest and use where it makes sense
- Capture and treat with effective (i.e. vegetated) BMPs where it makes sense

We believe that significant progress could be made by improving BMP selection and design guidance for all BMPs to better target unit processes (i.e. physical, biological, chemical treatment processes) to the pollutants and parameters of concern for each watershed.

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Aaron Poresky, E.I.T. has more than four years of experience in water resources and urban stormwater management. At Geosyntec, he has been involved in a variety of projects including structural BMP design and evaluation, water quality planning and impact analysis, hydromodification planning and impact analysis, stormwater policy support, and modeling methodology development. Key project areas have included stormwater retrofit planning and design for a variety of municipal and private clients, modeling methodology development and implementation, new development stormwater planning, and regulatory analysis. Mr. Poresky has been an invited speaker on the topics of modeling, BMP design, and stormwater policy.

IDAHO TRANSFERS

IDAHO WATER TRANSFERS

AN UPDATE ON IDAHO'S WATER TRANSFER POLICIES & ISSUES

by Michael C. Creamer, Givens Pursley LLP (Boise, ID)

INTRODUCTION

Like other western states, Idaho experienced significant economic growth over the past fifteen years. During approximately this same period, Idaho also experienced several deep drought cycles. The most recent of these has been touted as a 1-in-500-year event that rivaled the most severe drought on record, which occurred in the early 1930s. Despite growing demand and periodic droughts, sufficient water generally has been available to satisfy existing and new water requirements. Two reasons for this are that Idaho is a relatively water-rich state when both its surface and ground water supplies are considered, and significant improvements in irrigation efficiencies have been implemented in response to drought that have helped conserve developed supplies, especially storage supplies.

Water Shortage?

Nevertheless, a general public perception seems to have emerged that Idaho is "water-short." This perception likely has been reinforced by recent determinations of several substantial federal and tribal water right claims in Idaho's Snake River Basin Adjudication (SRBA), and by imposition of flow augmentation requirements that essentially have reallocated up to 427,000 acre-feet per year of upper Snake River Basin storage to promote migration of endangered Pacific salmon. Declining spring discharges from the Eastern Snake Plain Aquifer (ESPA) also have created concerns about ground water supplies (see Budge, TWR #64 and Fereday, TWR #40).

Conjunctive Use

The shortage perception has contributed to what may best be viewed as an "administrative drought" in which the Idaho Department of Water Resources (IDWR) has imposed moratoria and other constraints on ground water development in certain areas and implemented conjunctive administration of ground and surface water sources in areas where water rights have been decreed and can be administered by Watermasters in Water Districts. Because surface water sources have been fully-appropriated in most developed areas of Idaho, ground water has been the primary source of new water supplies for new uses since the early 1950s. The response to the administrative drought has been an increase in the number of transfer applications IDWR has received and processed, which seek to change the place of use, nature of use, or point of diversion of existing surface and ground water rights. The growing number of transfers being sought, and their increasing complexity and contentiousness, has prompted the IDWR to develop and update uniform transfer policies and processing procedures.

Transfer Increases

This article summarizes Idaho law and policy concerning water right transfers, including the IDWR's recently-updated Transfer Memorandum. The growing importance of mitigation as a means for junior users to continue diversions under existing rights and as a means to develop new water rights is discussed as well. As much as anything else, mitigation requirements have spurred the increase in Idaho water transactions and transfers and the need for uniform policies and procedures to process them. This article also touches on the importance of analytical tools — particularly hydrologic models — in Idaho water right transfers. Not covered are conveyances or assignments of storage rights in federal reservoirs or transfers using Idaho's water banks and storage rental pools.

Mitigation

BACKGROUND

The Right to Transfer

In Idaho, the appropriative right in public water is a valuable real property right that can be conveyed together with, or apart from, the land to which it is appurtenant. In the case of *In re: Robinson*, 61 Idaho 462, 103 P.2d 693 (1940), the Idaho Supreme Court held that a water right can be conveyed "separate and apart from the land on which it is used and may be made appurtenant to other lands so long as such transfer does not injure other appropriators." The transfer right is an incident of the constitutional right of appropriation. *First Security Bank of Blackfoot v. State*, 49 Idaho 740, 291 P. 1064 (1930) held: "One of the valuable incidents of [a water right] of which an owner cannot be deprived is the right to use it where he will and to change its place of use, providing always that by such use or such change in the place of use the rights of others are not adversely affected."

Severance From Land

By statute, the Legislature has required the right holder to apply to the IDWR for review and approval of a transfer. Idaho Code §§ 42-222 and 42-108. Idaho statutes also provide for notice and an opportunity for protest and hearing by any person. Idaho Code § 42-222(4)(a).

Transfer Statutes

IDAHO TRANSFERS

Limitations

THE DIRECTOR MUST APPROVE THE TRANSFER IN WHOLE, OR IN PART, OR UPON CONDITIONS, PROVIDED:

- No other water rights are injured
- The change does not constitute an enlargement in use of the original water right
- The change is consistent with the conservation of water resources within the State of Idaho
- The change is in the local public interest. The "local public interest" is defined as "the affairs of the people in the area directly affected by the proposed use."

See Idaho Code § 42-203A(5).

Transfer Types

The most common water right transfers involve changing the nature of use (often from irrigation to commercial, industrial or municipal uses), place of use, period of use, and/or the point of diversion. Other water right elements that may be changed in a transfer, by request or by condition, include the season of use or priority date (typically by subordination). [Editor's Note: In general, "subordination" means that a senior water right is conditioned so that the right is "subordinated" or made junior to another water right.]

"Injury" Distinctions

Injury

What constitutes "injury" to a water right is largely a question of fact. However, at least as a matter of rule and policy, a distinction has developed in Idaho between injury in the context of priority administration (regulation) of water rights and in the context of new appropriations and transfers. In water rights administration, injury must be "substantial" or "material" before a junior right will be curtailed. The evaluation of materiality takes into consideration numerous factors, including whether the senior's ability to accomplish his beneficial use will be impaired and the reasonableness of the senior's means of diversion. In conjunctive administration — the regulation of surface and ground water together under the priority system — there are enumerated criteria to be used in this analysis. See Conjunctive Management of Surface and Ground water Resources, IDAPA 37.03.11.042.

Regulation v. Transfers

By comparison, when analyzing whether a *new* appropriation or transfer will cause injury, the IDWR's position is that even where the depletive effect of a new appropriation or transfer is so small as to be immeasurable, if it is "real and determinable" it constitutes injury. See *In the Matter of Applications for Transfer No. 5174 in the Name of Dennis M. Baker and No. 5175 in the Name of Huf-N-Puf Trust*, Final Order (Nov. 25, 1998)(transfer); *In the Matter of Application to Appropriate Water No. 31878 in the Name of Bown Crossing LLC*, Preliminary Order (Feb. 7, 2005), and Final Order (Nov. 17, 2005)(new appropriation).

"Return Flow" Reduction

Juniors in the water system are entitled to the maintenance of conditions that existed at the time the junior users made their appropriation. The law has required that a transfer not reduce the "return flows" serving a junior right that are attributable to the historical use of the transferred right. When speaking of water diverted for irrigation, "return flow" is that water that percolates through the soil and returns to the water source after it has been applied to the land and gone underground to perform its nutritional function. In regard to other beneficial uses, "return flow" is that water that percolates underground and returns to the water source after having been applied to the beneficial use. Return flows that have returned to a water source are subject to appropriation by the public, and to the extent that they support a junior appropriation, no transfer of, or change in, the senior right can occur that would reduce those "return flows." Consequently, the injury analysis in Idaho transfers traditionally has focused primarily on the effect on junior water rights and involved a fairly limited review of the transferred water right's historical use, consumptive use, and timing and location of return flows. Senior users in the system, however, traditionally have been presumed to be protected by their priority. Now other factors, including potential impacts to seniors or to the public interest, are being raised more often in transfer proceedings. Complexities are compounded by the inclusion of minimum stream flows (rights) on the water rights rolls and the growing concern of senior storage spaceholders about their refill and carryover potential. In addition, the fact that more technical knowledge exists today about Idaho's surface and ground water systems, means that more information can be brought to bear in analyzing transfers.

Complex Issues

Hydrological Connections

In certain areas of the State, such as the areas overlaying the ESPA of southern Idaho and in the Treasure Valley of southwest Idaho, ground water transfer applications are accompanied by a hydrologic analysis showing transfer impacts on timing and location of return flows and depletions affecting junior and senior rights in hydrologically connected sources. In some cases where a well-developed hydrologic model is not available, and where the likelihood of controversy is high, an applicant may be required to develop one if he expects to have the transfer processed and approved.

Hydrologic Analysis

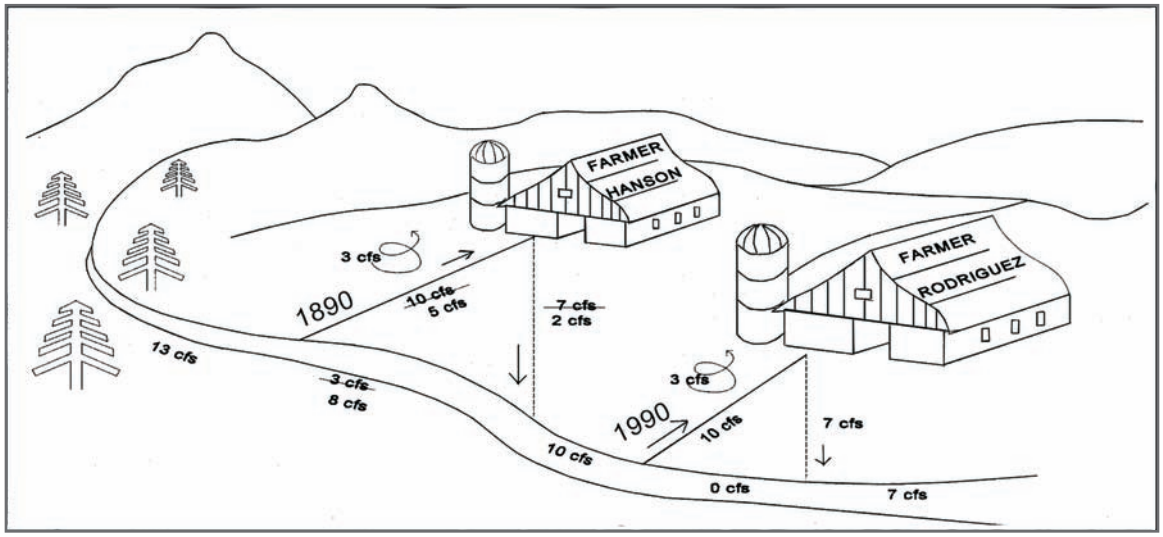
IDAHO TRANSFERS

IDWR Transfer Memorandum

Development of Transfer Policies and Procedures

The increased number of transfers and mitigation requirements for new appropriations, combined with their greater complexity, prompted the IDWR in October of 2002 to adopt an "Administrator's Memorandum" ("Transfer Memorandum" or "Memorandum") standardizing transfer processing policies and procedures. The 2002 Transfer Memorandum was superseded by an update in January 2009 to account for experience gained using the transfer policies in the interim and to address emerging transfer issues. IDWR also proposed additional procedures and mitigation policies in an attempt to streamline the transfer process and provide more information to applicants and the public.

Return Flow Example



In this illustration's example, although Farmer Hanson has a senior 1890 diversion totaling 10 cfs from the river, his historical water use results in consumption of only 3 cfs, with the balance of 7 cfs accruing as return flow to the river and supporting Farmer Rodriquez's 1990 diversion of 10 cfs. Rodriquez is entitled to have conditions on the stream remain as he found them in 1990 if the 1890 right is transferred. A transfer to change the place of use of Farmer Hanson's entire 10 cfs right would need to be conditioned to ensure the continuance of 7 cfs of return flow or to require replacement water as mitigation to the junior right. For the same reason, if Farmer Hanson decided to implement water efficiency measures that allowed him to reduce his diversion requirement to 5 cfs, he would not be entitled to use the 5 cfs of conserved water at another place of use. This would be an enlargement of the original water right, and would reduce the historical return flow from 7 cfs to 2 cfs. This would be deemed an injury to Farmer Rodriquez's 1990 right.

IDWR'S TRANSFER MEMORANDUM AND MITIGATION POLICIES

Unused Rights "Revived"

IDWR's October 2002 Transfer Memorandum standardized processing procedures that previously were often implemented differently in the State's four administrative regions. In the past, transfer applications with vague supporting information or that were otherwise incomplete on their face might still be processed and approved with limited IDWR analysis if no protests were filed. Idaho Code § 42-222 contemplates, among other things, that a water right transfer must satisfy non-injury and non-enlargement requirements and be consistent with the conservation of water resources within the State and with the local public interest. Nevertheless some water rights that had not been used for far in excess of the statutory five-year forfeiture period were essentially allowed to be "revived" by a transfer. In other instances local Watermasters were not consulted as required by the statutes. The kind and level of proof required or accepted by the regional offices concerning a water rights's historical use and historical consumptive use also had not necessarily been consistent.

2002 Memorandum Criticisms

Not surprisingly the Memorandum received early criticism from some water users and some members of the Idaho water bar because it set out requirements that they were unfamiliar with or that appeared to complicate and delay transfers. For example, the 2002 Transfer Memorandum required an up-front, detailed submittal by the applicant describing the proposed transfer and required a detailed IDWR analysis of the transfer on the merits before the application would be published. In addition, IDWR's review now will routinely include consideration of comments from state and local governmental agencies concerning local public interest issues. Another criticism of the Transfer Memorandum has been that the policies and procedures it requires should be adopted through a formal rulemaking process.

IDAHO TRANSFERS

2002 Requirements

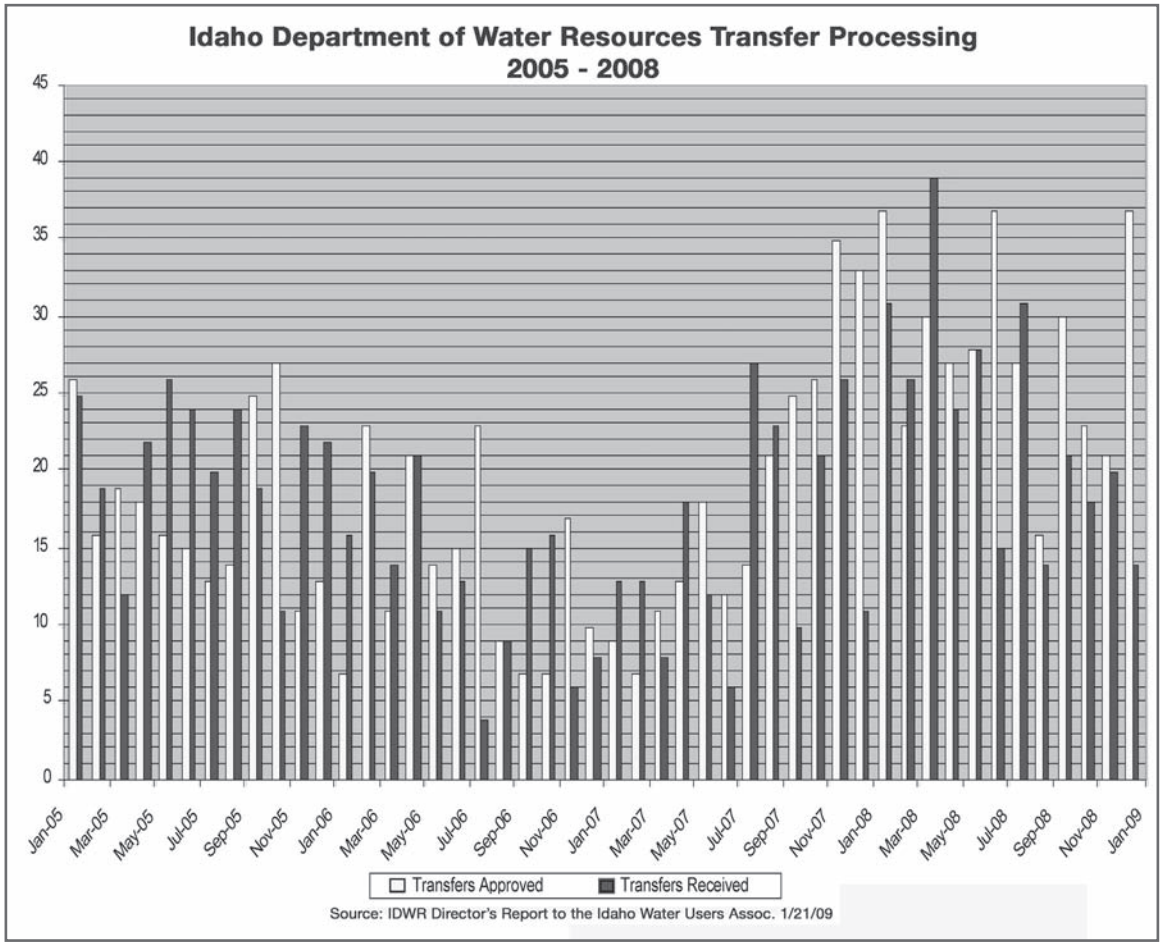
Emerging Issues: Groundwater; Dairies; Cities

The 2002 Transfer Memorandum

The introductory sections of the Transfer Memorandum state that regardless of whether or not a transfer application is protested, IDWR is, at a minimum, required to evaluate injury, enlargement, the local public interest, impacts on the local economy, water right validity and ownership, and the authority of the person signing the application. The 2002 Transfer Memorandum also established minimum requirements for an acceptable transfer application, uniform guidelines for determining when a transfer application is not required, who may amend an application once it is submitted, and when an application that has been published must be re-published if it is amended.

The Transfer Memorandum provides direction to IDWR staff on certain emerging issues affecting transfers. For example, the Memorandum establishes specific procedures for evaluating ground water transfers within the ESPA and Ground Water Management Areas. In response to the large number of dairy operations that have moved to Idaho and required transfers from irrigation to commercial and stockwater uses, the Transfer Memorandum includes guidance for processing transfers involving confined animal feeding operations and disposal of the resulting wastewater by land application or other means. The Memorandum also provides guidance to give effect to legislation passed in 1996 recognizing the right of "municipal providers" to acquire and hold water for "reasonably anticipated future needs."

The 2002 Transfer Memorandum was an attempt to make the transfer process more efficient for applicants and the IDWR. A "parallel review" process was established in which staff in both the regional office and state headquarters of the Idaho Department of Water Resources reviewed an application before it was published. The intent was to minimize the potential that an application that appeared acceptable and approvable at the regional level would be delayed or returned to "square one" because a state office review identified policy or other concerns months later when the transfer was forwarded to the Director for final approval.



IDAHO TRANSFERS

2009 Revisions

The 2009 Transfer Memorandum

Before amending the Transfer Memorandum in 2009, IDWR circulated draft revisions for comment, along with several other draft guidance documents addressing transfers involving mitigation. These included a proposed new transfer application form, guidance concerning the nonuse of existing water rights proposed as mitigation for a transfer or new appropriation, guidance for evaluating mitigation plans submitted with applications for permits to appropriate water, and a protocol for delivery of and accounting for Upper Snake Basin storage water used for transfer mitigation. IDWR also held a "Transfer/Mitigation Workshop" to discuss the proposed Transfer Memorandum revisions and mitigation guidance with water users, consultants and attorneys.

Routine Transfers

The January 2009 revisions to the Transfer Memorandum were largely housekeeping changes that clarified certain guidelines based on experience over the ensuing years. Other revisions were more substantive. For example, the 2009 Transfer Memorandum confirms that Regional Managers have delegated authority to review, approve and sign "routine or non-complex" transfers. The parallel review process established in the 2002 Memorandum now is reserved for "non-routine or complex" transfers where policy issues are more likely to arise.

Public Notice

Notice Exception

Another substantive change in the Transfer Memorandum is discussion concerning whether and how notice of transfer applications and IDWR decisions concerning them will be provided. Notice of a rejected or denied application must be sent to an applicant by certified mail. Public notice must be given of any pending application and any contested application (i.e., where the applicant contests a preliminary order rejecting or denying the application and requests a hearing). A limited exception to the public notice requirement exists where an application proposes to change only the point of diversion or place of use of a water right in a manner that IDWR deems will not change the effect on the original or hydraulically connected source or otherwise affect other water rights.

Mitigation

New language in the 2009 Transfer Memorandum concerning evaluation of injury and mitigation in transfers provides a segue to several separate draft mitigation policies. These include policies entitled "Water Rights Dedicated to Mitigation Protected from Forfeiture" and "Evaluation of Mitigation Plans for Water Right Permits." These policies both remain in "draft" form at present.

Mitigation Plans

Mitigation plans now are required to accompany applications for a permit to appropriate water for new uses in Ground Water Management Areas and Critical Ground Water Areas, in areas subject to administrative moratoria on processing of new permit applications, and from fully-appropriated water sources or other areas subject to "administrative holds" on permit application processing. Absent a mitigation plan, the application will not be processed.

Mitigation Methods

A common method to mitigate the depletive effect of a new appropriation, particularly a ground water appropriation, is to acquire an existing senior surface or ground water right and terminate its use (i.e., eliminate the consumptive use of the existing right to offset the consumptive use and depletion of the new right), or change its place of use and/or nature of use. A common example is the use of a senior surface water right to provide "make-up water" in a newly constructed pond that has been excavated to intercept ground water. The place of use (and perhaps also the point of diversion) of the surface water right is transferred to the pond where it will offset the depletion to the ground water source associated with evaporation from the pond surface. In other instances, senior surface water rights might be transferred so that they can be diverted into canals and delivered for aquifer recharge at a different time and location to offset increased depletions to a stream reach.

ESPA Transfers Model

In the ESPA, where a well-developed three-dimensional model is available, a transfer of a ground water right from one location to another must be supported by an analysis showing how the timing and locations of historical depletions will be affected by the transfer and by a plan demonstrating that the applicant can offset any increased depletions. IDWR has developed an "ESPA Model Transfer Spreadsheet" and accompanying programs that provide a tool to analyze hydrologic impacts of ground water transfers within the ESPA. Impacts of a transfer over time may be computed for eleven hydraulically connected stream reaches in the Snake River. The spreadsheet, a user's manual, and evapotranspiration data required by the spreadsheet can be downloaded from IDWR's website (www.idwr.idaho.gov/WaterManagement/WaterRights/WaterRightTransfers/wrt_default.htm).

Mitigation Plan Evaluation

Depletion Analysis

IDWR's draft policy entitled "Evaluation of Mitigation Plans for Water Right Permits" states that it is the applicant's responsibility to complete and submit a depletion analysis with the application. Ground water transfers in the ESPA must be accompanied by the ESPA Transfer Spreadsheet analysis. In the Big Wood River Basin, a well-developed ground water model has not previously been available. Because the

ground water source has been designated as a Ground Water Management Area, those transfer applicants who desired to have their applications approved have had to use their own funds to develop a model that adequately described the effects of their transfers on relevant reaches of the Big Wood River.

The draft policy also summarizes the types of mitigation most commonly offered, including ground water recharge, using other rights to provide "make-up water" to offset evaporative losses from ponds and other water amenities, storage releases and nonuse of water. Transfer applications proposed as part of a mitigation plan must offset the identified depletions in quantity, time and location.

Non-Forfeiture of Water Rights Used for Mitigation

Because Idaho law imposes a forfeiture penalty if a water right is not used for five or more consecutive years, and because nonuse of existing rights has become a common means to mitigate the depletive effects of new appropriations, in 2004 the Idaho Legislature passed legislation providing that nonuse of a water right under an approved mitigation plan was a defense to forfeiture. Idaho Code § 42-223. Prior to this statute, where a water right was proposed to be "unused" as mitigation for a new appropriation, the applicant needed to file a transfer application to change the "use" of the existing right to "mitigation" or "ground water recharge"— uses that were deemed by IDWR as beneficial uses — even though the mitigation really amounted to a "nonuse" of the water right. Absent a transfer, the unused right would be forfeited after five years, and then another water right would have to be procured to provide continued mitigation. The statute clarified the legal effect of nonuse in the mitigation context.

The "Water Rights Dedicated to Mitigation Protected from Forfeiture" policy gives guidance to IDWR staff and the public about how IDWR will implement the mitigation statute. This policy provides that where a new appropriation is to be mitigated by the nonuse of water under other rights, the approval order for the new permit will be the vehicle for changing IDWR's record for the mitigation right that no longer will be used. Upon approval of the mitigation plan, IDWR will alter its database to reflect that the nonused right is dedicated to mitigation. This avoids the need to file a transfer application where nonuse is the only change to the existing right anticipated by the mitigation plan, but it still allows IDWR to reflect the "change" in its database.

Public Access to Information

IDWR has upgraded its website to provide links to all of the policies and documents that have been discussed in this article. The website also now has an interactive transfer application link that steps a potential transfer applicant through the application preparation procedures. This website should be a first stop for anyone unfamiliar with Idaho water transfers (IDWR's website: www.idwr.idaho.gov).

CONCLUSION

For Idaho water users, complexity in water appropriations and transfers is a relatively new reality. Increasingly, water right transfers require consultants to prepare the applications and supporting analyses, and lawyers to prosecute them through to approval. Water administrators, users, consultants and counsel in more populous states with long-standing water supply challenges likely will view this as "old hat" in their jurisdictions. Requiring reliable supporting information to be included with transfer applications to ensure that transfers do not adversely impact existing water rights seems to be good policy. Putting a uniform set of transfer policies and procedures in writing and making them available to the public is, in itself, a big stride forward in Idaho water administration.

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CWA Transfers

NPDES & Water Transfers

Decision Impacts

Permit Requirements

"Addition" Interpretation

WATER TRANSFERS & THE CWA

ELEVENTH CIRCUIT UPHOLDS EPA INTERPRETATION OF CLEAN WATER ACT AS EXEMPTING WATER TRANSFERS FROM NPDES REQUIREMENTS

by Charles R. Sensiba, Member, Van Ness Feldman, PC (Washington, DC)
and
Tomás E. Carbonell, Associate, Van Ness Feldman, PC (Washington, DC)

Overview

On June 4, 2009, the United States Court of Appeals for the Eleventh Circuit held in *Friends of the Everglades, Inc. v. South Florida Water Management District,* No. 07-13829, 2009 WL 1545551 (11th Cir. June 4, 2009), that Section 402 of the Clean Water Act (CWA), 33 U.S.C. § 1342 (2006), does not apply to discharges of pollutants resulting from a water transfer between distinct bodies of navigable water. The court's 40-page opinion marked the latest phase in long-standing litigation over the jurisdictional breadth of the CWA's National Pollutant Discharge Elimination System (NPDES), which requires permits for discharges of pollutants from point sources. The decision is also the first to rule on the US Environmental Protection Agency's (EPA's) interpretation of the CWA as set forth in its NPDES Water Transfers Rule, 73 Fed. Reg. 33,697 (June 13, 2008), which maintains that activities that convey or connect waters of the United States, and that do not subject the transferred water to an intervening industrial, municipal, or commercial use, are exempt from NPDES requirements.

Although the factual context in *Friends of the Everglades* concerns pumping stations transferring phosphorous-laden water from a canal in southern Florida to Lake Okeechobee, the Eleventh Circuit's decision has implications for many other forms of water diversions, such as hydroelectric facilities, irrigation systems, reservoirs and tunnels. In particular, the Eleventh Circuit's decision arguably limits the Supreme Court's earlier decision in *South Florida Water Management District v. Miccosukee Tribe,* 541 U.S. 95 (2004) (*Miccosukee*), which suggested in dicta that transfers of pollutants could trigger NPDES requirements. *Friends of the Everglades* also creates tension with a leading opinion from the Second Circuit, decided before the EPA's Water Transfers Rule, which held that Section 402 of the CWA applies to transfers of water between distinct navigable bodies of water. For now, *Friends of the Everglades* confirms that mere transfers of water do not require NPDES permits — an interpretation consistent with the treatment of water diversions under the CWA over the last thirty years.

Backdrop: the *Miccosukee* Decision

The *Friends of the Everglades* decision is the first appellate decision exploring the applicability of the NPDES program to transfers of water in the wake of the Supreme Court's 2004 decision in *Miccosukee.* In that case, Friends of the Everglades and the Miccosukee Tribe of Indians brought a citizen suit against the South Florida Water Management District (the District), which operates the complex series of pumps, canals, and reservoirs that prevent Lake Okeechobee from overflowing its southern banks. Those plaintiffs claimed that the District's S-9 pumping station, which transfers water from drainage canals to the Lake, was unlawfully discharging pollutants into the Lake because the District was operating the pumping station without a NPDES permit issued under Section 402 of the CWA. *Miccosukee,* 541 U.S. at 102-03. The CWA prohibits the "discharge of any pollutant" into waters of the United States without such a permit. 33 U.S.C. § 1311(a) (2006). "Discharge of any pollutant," in turn, is defined in Section 301(a) of the CWA, 33 U.S.C. § 1362(12) (2006), as "any addition of any pollutant to navigable waters from any point source." Because the S-9 station carries water contaminated with phosphorous and other agricultural runoff to the relatively cleaner waters of Lake Okeechobee, plaintiffs reasoned, the S-9 station results in an "addition" of pollutants to navigable waters. *Miccosukee,* 541 U.S. at 102-03.

As *amicus curiae* in *Miccosukee*, the United States set forth a new interpretation of the CWA's definition of "discharge of any pollutant," which ultimately would become the focal point of the Eleventh Circuit's decision in *Friends of the Everglades.* According to the United States, plaintiffs' reading of the definition would require a NPDES permit anytime a pollutant is added to *any* body of navigable water, even though the statutory text refers only to "addition…to navigable waters." *Id*. at 106. The United States argued that the term "addition" is more properly interpreted to refer only to the addition of pollutants to navigable waters *as a whole*. The S-9 pumping station would not result in an "addition" under this reading of the CWA, because S-9 only carried pollutants among two bodies of navigable water, rather than adding to the total stock of pollutants in the waters of the United States.

CWA Transfers

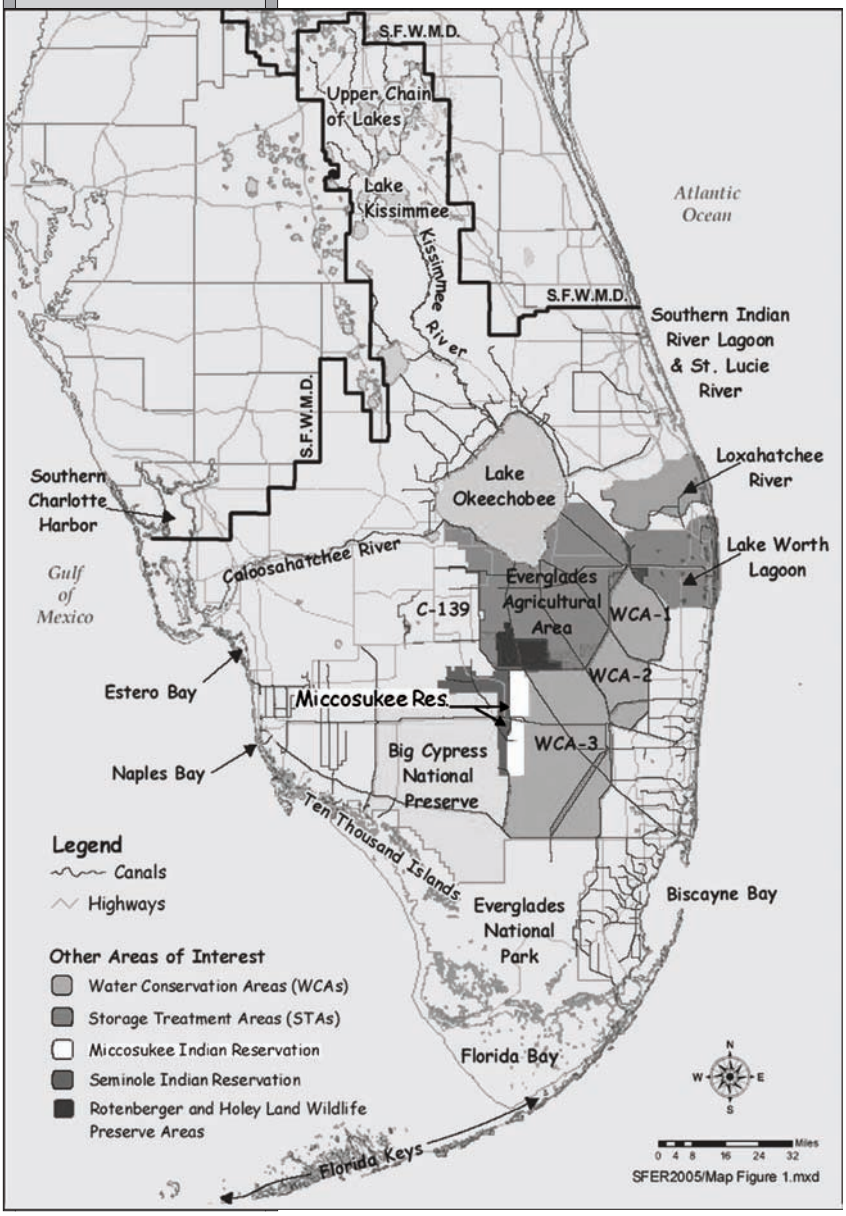
Miccosukee Holding

District Court Decision

While declining to rule on this interpretation, the Court expressed skepticism that the United States' "unitary waters" interpretation was consistent with the language of the CWA or with prior EPA interpretations of the statute. *Id*. at 107-08. Instead, the Court held that the district court had improperly granted summary judgment in the case without conclusively determining whether Lake Okeechobee and the canal were "meaningfully distinct" bodies of water. The Court reasoned that if the canal and the Lake "are simply two parts of the same water body, pumping water from one into the other cannot constitute an 'addition' of pollutants." *Id.* at 109. The Court also stated that the United States' interpretation of the CWA could be raised in remand proceedings. *Id.* at 112.

The Water Transfers Rule and the *Friends of the Everglades* Litigation

After the Supreme Court's decision in *Miccosukee*, the United States District Court for the Southern District of Florida reopened *Friends of the Everglades*, a separate proceeding that had been stayed pending the outcome in *Miccosukee*. *Friends of the Everglades, Inc. v. South Florida Water Management District*, 2006 WL 3635465 at *2 (S.D. Fla. 2006). *Friends of the Everglades* involved CWA claims that were virtually identical to those raised with respect to the S-9 station in *Miccosukee*, concerning other pumping stations operated by the District. In an exhaustive factual analysis, the district court determined that the drainage canal served by the pumping stations was "meaningfully distinct" from Lake Okeechobee. *Id.* at *49. Rejecting the United States' "unitary waters" interpretation, the court also held that the pumping stations caused an "addition" of pollutants to the Lake and therefore required NPDES permits. *Id.* at *42.



EPA subsequently finalized the NPDES Water Transfers Rule (Transfers Rule). Originally proposed by the agency in June 2006 following the *Miccosukee* decision, the Transfers Rule interpreted Section 402 of the CWA to exempt transfers of water among waters of the United States from NPDES permitting requirements. 73 Fed. Reg. at 33,697. In the Preamble to the Transfers Rule, EPA reaffirmed the textual analysis of the CWA that the United States had presented to the Supreme Court in *Miccosukee*. *Id.* at 33,701. EPA also found that the NPDES exemption for water transfers was consistent with the structure of the CWA, in particular Section 304(f), which expressly preserves state-level authority to control water pollution from nonpoint sources including pollution from "changes in the movement, flow or circulation of any navigable waters…including…dams, levees, channels, causeways, or flow diversion facilities." 33 U.S.C. § 1314(f)(2)(F) (2006). The Transfers Rule did not exempt water transfers that involve an "intervening commercial, industrial, or municipal use," such as use for drinking water, irrigation, or cooling intake. 73 Fed. Reg. at 33,704. EPA grounded this "intervening use" exclusion in the notion that water subjected to intervening uses ceases to be "waters of the United States," and thus results in an "addition" of pollutants when it is reintroduced to navigable waters. *Id.* at 33,704.

The Eleventh Circuit's Opinion

While the Eleventh Circuit did not face a direct challenge to EPA's Transfers Rule in *Friends of the Everglades*, the publication of the Rule heavily influenced its consideration of the South Florida Water Management District's appeal of the district court decision. On appeal, the Eleventh Circuit accepted the lower court's conclusion that the lake

CWA Transfers

EPA Interpretation

Deference Analysis

Congressional Intent

EPA Interpretation Reasonable

Exempt Transfers

Transfers Rule Conditions

"Addition"

and canal were meaningfully distinct bodies of water. *Friends of the Everglades,* 2009 WL 1545551, at *4 n.4. Nevertheless, the appellate court reversed the lower court's holding. Applying the two-step analysis articulated by the Supreme Court in *Chevron v. Natural Resources Defense Council,* 467 U.S. 837 (1984), the court found that the meaning of the definition of "discharge of any pollutant" was not clear, and that EPA offered a reasonable interpretation of the statute in the Transfers Rule.

The court first acknowledged that the interpretation of the CWA underpinning the Transfers Rule "has struck out in every court of appeals where it has come up to the plate," citing, *inter alia*, *Catskill Mountains Chapter of Trout Unlimited, Inc. v. City of New York,* 273 F.3d 481 (2d Cir. 2001) (*Catskill Mountains*) and *Dubois v. U.S. Department of Agriculture,* 102 F.3d 1273 (1st Cir. 1996) (*Dubois*). *Friends of the Everglades,* 2009 WL 1545551, at *5. Indeed, the Eleventh Circuit itself had rejected the unitary waters interpretation in its decision in the *Miccosukee* case, which was subsequently vacated by the Supreme Court. *Id*. However, the Eleventh Circuit discounted these precedents because they had been decided prior to the Transfers Rule and therefore only "addressed which interpretation of the statutory language was most plausible or preferable." *Id.* at *9. Moreover, the Eleventh Circuit noted the Second Circuit's observation in *Catskill Mountains* that deference to EPA's interpretation might be appropriate if it were adopted through a "rulemaking or other formal proceeding," as EPA later proceeded to do in the Transfers Rule. *Id.* at *10 (citing *Catskill Mountains,* 273 F.3d at 490).

The Eleventh Circuit then applied the *Chevron* deference analysis to the CWA's definition of "discharge of any pollutant." Examining the text of the statute, the court found that the intent of Congress with respect to water transfers was unclear. Although the absence of the word "any" in the definition of "discharge of a pollutant" favored the unitary waters interpretation, the court noted that other provisions of the CWA refer to individual bodies of water without using the qualifier "any." *Id.* at *12-13 (citing *Miccosukee,* 541 U.S. at 106-07). The court also recognized that the Transfers Rule "would require no permit for a project to pump the most loathsome navigable water in the country into the most pristine water," *Id.* at *14, but concluded that such "horrible hypotheticals" were not convincing evidence as to Congress' intent with respect to water transfers. *Id.* at *15 (observing that "other provisions of the Clean Water Act…do not comport with its broad purpose of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters.").

Having determined that the CWA was ambiguous, the Eleventh Circuit proceeded to find that EPA offered a reasonable interpretation of the statute in the Transfers Rule. Drawing on its previous analysis of the text and policy of the CWA, the court concluded that "[b]ecause the EPA's construction is one of the two readings we have found is reasonable, we cannot say that it is 'arbitrary, capricious, or manifestly contrary to the statute.'" *Id.* at *16 (citing *Chevron,* 467 U.S. at 844). The court held that the interpretation of the CWA — articulated in the Transfers Rule by EPA — should be accorded deference under the second step of the *Chevron* analysis, and declined to require the District to obtain NPDES permits for its pumping stations. *Id.* at *17.

Analysis and Possible Implications for Water Diversions

The Eleventh Circuit's deference to EPA's interpretation of the CWA as articulated in the Transfers Rule applies to many forms of water diversions. Some two million facilities nationwide — including hydroelectric generating stations, flood control projects, irrigation systems, aqueducts, and drinking water systems — transfer water within and between navigable waters, and have traditionally done so without obtaining NPDES permits from state or federal authorities. *Friends of the Everglades* ensures that such water transfers will continue to be exempt from NPDES, so long as the conditions of the Transfers Rule are met: that is, the water transfer does not *itself* introduce a pollutant from the outside world (*see* 73 Fed. Reg. at 33,705, pointing to oil leaks from hydroelectric turbines as an example), and does not subject the water being transferred to an intervening industrial, municipal, or commercial use. *See* 73 Fed. Reg. at 33,704. As examples of such intervening uses, the Transfers Rule points to water discharged from drinking water treatment facilities; water withdrawn for irrigation; and water used to cool power plants. *Id.* Thus, while *Friends of the Everglades* endorsed a new interpretation of the CWA, the decision is likely to have little impact on the pre-*Miccosukee* regulatory framework for water diversions. That framework — which has been in place since the inception of the CWA — recognizes the practical difficulty of applying NPDES pollution control requirements to facilities that typically handle extraordinarily large volumes of water with highly variable pollutant types and concentrations.

Friends of the Everglades also is broadly consistent with two previous appellate cases that interpreted the term "addition" in the context of hydroelectric facilities : *National Wildlife Federation v. Consumers Power Co.*, 862 F.2d 580 (6th Cir. 1988) (*Consumers Power*) and *National Wildlife Federation*

CWA Transfers

***Gorsuch* Decision**

v. Gorsuch, 693 F.2d 156 (D.C. Cir. 1982) (*Gorsuch*). In *Gorsuch,* the National Wildlife Federation challenged EPA's determination that a hydroelectric dam did not require a NPDES permit when it released reservoir water having low dissolved oxygen and bearing nutrients, sediment and other pollutants. Even though the dam itself induced or aggravated water quality, the District of Columbia Circuit found that EPA had reasonably interpreted the term "addition" to apply

> only if the *point source itself physically introduces a pollutant into water from the outside world*...the point or nonpoint character of pollution is established when the pollutant first enters navigable water, and does not change when the polluted water later passes through the dam from one body of navigable water (the reservoir) to another (the downstream river).

Gorsuch, 693 F.2d at 175 (emphasis added).

Pollution Introduction

In *Consumers Power*, the Sixth Circuit was faced with the similar issue of whether a hydroelectric dam required a NPDES permit for the discharge of entrained fish into Lake Michigan. Citing *Gorsuch,* the Sixth Circuit deferred to EPA's interpretation of "addition" and concluded that "[a]ny water quality change resulting from the release of entrained fish…is simply not, giving proper deference to the EPA definition, from the physical introduction of a pollutant from the outside world." *Consumers Power,* 862 F.2d at 586.

No "Addition"

The reasoning in both of these cases foreshadows the interpretation set forth by EPA in the Transfers Rule, which maintains that no "addition" of pollutants occurs when water is merely transferred from one navigable body to another. The Transfers Rule extends beyond the facts of *Gorsuch* and *Consumers Power,* however, to exempt pollutants that derive from "the outside world" — such as the phosphorous at issue in *Friends of the Everglades*, which entered the canal via agricultural runoff. By contrast, the pollutants in *Gorsuch* and *Consumers Power* were not introduced to the waters of the United States, but were brought into existence by the hydroelectric dam itself.

Second Circuit *Catskill* Decision

Friends of the Everglades also appears to create tension with the Second Circuit's *Catskills Mountain* decision interpreting the term "addition" in the context of water transfers. In *Catskill Mountains,* a chapter of Trout Unlimited sought to require the City of New York to obtain a NPDES permit for a transfer of water from the Schoharie Reservoir to Esopus Creek via a miles-long underground tunnel. The Second Circuit sided with plaintiffs, holding that the tunnel resulted in a "discharge of a pollutant" under a "plain meaning" interpretation of Section 301 of the CWA. *Catskill Mountains,* 273 F.3d at 494. According to the Second Circuit, the deference to EPA shown by the courts in *Gorsuch* and *Consumers Power* was unwarranted, given that EPA's interpretation of the CWA (prior to the Transfers Rule) had not been adopted through a formal rulemaking. In addition, the Second Circuit found that these two precedents were factually distinguishable: in the Second Circuit's view, the discharges in *Gorsuch* and *Consumers Power* did not constitute an "addition" because the hydroelectric dams in those cases did not connect two distinct bodies of water, but instead created a barrier within a single body of water. *Id.* at 490-92. In effect, the Second Circuit decided that the *Gorsuch* and *Consumers Power* courts had invoked an interpretation of the CWA that was broader than necessary to support the holdings reached.

Remaining Tension

The Eleventh Circuit's decision, however, is not distinguishable from *Catskill Mountains* on the same grounds: unlike *Gorsuch* and *Consumers Power*, *Friends of the Everglades* was decided on the basis of an exhaustive lower court opinion determining that the pumping stations connected two separate navigable bodies of water. *Friends of the Everglades* and *Catskill Mountains* thus appear to rest on conflicting interpretations of the CWA. The tension between those two cases may be reconciled by noting that the Second Circuit's opinion in *Catskill Mountains* was decided before EPA had undertaken the extensive proceeding that culminated in the publication of the Transfers Rule. Indeed, the Second Circuit itself indicated in *Catskill Mountains* that it might have been inclined to give EPA's unitary waters interpretation deference if that interpretation had been arrived at through a formal rulemaking. *Catskills Mountains,* 273 F.3d at 490.

Conclusion

"Intervening Uses" Question

Even though *Friends of the Everglades* did not involve a direct challenge to the Transfers Rule, the decision suggests that pending challenges to the Rule will likely be unsuccessful. Several of these challenges have been consolidated at both the district and appellate court level within the Eleventh Circuit. *See Friends of the Everglades v. U.S. EPA*, No. 08-13652-C (11th Cir. consolidated Sept. 10, 2008); *Friends of the Everglades v. U.S.,* No. 08-CV-21785-CMA (S.D. Fla. consolidated Sept. 18, 2008). Nonetheless, *Friends of the Everglades* fails to address a key uncertainty regarding the breadth of the water transfer exception identified in the Transfers Rule; that is, what activities qualify as "intervening uses." The Preamble to the Transfers Rule does not specifically identify what types or degrees of water utilization rise

CWA Transfers

Industrial Processes

to the level of an "intervening use," providing only a few illustrative examples. 73 Fed. Reg. at 33,704-05. The Preamble does explain that the exception will apply only to uses that cause the water to lose its status as "waters of the United States." This exception appears directed at capturing activities that subject water to an industrial or commercial process, rather than "simply chang[ing] the flow, direction or circulation of navigable waters... ." 73 Fed. Reg. at 33,705 n.10. Thus, waters that pass through a pumping station (as in *Friends of the Everglades*) or, similarly, through a hydroelectric turbine are unlikely to be regarded as undergoing an "intervening use" under the Transfers Rule. The precise contours of the "intervening use" exception are likely to be explored further by EPA, state agencies, and courts as the Transfers Rule is implemented in new contexts.

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Tomás Carbonell's practice focuses on climate change and environmental law, with an emphasis on federal legislative developments and potential EPA regulation of greenhouse gases under the Clean Air Act. He also works with Van Ness Feldman's Indian law, electric, clean technologies, and natural gas practice groups.

Yellowstone Compact

Montana Seniors Protected

Interstate Regulation

Reservoir Storage

YELLOWSTONE RIVER COMPACT DECISION

MONTANA V. WYOMING

SPECIAL MASTER RULES ON WATER RIGHT ISSUES - DENIES MOTION TO DISMISS

by David Moon, Editor

On June 2, 2009, Special Master Barton Thompson, appointed by the US Supreme Court, confirmed Montana's position that Article V of the Yellowstone River Compact (Compact) protects senior water users in Montana from junior upstream users in Wyoming. In his opinion, Special Master Thompson declared that the Compact generally protects pre-1950 water users in Montana from uses in Wyoming that began *after* the Compact was ratified (after January 1, 1950) and that Montana may sue Wyoming to enforce those water rights. The significance of the ruling from Montana's perspective was noted in a press release from Montana Attorney General Steve Bullock: "While the precise Compact violations must still be proven at trial, the ruling is significant, as Wyoming had claimed that it had the absolute right to drain the Tongue and Powder Rivers without regard to downstream users." [Additional background: see Budd-Falen, TWR #57.]

Wyoming's Position: Motion to Dismiss

The opinion concisely set forth Wyoming's position: "According to Wyoming, 'the drafters intentionally withheld from the Compact any directive or mechanism by which a water user in Montana could make an interstate "call" to shut down the diversion whose rights were junior to a Montana user's right.' Motion to Dismiss at 37. Wyoming claims that the drafters instead 'intended the states to regulate… pre-1950 diversions…under their own laws, unimpaired by the Compact.' Id. at 43. Under Wyoming's reading of the Compact, Montana would administer its pre-1950 uses, and Wyoming would administer its pre-1950 uses, but Montana, the downstream state, could not demand that Wyoming provide sufficient water to meet the needs of Montana's pre-1950 uses." Opinion at 14.

Special Master's Opinion

The Special Master's ruling on Wyoming's Motion to Dismiss set out several conclusions that will be extremely important as the case moves forward. "I conclude that Article V of the Compact generally protects pre-1950 appropriators in Montana from new surface and groundwater diversions in Wyoming, whether for direct use or for storage, that prevent adequate water from reaching those appropriators." The Special Master, however, went on to lay out several crucial caveats to that protection. First, he reiterated the general water law rule that protects storage water in upstream reservoirs. "Montana, however, cannot

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Northern Cheyenne Tribe

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Compact Intent

Resolution Under Compact

insist that Wyoming release storage water for the benefit of pre-1950 appropriators in Montana where the water was stored at a time when there was adequate water available for those appropriators." Second, his order addressed conservation measures initiated by users upstream in Wyoming, stating that Montana cannot "object to efficiency improvements by pre-1950 appropriators in Wyoming where the Wyoming appropriators put the conserved water to use on their existing acreage." *Id.* at 2.

The Special Master also ruled that any water shortages faced by Montana water users must first be dealt with by regulation of Montana junior water users *before* Montana can insist that Wyoming be required to let water flow downstream. "Moreover, where Montana can remedy the shortages of pre-1950 appropriators through purely intrastate means (e.g., by reducing deliveries to post-1950 appropriators in Montana) that do not prejudice Montana's other rights under the Compact, an intrastate remedy is the appropriate solution. Where this is not possible, however, the Compact requires Wyoming to ensure that new diversions in Wyoming do not interfere with the pre-1950 appropriations." *Id.*

As noted in the opinion, the case focuses on the Tongue and Powder river basins since Montana's Bill of Complaint (Complaint) alleges violations of the Compact only on those rivers. The Special Master, however, pointed out that the Compact covers the Yellowstone River and all its tributaries and, thus, "resolution of this case could have implications for water rights throughout the Yellowstone River system." In addition to irrigation use — which is the primary use of the waters of the Tongue and Powder rivers in both states — Montana alleged in its Complaint that "the production of coalbed methane has also led to sharp increases in recent years in the pumping of groundwater in the portion of the Powder River basin lying in Wyoming." *Id.* at 5.

Although the Northern Cheyenne Indian Reservation is within the greater Yellowstone River basin, the Compact expressly states that its terms should not be construed to impact Indian water rights. Nonetheless, the Northern Cheyenne Tribe did participate in the lawsuit by filing an amicus brief (friend of the court) in opposition to Wyoming's Motion to Dismiss. Anadarko Petroleum Company also made an appearance as amicus, in support of the Motion to Dismiss, and the United States is the third amicus in the case (opposing the Motion).

The Special Master specifically rejected Wyoming's position, finding that Article V of the Compact "unambiguously protects pre-1950 appropriative rights in Montana from new diversions and withdrawals in Wyoming subsequent to January 1, 1950." *Id.* at 12. The Special Master found the language of Article V(A) to be particularly important: "Article V(A) provides that pre-1950 rights 'shall continue to be enjoyed in accordance with the laws governing the acquisition and use of water under the doctrine of appropriation.' This language is instructive in two important respects. First, it mandates the *continued enjoyment* of pre-1950 rights…The Compact, moreover, pairs the term 'enjoyed' with the mandatory term 'shall' – requiring that action be taken under the Compact to ensure the continued enjoyment of pre-1950 appropriative rights. Montana water users could scarcely 'continue to … enjoy[]' pre-1950 water rights, under the common and straightforward meaning of those words, if Wyoming were free to allow new diversions or withdrawals that interfere with pre-1950 Montana appropriations." (emphasis in original) *Id.* The Special Master also reviewed earlier drafts of the Compact that included more limited protective language and contrasted that with the Compact language ultimately adopted. "The final Compact, by comparison, provided not for the *recognition* but for the *continued enjoyment* of pre-1950 rights, and it provided that such rights would be 'enjoyed in accordance with the laws governing the acquisition and use of water under the doctrine of appropriation,' not under the separate laws of Montana and Wyoming. Compact, Art. V(A)." (emphasis in original) *Id.* at 15.

The opinion provided additional reasons to reject Wyoming's position, including an examination of the intent and goals of the two states that was evident from the Compact language and the history of the Compact. The Special Master strongly rejected Wyoming's primary premise — that the Compact bars Montana and its pre-1950 appropriators from seeking any relief against diversions and withdrawals in Wyoming that interfere with the pre-1950 appropriations — by stating: "Rather than precluding the future protection of pre-1950 appropriative rights across state lines, Article V(A) expressly mandates their continued enjoyment. It strains credulity, moreover, to argue that Montana was willing to give up all interstate protection of its pre-1950 appropriative rights in entering into the Compact." *Id.* at 17.

The opinion also addressed specific allegations made by Montana (see Opinion, starting at 27). In this section, the Special Master utilizes the "doctrine of appropriation" to determine what types of action fall within the purview of Article V(A) of the Compact. Since the Compact language referred to the "doctrine of appropriation" as opposed to the water law of Montana or Wyoming to address particular allegations, the Special Master "looked first but not exclusively to the laws of Montana and Wyoming, and have also examined (1) decisions of the United States Supreme Court regarding the appropriation doctrine, and (2) general practice in applying appropriation law in other western states." *Id.* at 27. He concluded that: (1)

Yellowstone Compact

Salvaged Water

pre-1950 appropriations in Montana are protected from irrigation of new acreage in Wyoming if the new irrigation prevents sufficient water from reaching the pre-1950 users; (2) construction and use of new and expanded water storage facilities in Wyoming can violate the Compact if the storage occurs at a time when the needs of Montana pre-1950 users are not being met; (3) that groundwater development in Wyoming can in some situations violate the Compact; and (4) consumption of water on acreage irrigated prior to January 1, 1950 can be increased through efficiency measures without violating the Compact (i.e. Wyoming users who implement efficiency measures are entitled to use the salvaged water on existing lands). "Uses of conserved water for 'beneficial use on new lands or for other purposes,' by contrast, fall within Article V(B) of the Compact and are subject to the same restrictions discussed earlier for post-1950 water uses." *Id.* at 43.

Groundwater Withdrawals Governed by Compact

Interstate Compacts

Wyoming argued that the Compact only governs surface water and not groundwater pumping, which is primarily associated with coalbed methane production in the Tongue and Powder River basins in Wyoming. The Compact never uses the term "groundwater." The Special Master, however, did not accept this argument. "This does not end the inquiry, however, because the United States Supreme Court has found that several other interstate river compacts regulate at least some groundwater withdrawals even though they never use the word. See *Kansas v. Colorado*, 543 U.S. 86, 90-91 (2004) (1949 Arkansas River Compact); *Kansas v. Nebraska*, 530 U.S. 1272 (2000) (Republican River Compact); see also *Texas v. New Mexico*, 462 U.S. 554, 559-560 (1983) & 482 U.S. 124, 127-128 (Pecos River Compact) (approving formula for determining violations that takes groundwater use into account). In determining whether interstate river compacts regulate groundwater extractions, the Supreme Court and prior special masters have looked first to determine whether the language of the compact is sufficiently broad and inclusive to encompass groundwater even though groundwater is never explicitly mentioned. See, e.g., *Kansas v. Nebraska*, First Report of the Special Master, Jan. 28, 2000, at 19-23." *Id.* at 30-31. Examining the language of the Compact, especially Article II(D) that defines the term "Yellowstone River System," the Special Master found that the language "is sufficiently broad to include at least some groundwater that is hydrologically connected to the surface channels of the Yellowstone River and its tributaries. The language reflects a clear intent to cover all sources of water for the Yellowstone River and its tributaries both by its explicit inclusion of 'springs and swamps' and by its explicit reference to the 'sources' of the river and tributaries." *Id.* at 31.

Broad Language

Hydrologic Connection

The Special Master went on to point out another reason to include groundwater within the confines of the Compact. "Beginning with cases in the late 19th century, courts employing the appropriation doctrine have generally managed the surface channel of a river jointly with groundwater established to be hydrologically interconnected to the surface channel." In addition, the Special Master looked to the US Supreme Court for its view on the subject and found that the "Supreme Court of the United States recognized that groundwater can be hydrologically interconnected with a surface channel and should in at least some instances be treated as part of that channel in its first equitable apportionment case, *Kansas v. Colorado*, 206 U.S. 46 (1907)." *Id.* at 32-33. Finally, the opinion also examined Montana and Wyoming's treatment of the issue of hydrologically interconnected groundwater and surface water. The Special Master did, however, state that the "question of the exact circumstances under which groundwater pumping violates Article V(A) is appropriately left to subsequent proceedings in this case." *Id.* at 42.

Special Master Thompson's opinion covers the water law subjects discussed above in much greater detail and is well worth reading for his thoughtful examination of the issues involved. The complete Memorandum Opinion is available on the Montana Department of Justice (MDOJ) website listed below.

For Additional Information:
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MDOJ website:
www.doj.mt.gov/news/releases2009/20090603.asp

Wyoming Attorney General's website:
http://attorneygeneral.state.wy.us/Montana_v_Wyoming.htm

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WATER BRIEFS

REGIONAL US IMPACTS OF GLOBAL CLIMATE CHANGE

NEW FEDERAL REPORT PROVIDES ASSESSMENT OF NATIONAL & REGIONAL IMPACTS

Climate change is already having visible impacts in the United States, and the choices we make now will determine the severity of its impacts in the future, according to a new and authoritative federal study assessing the current and anticipated domestic impacts of climate change.

The Report, "*Global Climate Change Impacts in the United States*," compiles years of scientific research and takes into account new data not available during the preparation of previous large national and global assessments. It was produced by a consortium of experts from 13 US government science agencies and from several major universities and research institutes.

"This new Report integrates the most up-to-date scientific findings into a comprehensive picture of the ongoing as well as expected future impacts of heat-trapping pollution on the climate experienced by Americans, region by region and sector by sector," said John P. Holdren, Assistant to the President for Science and Technology and director of the White House Office of Science and Technology Policy. "It tells us why remedial action is needed sooner rather than later, as well as showing why that action must include both global emissions reductions to reduce the extent of climate change and local adaptation measures to reduce the damage from the changes that are no longer avoidable."

The Report, which confirms previous evidence that global temperature increases in recent decades have been primarily human-induced, incorporates the latest information on rising temperatures and sea levels; increases in extreme weather events; and other climate-related phenomena. Adding greatly to its practical value in the realm of policy and planning, it is the first such Report in almost a decade to break out those impacts by US region and economic sector, and the first to do so in such great detail.

Commissioned in 2007 and completed this spring, the 190-page science-based Report is a consensus product spanning two Presidential administrations. It underwent intensive review by scientists inside and outside of government and includes information more recent than that incorporated into the last major Report on global climate change released by the Intergovernmental Panel on Climate Change.

The Report emphasizes that the choices we make now will determine the severity of climate change impacts in the future. "Implementing sizable and sustained reductions in carbon dioxide emissions as soon as possible would significantly reduce the pace and the overall amount of climate change," the Report states, "and would be more effective than reductions of the same size initiated later."

The study finds that Americans are already being affected by climate change through extreme weather, drought and wildfire trends and details how the nation's transportation, agriculture, health, water and energy sectors will be affected in the future. The Report also finds that the current trend in the emission of greenhouse gas pollution is significantly above the worst-case scenarios previously considered.

AMONG THE MAIN REPORT FINDINGS:

- Heat waves will become more frequent and intense, increasing threats to human health and quality of life. Extreme heat will also affect transportation and energy systems, and crop and livestock production.
- Increased heavy downpours will lead to more flooding, waterborne diseases, negative effects on agriculture, and disruptions to energy, water, and transportation systems.
- Reduced summer runoff and increasing water demands will create greater competition for water supplies in some regions, especially in the West.
- Rising water temperatures and ocean acidification threaten coral reefs and the rich ecosystems they support. These and other climate-related impacts on coastal and marine ecosystems will have major implications for tourism and fisheries.
- Insect infestations and wildfires are already increasing and are projected to increase further in a warming climate.
- Local sea-level rise of over three feet on top of storm surges will increasingly threaten homes and other coastal infrastructure.
- Coastal flooding will become more frequent and severe, and coastal land will increasingly be lost to the rising seas.

Responses to climate change fall into two categories. The first involves "mitigation" measures to limit climate change by reducing emissions of heat-trapping pollution or increasing their removal from the atmosphere. The second involves "adaptation" measures to improve our ability to cope with or avoid harmful impacts, and take advantage of beneficial ones. "Both of these are necessary elements of an effective response strategy," said Jerry Melillo of the Marine Biological Laboratory in Woods Hole, MA, a Report co-chair.

The Report draws from a large body of scientific information, including the set of 21 Synthesis and Assessment Reports from the US Global Change Research Program. The government agencies affiliated with the program include the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Interior, State, and Transportation; the Environmental Protection Agency; NASA; National Science Foundation; Smithsonian Institution; and the United States Agency for International Development.

For info:

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The Report is available for download online: http://www.globalchange.gov/usimpacts

WATER BRIEFS

WATER-ENERGY — US

NATIONAL SYMPOSIUM

The Ground Water Protection Council (GWPC) and the US Department of Energy (DOE) will host the first Water/Energy Sustainability Symposium to address challenges in meeting future water and energy needs on September 13-17, 2009 in Salt Lake City. This innovative symposium will bring together leaders from government, energy and water industries, academia, water organizations and other stakeholders to explore the complex water/energy relationship and help chart a collaborative course to provide clean, affordable energy and water in a sustainable manner.

This symposium is built upon the DOE's "Water for Energy" research conducted at twelve national energy labs. In its 2006 Report to Congress on the interdependency of energy and water, DOE recognized that supplying energy requires water and impacts water quality, but also that supplying water requires energy and that collaboration on water and energy planning is critical.

DOE has teamed with GWPC as the host organization for the symposium. GWPC is a national association of state ground water and underground injection control agencies. This symposium is being held in conjunction with GWPC's 2009 Annual Forum, which also includes programs on water availability, sustainability, and water quality.

Additional "Water-Energy Sustainability Partner" organizations have been invited to broaden the discussion at the symposium. To date, partner organizations include several water organizations including the Western States Water Council, Association of Safe Drinking Water Administrators, National Ground Water Association, National Rural Water Association, and Alliance for Water Efficiency. Several energy and power organizations, such as the Petroleum Technology Transfer Council, are also partnering on this symposium.

For info: GWPC's website: www.gwpc.org; see TWR calendar below

MINE SLURRY PERMIT — US

CORPS V. EPA AUTHORITY

The US Supreme Court (Court), in *Coeur Alaska, Inc. v. Southeast Alaska Conservation Council et al.*, No. 07-984 (June 22, 2009), reversed a decision of the Ninth Circuit Court of Appeals that had invalidated a permit issued by the US Army Corps of Engineers (Corps) for the discharge of mine slurry from an Alaska gold mine into a lake located three miles from the mine site.

Justice Kennedy penned the opinion for the 6-3 decision that the Corps had the authority to permit Coeur Alaska's discharge of mine slurry as "fill material" under section 404 of the federal Clean Water Act (CWA) — as opposed to EPA under section 402 of the CWA — and that the Corps acted in accordance with the CWA in issuing the permit.

The Court also found that that the Corps did not violate EPA's "new source performance standards" for gold mines. Those standards were promulgated by EPA under the CWA (see section 306). The Court's resolution of the jurisdictional issue ultimately turned not on the language of the CWA or regulations issued by the Corps and EPA, but rather on the agencies' subsequent interpretation of regulations promulgated under the CWA. Focusing on agency statements "of practice and policy," Justice Kennedy's opinion relied heavily on an internal EPA document ("Regas Memorandum") which explains that EPA's new source performance standards apply only to the discharge of water from the lake into the downstream creek, and not to the initial discharge of slurry into the lake (see: www.vnf.com/assets/attachments/EPAs_2004_Regas_Memo.pdf).

The decision carries significant implications for mines seeking permits under the CWA for the discharge of tailings and could have implications as well for other categories of point sources regulated under the CWA. The decision could induce the Administration, or Congress, to revise current rules for such discharges.

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PECOS SETTLEMENT — NM/TX

CONDITIONS MET

A joint declaration was filed June 11th with the Fifth Judicial District Court in Chaves County among all parties to the Pecos River Settlement Agreement to agree that conditions for implementation of the Settlement have been substantially met.

Parties to the Settlement Agreement, signed March 25, 2003, include: the State of New Mexico; the New Mexico Interstate Stream Commission (Commission); the Pecos Valley Artesian Conservancy District (PVACD); the Carlsbad Irrigation District (CID); and the United States government.

In 2002, legislation sponsored by Sen. Tim Jennings (D-Roswell) and former Rep. Joseph Stell (D-Roswell) passed (codified as N.M. Stat. § 72-1-2.4), which authorized the Interstate Stream Commission to purchase land with water rights in fulfillment of the terms of the Settlement. Those terms required the Commission purchase a minimum of 4,500 and up to 6,000 acres of water rights in the CID, 7,500 and up to 11,000 acres of water rights in the Roswell Artesian Basin, and up to 1,000 acres of water rights in the Fort Sumner Basin.

To date, the Commission has purchased 4,498 acres of land in the CID, and as of June 30, 2009, the Commission is expected to have purchased water rights associated with 7,248 acres of land in the Roswell Artesian Basin. Additionally, the Commission has purchased more than 1,000 acres of water rights in the Fort Sumner Basin and developed two augmentation well fields capable of delivering 15,750 acre-feet of water to the Brantley Reservoir.

"The Commission is committed to work in good faith to acquire a full 7,500 acres of water rights within the Roswell Artesian Basin," said Interstate Stream Commission Director Estevan López. "However, it makes sense to implement the Settlement in advance of reaching that threshold so that the settlement parties can begin to reap the benefits of the Settlement immediately rather than having to wait another year."

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"Implementation of this historic Settlement Agreement has been years in the making. It is a significant accomplishment that ensures compliance with New Mexico's interstate compact delivery requirements to Texas on the Pecos River," said State Engineer John D'Antonio. "It not only brings the Pecos River into balance, but also provides much needed stability to the water right owners in the Lower Pecos Valley."

"This collaborative effort avoided the negative impacts of a priority call," said Governor Bill Richardson. "The consequences of noncompliance would have devastated the economies of the Pecos River Valley and New Mexico."

To date, more than $64 million have been spent on Settlement implementation since 2005.

The implementation of the Settlement Agreement helps assure long-term compliance with the Pecos River Compact, provides additional water supplies to the CID, and protects junior groundwater rights in the PVACD from the threat of a priority call by Texas.

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RECLAMATION PUMPING CA

NOAA BIOP FINDS JEOPARDY

NOAA released its final biological opinion on June 4 that finds the water pumping operations in California's Central Valley by the federal Bureau of Reclamation (Reclamation) jeopardize the continued existence of several threatened and endangered species under the jurisdiction of NOAA's Fisheries Service. Reclamation has provisionally accepted NOAA's recommended changes to its water pumping operations, and said it will begin to implement its near-term elements as it carefully evaluates the overall opinion, according to a NOAA press release.

Federal biologists and hydrologists concluded that current water pumping operations in the Federal Central Valley Project and the California State Water Project should be changed to ensure survival of winter and spring-run Chinook salmon, Central Valley steelhead, the southern population of North American green sturgeon and Southern Resident killer whales, which rely on Chinook salmon runs for food. The water projects included in the opinion are Shasta Dam at the upper headwaters of the Sacramento River, Folsom and Nimbus dams on the American River, and New Melones Dam on the Stanislaus River. The opinion also covers the state and federal export facilities in the Delta, the Nimbus hatchery on the American River, and the operations of diversion structures, including the Red Bluff Diversion Dam on the mainstem Sacramento and the Delta Cross Channel gates in the Delta.

As part of the final opinion, NOAA's Fisheries Service provided a number of ways Reclamation can operate the water system to benefit the species, including increasing the cold water storage and flow rates. Such methods will enhance egg incubation and juvenile fish rearing, as well as improve the spawning habitat and the downstream migration of juvenile fish. Changing water operations will impact an estimated five to seven percent of the available annual water on average moved by the federal and state pumps, or about 330,000 acre-feet per year. Agricultural water use in California is roughly 30 million acre-feet per year.

Water operations will not be affected by the opinion immediately, according to NOAA, and will be tiered to water year type. The opinion includes exception procedures for drought and health and safety issues. In addition, the opinion calls for Reclamation to develop a genetics management plan and an acoustic tagging program to evaluate the effectiveness of the actions and pilot passage programs at Folsom and Shasta reservoirs to reintroduce fish to historic habitat.

The American Recovery and Reinvestment Act will mitigate some costs resulting from the opinion's recommended actions. The Department of the Interior identified $109 million to construct a Red Bluff Pumping Plant that will allow the old Red Bluff Diversion Dam to be operated in a "gates out" position to allow salmon and green sturgeon unimpeded passage. In addition, the Act contains $26 million to restore Battle Creek, a salmon tributary to the Sacramento River.

It didn't take long for Westlands Water District (Westlands) to join with 29 other public water agencies to sue NOAA over the Biological Opinion. Those entities argue that "the National Marine Fisheries Service should have prepared an environmental impact statement before adopting a salmon recovery plan that will divert hundreds of thousands of acre feet of California's freshwater supplies into the ocean." Westlands' press release of June 15 noted that, "[T]he U.S. District Court for the Eastern District of California recently granted a preliminary injunction in connection with a similar lawsuit that pointed to the failure of another federal agency, the Fish and Wildlife Service, to prepare an environmental assessment before imposing a set of restrictions on behalf of the Delta Smelt that cut California's water supply by nearly one third. Hearings on the merits of those challenges will be conducted later this year."

Tom Birmingham, General Manager of the Westlands Water District, said that "[T]he Obama Administration's salmon plan mimics the smelt proposal and it suffers from the same defects." In both the smelt and salmon proceedings, Westlands filed its lawsuit jointly with the San Luis & Delta-Mendota Water Authority.

For info: Jim Milbury, NOAA, 562/ 980-4006; Final biological opinion and alternative actions at NOAA's website: http://swr.nmfs.noaa.gov/ocap.htm; Sarah Woolf, Westlands, 559/ 341-0174

RAINWATER COLLECTION CO

LAW ALLOWS PILOT PROJECTS

Governor Bill Ritter recently signed into law a bill that sets up a pilot program to allow limited rainwater harvesting by landowners. Otherwise, it is illegal for people to collect rainfall since Colorado water law treats rainwater as part of the water source that belongs to downstream water rights owners (aka "Doctrine of Prior Appropriation"). The state of Colorado

WATER BRIEFS

claims the right to all moisture in the atmosphere that falls within its borders and "said moisture is declared to be the property of the people of this state, dedicated to their use pursuant" to the Colorado constitution. As further noted on the Colorado Office of the State Engineer's website, "[T]his system of water allocation plays an important role in protecting the owners of senior water rights that are entitled to appropriate the full amount of their decreed water right, particularly when there is not enough to satisfy them and parties whose water right is junior to them."

Senate Bill 09-080, which became effective on July 1, allows limited collection and use of precipitation for landowners, only if: the property on which the collection takes place is residential property; the landowner uses a well, or is legally entitled to a well, for the water supply; the well is permitted for domestic uses according to Section 37-92-602, C.R.S.; there is no water supply available in the area from a municipality or water district; the rainwater is collected only from the roof; and the water is used only for those uses that are allowed by, and identified on, the well permit. The website listed below lists the instructions to comply with Senate Bill 09-080, Rooftop Precipitation Capture.

The changes in Senate Bill 09-080 apply only to residential properties that are supplied by a well (or could qualify for a well permit). Another new law signed by the Governor on June 2, HB 09-1129, allows developers to apply for approval to be one of ten statewide pilot projects that harvest rainwater and put it to beneficial, but non-essential, use in the subdivision. These projects may only operate according to an engineered plan, submitted to the State Engineer for approval and eventually, to the Water Court. HB 09-1129 does not apply at all to individual homeowners. This pilot program is effective through July 1, 2020.

For info: State Engineer's website: www.water.state.co.us

SNOWBOWL DECISION AZ

SEWAGE EFFLUENT SNOWMAKING

On June 8, the US Supreme Court (Court) let stand a Ninth Circuit Court of Appeals decision, without comment, effectively allowing Arizona Snowbowl to go forward with its plan to make artificial snow with reclaimed sewage effluent on the San Francisco Peaks. Several Indian tribes fought the plan in a lengthy lawsuit against the US Forest Service, citing the Religious Freedom Restoration Act (RFRA) to seek protection for their sacred mountain. By deciding not to take up the case, the Court essentially adopted the Ninth Circuit's conclusion that Snowbowl's proposal to use recycled wastewater to make artificial snow on the Peaks did not violate RFRA since the Plaintiffs failed to demonstrate that the Snowbowl upgrade "coerces them into violating their religious beliefs or penalizes their religious activity," as required to establish a "substantial burden" on the exercise of their religion under RFRA. *Navajo Nation, et al. v. USFS, et al.* (Ninth Circuit, Case No. 06-15371), August 8, 2008. See Moon, TWR #55.

For info: Howard Shanker, The Shanker Law Firm, 928/ 226-0560 or email: howard@shankerlaw.net; Janice Schneider, Latham & Watkins, 202/ 637-2200

ENVIRONMENTAL FLOWS TX

GUIDANCE RELEASED

On Jun 5, the Science Advisory Committee for the Texas Commission on Environmental Quality released a guidance document entitled "*Methodologies for Establishing a Freshwater Inflow Regime for Texas Estuaries Within the Context of the Senate Bill 3 Environmental Flows Process*." The report addresses the establishment of an environmental flow regime to maintain a sound ecological environment in the estuarine systems on the Texas Coast. SB 3, passed by the Texas Legislature in 2007, directed the use of an environmental flow regime in developing flow standards. It defined an environmental flow regime as a schedule of flow quantities that reflects seasonal and yearly fluctuations that are shown to be adequate to support a sound ecological environment and to maintain productivity, extent, and persistence of key aquatic habitats.

This guidance document — a "working draft"— can be found on the Environmental Flows Resources page located at the following website: www.tceq.state.tx.us/permitting/water_supply/water_rights/eflows/resources.html.

For info: Cory Horan, TCEQ, email: choran@tceq.state.tx.us

WATER REUSE WEST

RECLAMATION STIMULUS PROJECTS

Secretary of the Interior Salazar announced July 1 that the Bureau of Reclamation has identified 27 water reclamation and reuse projects that will share in a total of $134.3 million under the American Recovery and Reinvestment Act of 2009 (ARRA). These water projects — known as "Title XVI" projects for the title of Public Law 102-575 that established the program — facilitate the reclamation and reuse of wastewater and naturally impaired ground and surface waters.

The $134.3 million for these projects is part of President Obama's $1 billion investment of ARRA funding provided by the Department of the Interior for water projects across the West. In April, Secretary Salazar announced an additional $260 million in ARRA funding to address California's current drought conditions and to meet the state's long-term water supply infrastructure needs. The July 1 announcement brings total funding for California water-related activities funding under the Interior portion of ARRA to $381 million.

These 27 projects will team non-federal sponsors with local communities and the federal government to provide growing communities with new sources of clean water while promoting water and energy efficiency and environmental stewardship. Federal funding will be leveraged to construct a total of more than $675 million in Title XVI projects.

For info: Joan Moody, Interior, 202/ 208-6416 or Interior's website: www.interior.gov/recovery

WATER BRIEFS

CONJUNCTIVE USE ID

FUTILE CALL / SEASONAL VARIABILITY

The saga over conjunctive management of groundwater and surface water in the Eastern Snake River Aquifer continued with a District Court order. On June 19, District Court Judge John Melanson remanded the cases involving the Clear Springs Delivery Call and the Blue Lakes Delivery Call back to the Director of the Idaho Department of Water Resources (Director) to review and amend some portions of the orders concerning water "calls" in the Eastern Snake Plain Aquifer. See Budge, TWR #64.

The Judge remanded the cases to the Director and ordered him to "apply the appropriate burdens of proof and evidentiary standards when considering seasonal variations as part of a material injury determination as explained herein." Order at 58. This Conclusion of Law was based on the Judge's finding that the "Director's reliance on pre-decree conditions, and in particular 'seasonal variations' in spring flows, in determining material injury to senior rights is not contrary to law but in this case the Director impermissibly used the material injury analysis to shift burden of proof to senior." *Id.* at 17.

The Order addresses the "futile call doctrine" as it relates to "seasonal variations" in spring flows that may or may not be caused by ground water pumping (see Order at 17-24). "Simply put, a determination of material injury requires the Director to determine what portion of a senior's water deficit is caused by naturally occurring seasonal lows as opposed to the portion of the deficit that results from the exercise of junior rights. Both the material injury analysis under the CMR and the futile call doctrine require the director to exclude any water deficit attributable to such seasonal variations. Juniors cannot be curtailed to provide water that a senior would not have received anyway due to seasonal variations; nor can juniors be required to provide replacement water for such amounts." *Id.* at 21-22.

Readers interested in conjunctive management and Idaho's approach to the "calls" from senior water right holders may want to review details of the 58-page Order. The Water Report plans to cover the saga with additional full-length articles in the future as the cases make their inevitable progression to the Idaho Supreme Court.

For info: Randy Budge, Racine Olson Nye Budge & Bailey, 208/ 232-6101 or email: rcb@racinelaw.net; Order available on IDWR's website: www.idwr.idaho.gov/ >> click on "Thousand Springs Area Related Water Call Related Documents"

ESA RECOVERY US

NOAA FISHERIES BIENNIAL REPORT

NOAA Fisheries has released its *Biennial Report to Congress on the Recovery Program for Threatened and Endangered Species*. This report addresses the conservation, management, and research activities conducted for the benefit of domestic endangered and threatened species, covering the time period October 1, 2006, through September 30, 2008. It includes accounts of each species, its status, current threats, conservation actions undertaken during this time frame, and priority actions needed. The report notes that 37% of listed species under NOAA jurisdiction are stable or increasing, 29% are known to be declining, and 34% are unknown or mixed in their status. The report is available at the website listed below.

For info: Larissa Plants, NOAA, email: Larissa.Plants@noaa.gov or website: www.nmfs.noaa.gov/pr/laws/esa/biennial.htm

WATER USE MEASURE NM

NEW STANDARDIZED METHOD

The New Mexico Office of the State Engineer has developed a standardized methodology for **g**allons **p**er **c**apita **p**er **d**ay (GPCD) calculations in New Mexico, which is a standardized tool for water use reporting. The methodology will be used by the State Engineer to track municipal water use over time and manage the State's water resources into the future. The methodology will also provide drinking water suppliers with a categorized baseline of historical and current water use, and assist both the State and the drinking water supplier in planning, tracking and reporting water uses.

State Engineer staff designed a "NMOSE GPCD" calculator to implement the methodology. It uses a Microsoft Excel ™ structure to record the data and to develop the results. A NMOSE GPCD Instruction Module provides the details on how the Calculator works, to include the data to input and how to interpret the results. Both the Calculator and the Instruction Module are available on the Office of the State Engineer website: www.ose.state.nm.us/newtstweb/wucp_gcpd.html.

The GPCD methodology will be required as part of an application when requesting to hold water unused (40 Year Plans), in water conservation plans, and for mandated water use reporting. It may also be required as a permit condition in sensitive hydrologic basins, emergency permits, and large or excessive users. This type of data is also requested as part of the Uniform Funding Application that is used for evaluating water and wastewater loan fund requests.

The methodology was developed by the New Mexico Office of the State Engineer in cooperation with leading water engineers and conservation experts in the nation. The methodology and the GPCD Calculator were reviewed within New Mexico and nationally by state agencies, municipalities, and university and water conservation experts. It was pilot tested by seven drinking water suppliers within the state.

For info: Julie Maas, NM State Engineer Office, 505/ 765-2011

GULF "DEAD ZONE" US

NOAA'S DIRE FORECAST

A team of NOAA-supported scientists from the Louisiana Universities Marine Consortium, Louisiana State University, and the University of Michigan is forecasting that the "dead zone" off the coast of Louisiana and Texas in the Gulf of Mexico this summer could be one of

WATER BRIEFS

the largest on record. Scientists are predicting the area could measure between 7,450 and 8,456 square miles, or an area roughly the size of New Jersey. Additional flooding of the Mississippi River since May could result in a larger dead zone. The largest one on record occurred in 2002, measuring 8,484 square miles.

The dead zone is an area in the Gulf of Mexico where seasonal oxygen levels drop too low to support most life in bottom and near-bottom waters. Dead zones are caused by nutrient runoff, principally from agricultural activity, which stimulates an overgrowth of algae that sinks, decomposes, and consumes most of the life-giving oxygen supply in the water. The dead zone size was predicted after researchers observed large amounts of nitrogen feeding into the Gulf from the Mississippi and Atchafalaya Rivers.

For info: NOAA's Gulf of Mexico Hypoxia Watch website: http://ecowatch.ncddc.noaa.gov/hypoxia

NAVAJO NATION LAUDED SW

ENVIRONMENTAL PROTECTION/LEADERSHIP

EPA formally recognized the Navajo Nation Environmental Protection Agency (NN EPA) June 16 for their efforts to protect and preserve the environment over the past 30 years. The ceremony took place in Window Rock, Arizona, where Navajo Nation leaders met with federal officials to discuss environmental priorities for the Navajo Nation, which administers several of the country's largest and most sophisticated tribal environmental programs.

NN EPA, four federal agencies and EPA are working together to implement a 5-year plan to address the legacy of over 500 abandoned uranium mines on the Navajo Nation. Currently, NN EPA and EPA are working to identify and cleanup mines, assess potentially contaminated structures, and conduct massive outreach efforts to warn residents of potential hazards from unregulated, contaminated wells. Together, the agencies have assessed 113 structures and are in the process of demolishing and excavating 27 radiation-contaminated structures and 10 residential yards.

This year, the NN EPA, the Navajo Department of Water Resources, EPA, and the Indian Health Service are working together to provide safe drinking water to 3,000 people and wastewater infrastructure to 2,500 homes. Over the past 25 years, Navajo homes with access to safe drinking water rose by nearly 20 percent. The Navajo Nation remains the first and only tribal government that has EPA's authority to implement the federal drinking water program, which ensures that the 162 public water systems serving approximately 150,000 people meet federal drinking water requirements. These groundwater supplies are also protected through NN EPA's underground injection control program. In addition to that program, the Navajo Nation also protects groundwater resources through their underground storage tank program.

Other programs protect and restore Navajo Nation's land and soil. Last year, Navajo Nation Pesticide Program's federally credentialed inspectors conducted 120 federal pesticides inspections and 25 tribal inspections. To address open dumps throughout the Navajo Nation, EPA has invested $2 million dollars since 1990. To date, 41 open dumps have been closed using federal and Navajo Nation funds.

In February 2008, the Navajo Nation Council passed the Navajo Nation Comprehensive Environmental Response, and Liability Act (Navajo CERCLA) or Superfund modeled after EPA's program. This is the first tribal Superfund law in the country, and is a huge success for the Navajo Nation, as it gives the Tribe the authority to address hazardous contamination across the Nation.

For info: Margot Perez-Sullivan, ERA, 415/ 947-4149 or email: Perezsullivan.margot@epa.gov; Navajo Nation website: www.navajonationepa.org/

MUNICIPAL STORMWATER WA

ECOLOGY MODIFIES PERMIT

On June 17, the Washington Department of Ecology (Ecology) issued modifications of three municipal stormwater permits: the Phase I Permit, the Western Washington Phase II Permit, and the Eastern Washington Phase II Permit. Ecology issued the permits on January 17, 2007. The agency modified the three permits to address the outcomes of appeals. The changes apply to both the state's largest municipalities, covered under the state's Phase 1 municipal stormwater permit, and the next-largest municipalities, covered under Phase 2 permits.

Polluted runoff — stormwater — is the leading threat to water quality in all of the state's urban, most populated areas. Cleaning up and managing stormwater is one of the state's highest priorities. Washington's municipal stormwater permits are the rule book for cities and counties for controlling their stormwater.

The modifications provide requirements for low-impact development for all Phase 1 municipalities and for Phase 2 municipalities in Western Washington, in keeping with two state Pollution Board rulings. Low-impact development includes use of vegetation, porous pavement, and rain gardens to collect rainwater and reduce uncontrolled runoff.

In addition, Ecology modified the Phase 1 permit, and the Western Washington Phase 2 permit, to allow a gradual ramping up of inspection requirements over several years. Phase 2 municipalities in Western Washington are provided a six-month extension in their due date to complete their ordinances, from August 2009 to February 2010. Eastern Washington Phase 2 communities are provided an extension of an additional year, until February 2011, to put their codes into effect and to upgrade their maintenance and operations plans.

For info: Additional details/contacts on Ecology's website**:** www.ecy.wa.gov/programs/wq/stormwater/municipal/permitMOD.html

WATER BRIEFS

PESTICIDE RESTRICTION CA

EPA SETTLEMENT PROPOSAL

SF BAY AREA

On July 1st, 2009, EPA announced in the Federal Register a proposed settlement agreement with the Center for Biological Diversity over a 2007 lawsuit. 74 Fed Reg pp 31427-31428 (July 1, 2009).

The lawsuit alleged that the EPA violated the federal Endangered Species Act (ESA) by failing to evaluate or adequately regulate the use of toxic pesticides in areas of the San Francisco Bay Area known to provide habitat for 11 species ESA-listed as endangered or threatened.

In the proposal, the EPA agrees to formally review the effects of 74 different pesticides on the Delta smelt, Alamenda whipsnake, bay checkerspot butterfly, California clapper rail, California freshwater shrimp, California tiger salamander, salt marsh harvest mouse, San Francisco garter snake, San Joaquin kit fox, tidewater goby, and valley elderberry longhorn beetle. Use of pesticides in some especially critical habitats will be restricted or cancelled while the formal evaluations are being completed. The agreement sets a June 20, 2014, deadline for the EPA to complete the determinations. Impacts of many of these same chemicals on ESA-listed salmonids is already being considered by NMFS as a result of two successful earlier lawsuits, *Washington Toxics Coalition, et al., vs. EPA* and *NCAP et al. vs. NMFS*. (See Beale, TWR #43)

The mix of pesticides in the Bay-Delta is viewed as having played a major role in the collapse of native fish populations, and pesticides are a leading cause of the loss of native amphibians, according to the Center for Biological Diversity.

EPA will accept public comment on the proposed settlement until July 16th. After that time, a judge in the US District Court in San Francisco must sign the settlement. To submit comments, visit www.regulations.gov and follow the instructions for submitting comments.

For info: Rulemaking Portal: www.regulations.gov

Federal ID#: EPA–HQ–OPP–2009–0481

WASTEWATER TREATMENT WA

PUGET SOUND ISSUES — INCREASED STRINGENCY

The Washington State Department of Ecology (Ecology) recently issued a renewed discharge permit that includes some more stringent requirements for Washington's largest municipal wastewater treatment plant. The five-year discharge permit for King County's West Point wastewater treatment plant and **c**ombined **s**ewer **o**verflow (CSO) system is a key tool to provide critical water quality protection for Puget Sound.

The permit comes as Ecology conducts several studies and plans to support long-range goals to restore and protect Puget Sound. Ecology has decided to move ahead with this improved permit while conducting these long-range studies in order to keep the permit current with the emerging science. State efforts to clean up Puget Sound are being spearheaded by the Puget Sound Partnership, set up under the state's "Puget Sound Initiative." According to an Ecology press release, several studies now under way for the Puget Sound Initiative will provide information that could lead to new or changed permitting strategies.

The West Point plant serves 1.3 million people living and working in 14 cities and sewer districts in parts of King and southern Snohomish counties. The facility treats an average of approximately 100 million gallons of incoming sewage per day. Treatment plant permits last for five years.

Older sections of Seattle have a single combined sewer system that carries sewage and stormwater. CSO storage and treatment systems manage high flows that result from storms, to prevent or reduce releases of untreated combined sewage and stormwater. The permit contains updated schedules for implementing projects to reduce overflows.

The permit includes King County's CSO facilities, which include four CSO storage and treatment facilities and 38 individual CSO outfalls.

New or updated provisions in the renewed permit include:

- Requiring more reliable disinfection of treated wastewater at West Point
- Setting more stringent limits on fecal coliform bacteria and chlorine from CSO treatment plants
- Adding pH limits (acidity and alkalinity) for CSO treatment plant discharges
- Requiring increased monitoring of contaminants in the West Point discharge and how these affect Puget Sound water and sediments
- Added requirements to track the input of industrial chemicals into the sewer system

Puget Sound studies are currently under way in three areas that could affect future permits for West Point and other treatment plants. The first study area involves controlling nutrient pollution to maintain dissolved oxygen levels. The South Sound Dissolved Oxygen Study research includes King County's wastewater treatment plants. It examines how various sources of nitrogen and phosphorus affect dissolved oxygen levels. These pollutants feed processes that use up oxygen that fish and other marine life need to live. Preliminary results are due in later this year, with a final report in 2010. An economic and technology study will also evaluate the costs and benefits of available technologies that can reduce nitrogen and phosphorus in treated wastewater.

A study addressing toxics and pharmaceuticals — due later this year — will assess the presence of pharmaceuticals and endocrine disruptors (which interfere with biological reproduction). An evaluation is also planned that will report on the concentrations of toxic compounds released by treatment plants (due in about one year).

The third area involves mixing zones. A recent study of approaches in several states found Washington's mixing zone standards among the most stringent in the nation. Mixing zones, which are allowed under Washington state regulations, are limited areas where water quality standards may be exceeded. Ecology is in the process of assessing the use of all mixing zones allowed in active permits.

For info: Ecology's Puget Sound website: www.ecy.wa.gov/puget_sound/index.html

CALENDAR

July 15 CA
Land Use & Environmental Planning in the Era of Climate Change, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or website: http://extension.ucdavis.edu

July 15-16 WA
Construction Site Erosion & Pollution Control Course, Shoreline. For info: Conf. website: www.engr.washington.edu/epp/cee/cec.html

July 15-17 UT
Western States Water Council 160th Council Meeting, Park City. For info: Cheryl Redding, WSWC, 801/ 561-5300, email: credding@wswc.state.ut.us or website: www.westgov.org/wswc/meetings.html

July 16 OR
Oregon Water & Wastewater Infrastructure Finance Workshop, Roseburg. Douglas Co. Cthouse. Sponsored by Rural Community Assist. Corp. For info: Jake Salcone, RCAC, 503/ 228-7402, email: jsalcone@rcac.org or www.rcac,org

July 19-22 Canada/BC
NW Aquatic & Marine Educators' Conference 2009: Urban Waters, Vancouver, BC. Vancouver Aquarium Science Centre. For info: Vancouver Aquarium website: www.vanaqua.org/education/name/index.html

July 20-24 CA
3rd National Conference on Ecosystem Restoration, Los Angeles. Westin Bonaventure. Sponsors include USGS, US Army Corps, NRCS & U. of Florida. For info: Beth Miller-Tipton, UF, 352/393-5930, email: bmt@ufl.edu or website: www.conference.ifas.ufl.edu/NCER2009/

July 21 OR
Oregon Water & Wastewater Infrastructure Finance Workshop, Mt. Vernon. Mt. Vernon Community Hall. Sponsored by Rural Community Assist. Corp.. For info: Jake Salcone, RCAC, 503/ 228-7402, email: jsalcone@rcac.org or www.rcac,org

July 22 WA
Model Toxics Control Act Seminar, Seattle. Washington State Trade & Convention Center. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

July 22 WA
Climate Policy, Carbon Credits & Business Risk Training, Seattle. NWETC Hdqtrs, 650 South Orcas St.. For info: NWETC, 206/ 762-1976 or website: http://nwetc.org

July 22 UT
Water, Irrigation & the Environment Conference, Park City. Canyons Grand Summit Hotel. Sponsored by Irrigation Association. For info: Kathy Bradley, IA, 703/ 536-7080, email: kathy@irrigation.org or website: www.irrigation.org/

July 22-23 MT
Water & Wastewater Training Course, Havre. MSU-Northern. Sponsored by Montana Environmental Training Ctr. For info: Barbara Coffman, METC, 406/ 781-2298 or website: www.msun.edu/grants/metc/training.asp

July 22-24 FL
Florida Environmental Permitting Summer School, Marco Island. Marco Island Marriott Resort. For info: Conf. website: www.floridaenet.com/summerschool/home.htm

July 22-24 CO
Colorado Water Workshop, Crested Butte. Lodge at Mountaineer Square. Sponsored by Western State College. For info: Dr. Jerry Frank, WSC, 970/ 943-3162, email: jfrank@western.edu or website: www.western.edu/water/

July 23-25 CA
Rocky Mt. Mineral Law Foundation 55th Annual Institute, San Francisco. Grand Hyatt Union Square. For info: Mark Holland, RMMLF, 303/ 321-8100 x106, mholland@rmmlf.org or website: www.rmmlf.org

July 24 IL
Changes in Environmental Law: Recent & Emerging Environmental Regulations Seminar, Chicago. Marriott Downtown. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

July 27-28 CA
The Tuolumne River: Ecology, Resource Management & Whitewater, Groveland. Tuolumne River. For info: UC Davis Extension, 800/ 752-0881 or website: http://extension.ucdavis.edu

July 27-28 AZ
NAU Watershed Research & Education Program - 2009 Policy Workshop, Flagstaff. Post Workshop Rafting Trip 7/28-7/29. For info: Joseph Shannon, WREP Director, email: Joseph.Shannon@nau.edu or website: www.watershed.nau.edu

July 28-30 OR
Wetlands Delineation, Regulation & Restoration Training, Troutdale. McMenamins Edgefield Theatre, 2126 SW Halsey St. For info: NWETC, 206/ 762-1976 or website: http://nwetc.org

July 29 OR
Klamath Basin Climate Futures Forum: Community Systems, Klamath Falls. Favell Museum. Sponsored by Climate Leadership Initiative (U of O) & National Ctr. for Conservation Science & Policy. For info: Stacy Vynne, UO, 541/ 346-0467, email: svynne@uoregon.edu or website: www.klamathriver.org/

July 29-31 NM
Western Water Seminar, Santa Ana Pueblo. Tamaya Resort. Sponsored by National Water Resources Assn. For info: NWRA, 703/ 524-1544, email: nwra@nwra.org, website: www.nwra.org

July 30 OR
Environmental Law Changes in 2009 and Beyond: A Look at Recent and Emerging Environmental Regulations and Their Impact, Portland. World Trade Center. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

July 30 D.C.
Environmental Information Revolution Conference, Washington. For info: Conf. website: www.ForumOneo3.com

July 31 CA
Klamath Basin Climate Futures Forum: Community Systems, Redding. Redding Public Library. Sponsored by Climate Leadership Initiative (U of O) & National Ctr. for Conservation Science & Policy. For info: Stacy Vynne, UO, 541/ 346-0467, email: svynne@uoregon.edu or website: www.klamathriver.org/

August 2-4 TX
5th Annual Water Issues & Technologies: Process Water, Wastewater & Desalinization Course, College Station. Hilton Hotel. For info: Food Protein R&D Center, Texas A&M website: http://foodprotein.tamu.edu/separations/index.php

August 6-7 NM
New Mexico Water Law Conference, Santa Fe. Eldorado Hotel. For info: CLE International, 800/ 873-7130 or website: www.cle.com

August 10-13 IL
Visions of a Sustainable Mississippi River: Merging Ecological, Economic & Cultural Values Conference, Collinsville. Sponsored by The National Great Rivers Research & Education Ctr.. For info: Conference website: www.conferences.uiuc.edu/mississippiriver/

August 10-14 UT
Geomorphology & Sediment Transport in Channel Design: Part II Short Course, Logan. Utah State University. For info: Traci Maughan, USU, 801/ 721-6246, email: traci.maughan@usu.edu or website: www.cnr.usu.edu/streamrestoration/

August 10-14 TX
Environmental Measurement Symposium, San Antonio. Hyatt Regency. For info: National Environmental Monitoring Conference website: http://www.nemc.us

August 10-14 Canada/BC
Water Engineering for a Sustainable Environment Conference, Vancouver, BC. Hyatt Regency. RE: 19th Canadian Hydrotechnical Conference. For info: Conf. website: http://content.asce.org/conferences/iahr09/

August 11 NM
New Mexico Water Research Symposium, Socorro. New Mexico Tech - Macey Ctr. Sponsored by New Mexico Water Resources Research Institute. For info: Peggy Risner, WRRI, 575/ 646-4337 or website: http://wrri.nmsu.edu/

August 12 NV
Mountain Snowpack in Western US: Water Supply in a Changing Climate, Reno. Peppermill Hotel. Sponsored by Nevada Water Resources Association: Northern Nevada NWRA Dinner Forum. For info: NVWRA, 775/ 473-5473 or website: www.nvwra.org/

CALENDAR

August 13-14 FL
Gulf Coast Water Quality & Habitat Seminar, Tampa. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

August 13-14 AZ
Arizona Water Law Seminar, Phoenix. Arizona Biltmore Resort. For info: CLE International, 800/ 873-7130 or website: www.cle.com

August 14 HI
NEPA & Hawai'i EIS Seminar, Honolulu. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

August 16-20 CA
8th Annual StormCon North American Surface Water Quality Conference & Exposition, Anaheim. For info: Steve DiGiorgi, StormCon, 805/ 682-1300 or website: www.StormCon.com

August 17-21 CA
Geomophic & Ecological Fundamentals for River & Stream Restoration Course, Truckee. Sagehen Creek Field Station. For info: Course website: http://sagehen.ucnrs.org/courses/geomorph.htm

August 19-20 CA
Understanding Riparian Processes, Davis. Da Vinci Bldg. For info: UC Davis Extension, 800/ 752-0881 or website: http://extension.ucdavis.edu

August 19-21 CO
Colorado Water Congress Summer Convention, Steamboat Springs. Sheraton Steamboat Resort & Conference Center. For info: CWC, 303/ 837-0812, email: cwc@cowatercongress.org or website: www.cowatercongress.org/

August 24-25 CA
The Tuolumne River: Ecology, Resource Management & Whitewater, Groveland. Tuolumne River. For info: UC Davis Extension, 800/ 752-0881 or website: http://extension.ucdavis.edu

August 24-26 WA
NARF/WSWC Symposium on Indian Water Rights Settlements, Ferndale. Silver Reef Hotel. For info: Cheryl Redding, WSWC, 801/ 561-5300, email: credding@wswc.state.ut.us or website: www.westgov.org/wswc/meetings.html

August 26-27 CA
Developing & Writing Effective CEQA Documents, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or website: http://extension.ucdavis.edu

August 27-28 CO
Eminent Domain Seminar, Denver. For info: CLE International, 800/ 873-7130 or website: www.cle.com

August 27-28 NV
Western Water Law 16th Annual Conference, Las Vegas. Mandalay Bay Hotel. For info: CLE International, 800/ 873-7130 or website: www.cle.com

August 30-Sept. 2 AZ
Managing Hydrologic Extremes - 2009 Annual Symposium, Scottsdale. Westin Kierland Resort. Sponsored by Arizona Hydrological Society & American Institute of Hydrology. For info: AHS website: www.azhydrosoc.org

September 2-3 CA
Interest-Based Negotiation for Planning & Resource Management, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or website: http://extension.ucdavis.edu

September 10 CA
Environmental Initiatives for 2009 & Beyond Seminar, San Francisco. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

September 10 CA
Wetlands Regulation & Mitigation Seminar, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or website: http://extension.ucdavis.edu

September 10-11 CO
Institute on Energy Development: Access, Siting, Permitting & Delivery on Public Lands, Denver. Grand Hyatt Downtown. Sponsored by Rocky Mt. Mineral Law Foundation. For info: Mark Holland, RMMLF, 303/ 321-8100 x106, mholland@rmmlf.org or website: www.rmmlf.org

September 10-11 CA
Wind Power in California Seminar, Los Angeles. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

September 11 CA
California Environmental Quality Act Seminar, Santa Monica. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

September 11 WA
Environmental Initiatives for 2009 & Beyond Seminar, Seattle. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

September 11 OR
Advocating for an Environment of Equality: Legal & Ethical Duties in a Changing Climate Symposium, Eugene. U of O School of Law. Sponsors: Journal of Environmental Law & Litigation and Bowerman Ctr for Environmental Law. For info: ENR, 541/ 346-1395 or website: www.law.uoregon.edu/org/jell/equality.php

September 13-16 WA
24th WateReuse Symposium, Seattle. Sheraton Seattle Hotel. Sponsored by WateReuse Association. For info: WRA website: www.watereuse.org/

September 13-17 UT
Water/Energy Sustainability Symposium, Salt Lake City. Hilton City Center. Sponsored by Ground Water Protection Council. For info: GWPC website: www.gwpc.org

September 14-15 TX
Texas Water Law Conference, Austin. Omni Downtown. For info: CLE International, 800/ 873-7130 or website: www.cle.com

September 14-16 OR
Clean Pacific Conference & Exposition, Portland. For info: Clean Pacific website: www.cleanpacific.org.

September 14-16 MO
From Dust Bowl to Mud Bowl: Sedimentation, Conservation & the Future of Reservoirs Conference, Kansas City. Westin Crown Center. For info: Conf. website: http://www.swcs.org/en/conferences/

September 14-16 NC
2nd International Conference on Forests & Water in a Changing Environment, Raleigh. For info: Conf. website: www.sgcp.ncsu.edu

September 15-16 OR
2009 Ocean Renewable Energy Conference IV, Seaside. Seaside Convention Ctr. Sponsored by Oregon Wave Energy Trust. For info: Conf. website: www.oregonwave.org

September 17-18 WA
The Mighty Columbia Seminar, Seattle. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

September 17-18 CA
ACWA's 2009 Water Law Workshop, Costa Mesa. Sponsored by Assoc. of California Water Agencies. For info: ACWA, 916/ 441-4545 or website: www.acwa.com

September 17-18 CA
Developing Wind Power Projects in California, Marina del Rey. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

September 18 WA
Ecosystem Goods & Service Valuation Course, Seattle. NW Enviromental Training Hdqtrs. For info: Course website: http://nwetc.org/

September 19-20 CO
Sustainable Living Fair, Fort Collins. For info: Fair website: www.SustainableLivingFair.org

September 20 OR
Advanced Water Rights Bootcamp, Klamath Falls. Sponsored by Water for Life and Schroeder Law. For info: Helen Moore, WFL, 375-6003, email: helen.moore@waterforlife.net or website: www.waterforlife.net

September 21-22 CA
California Environmental Quality Act Seminar, San Francisco. For info: CLE International, 800/ 873-7130 or website: www.cle.com

September 21-22 WA
Resolving Interstate Water Conflicts Seminar, Spokane. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

September 22 NV
Water Crisis in California: Challenges Faced by MWD to Adapt to Long-Term Water Curtailments, Las Vegas. Golden Nugget Hotel. Sponsored by Nevada Water Resources Association: Southern Nevada NWRA Dinner Forum+I82. For info: NVWRA, 775/ 473-5473 or website: www.nvwra.org/

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CALENDAR

(continued from previous page)

September 23-26 MD
Environment, Energy & Resources Law Summit: 17th ABA Section Fall Meeting, Baltimore. Baltimore Marriott Waterfront. For info: ABA website: www.abanet.org/environ/fallmeet/2009/

September 24 OR
Wind Power Seminar, Portland. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

September 24 OR
Climate Change: Positioning Your Business, Portland. Sponsored by Northwest Environmental Business Counsil. For info: NEBC, 503/ 227-6361 or website: www.nebc.org

September 24-25 CA
California Environmental Quality Act Seminar, San Diego. For info: CLE International, 800/ 873-7130 or website: www.cle.com

September 24-25 TX
Conservation Easements Seminar, Austin. For info: CLE International, 800/ 873-7130 or website: www.cle.com

September 25 WA
Washington Water Trust 4th Annual Benefit Celebration, Seattle. For info: Susan Adams, WA Water Trust, 206/ 675-1585 x101, email: susan@washingtonwatertrust.org or website: www.washingtonwatertrust.org

September 25 CA
California Environmental Quality Act Seminar, Santa Monica. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

September 28-30 CO
Watersheds, Water, and Land Use Planning Symposium, Denver. Red Lion Hotel Central. Western States Water Council. For info: Cheryl Redding, WSWC, 801/ 561-5300, email: credding@wswc.state.ut.us or website: www.westgov.org/wswc/meetings.html

September 29-Oct. 1 CA
9th Biennial State of the Estuary Conference, Oakland. Downtown Oakland Marriott. Ecological Health of the San Francisco Bay-Delta Estuary. For info: EPA website: www.epa.gov/region09/water/

September 30-Oct. 2 MT
Waters That Cross Divides: Joint Meeting of AWRA MT Section & UM Center for Riverine Science, Missoula. Holiday Inn Parkside. For info: Conf. website: http://awra.org/state/montana/events/conference.htm

October 1-2 MT
Montana Water Law Seminar: 9th Annual, Helena. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

October 1-2 MT
River Center Conference/Montana AWRA, Missoula. Sponsored by U of M River Center & MT AWRA. For info: http://water.montana..edu/awraabstracts/

October 4-8 FL
2009 International Water Conference, Orlando. Hilton in the Walt Disney World Resort. For info: Conf. website: www.eswp.com/water/

October 6 WA
Environmental Crimes & Penalties Seminar, Seattle. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

October 7 WA
Shoreline Development & Permitting Seminar, Seattle. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

October 7 OR
GoGreen '09 Conference, Portland. The Gerding Theatre, 128 NW 11th Ave. Sponsored by Pacific Power. For info: Conf. website: www.gogreenpdx.com

October 9 OR
Advanced Water Rights Bootcamp, La Grande. Sponsored by Water for Life and Schroeder Law. For info: Helen Moore, WFL, 375-6003, website: www.waterforlife.net