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

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IS ROMAINE SAFE TO EAT?

AGRICULTURAL WATER USE & YOUR SALAD

by Robert Glennon, University of Arizona College of Law (Tucson, AZ)

Introduction

We were delighted as our 12-year-old grandson ordered a Caesar salad when we were having dinner at a pizza place. Vegetables! However, the dinner was December 22, 2019, shortly after CDC and FDA issued yet another warning against eating romaine from Salinas, California. I asked the server where the romaine came from. He didn't know but went in the back to inquire. He returned and said, "Salinas."

Since 2017, seven outbreaks involving romaine lettuce have sickened hundreds and killed five. Those are the reported numbers. No one knows how many other people got sick. In six outbreaks the lettuce came from California's Salinas Valley region; in the seventh from the Yuma, Arizona region, which includes California's Imperial Valley. Repeated FDA and CDC warnings against eating romaine have left consumers adrift in a sea of confusing announcements, advisories, and recalls. Is romaine safe to eat?

Between November and March, almost all of the country's romaine, iceberg, red leaf, green leaf, arugula, broccoli, and cauliflower (collectively known as leafy greens) comes from the Yuma region. During the rest of the year, leafy greens are grown in the Salinas region. The two states produce 98 percent of the country's lettuce. Anyone who eats salad or likes lettuce on their Big Macs or tacos is personally impacted by how lettuce is grown and processed.

Most consumers will be surprised to learn what happens to their lettuce before they bring it home from the supermarket. Between lettuce farms and the ultimate consumer is a remarkable system of steps taken by farmers and processors to protect the safety of leafy greens. If an outbreak does occur, federal and state regulators employ an elaborate network of laboratories to identify the source of the contamination.

As a consequence, the chances of getting sick from eating leafy greens in America are minuscule. To put the risk in perspective, consider that California and Arizona farmers produce an estimated 130 million servings of leafy greens *every day of the year*. Consumers should take comfort in knowing that farmers and processors, in response to the recent outbreaks, have implemented even more stringent standards. That said, there are inherent risks in eating raw food that is grown outdoors. The system is not and never will be perfect.

"I Wouldn't Wish This on My Worst Enemy"

On March 20, 2018, Louise Fraser, a 66-year-old woman from Flemington, New Jersey, ate a Fuji Apple Chicken Salad at a Panera Restaurant in Raritan, New Jersey. Over the next few days, she experienced severe stomach cramps, nausea, vomiting, headache, and

Romaine

Outbreak in Yuma Region

Contaminated Water

Irrigation Water

LGMAs

Food Safety

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a fever. When her diarrhea turned bloody, she went to the emergency room at Hunterdon Medical Center. On March 25th, the medical team admitted her and began a battery of tests. Laboratory tests confirmed she was infected with *E. coli* O157:H7, which caused hemolytic uremic syndrome, a condition that can lead to kidney failure and death. It took 13 days of medical supervision and three blood transfusions to save her life. She calls the infection "the worst experience of my life. I wouldn't wish this on my worst enemy."

Louise became ill from an outbreak of *E. coli* O157:H7 traced to romaine grown in the Yuma region. The outbreak killed five people, hospitalized 96, and sickened 240 in 36 states, before ending in June 2018, making it the largest outbreak of this particularly nasty strain of E. coli since 2006.

Infectious Diseases and Food

Guide books warn travelers to third-world countries not to drink the water or eat raw vegetables for good reason. Due to the lack of adequate sanitation, the water is often contaminated with human or animal fecal matter, and farmers often use that water to grow vegetables.

Pathogens, including bacteria, fungi, and viruses, cause infectious diseases. *E. coli* O157:H7 most often occurs in the intestinal tracts of farmyard animals, especially cattle, sheep, pigs, and poultry. The animals suffer no symptoms, but they serve as carriers that shed bacteria in their feces, which can end up in the water supply. People can get sick from drinking contaminated water, but most *E. coli* infections come from eating food irrigated with the contaminated water.

Dozens of *E. coli* outbreaks associated with leafy greens have occurred since 1995. The worst one, in 2006, involved baby spinach that came from an organic farm in California's Salinas Valley. That outbreak prompted the California and Arizona lettuce industries, in 2007, to enter Leafy Greens Marketing Agreements (LGMAs), which require members to comply with science-based guidelines for producing and harvesting leafy greens.

In 2011, Congress passed the Food Safety Modernization Act (FSMA), which adopted the best practices of the LGMAs. The Act strengthened the food safety system by broadening FDA's authority and requiring FDA to promulgate science-based, minimum standards for the safe production and harvesting of fruits and vegetables.

Growing Lettuce: Food-Safety Challenges

Lettuce farmers face food-safety challenges greater than other food producers. Pasteurizing, irradiating or cooking kills pathogens in most foods. But there is no "kill step" for lettuce, which is grown outdoors, not in a controlled environment like a factory or a greenhouse, and eaten raw. Paul Brierley, head of the Yuma Center of Excellence for Desert Agriculture, describes farmers' struggle against *E. coli* O157:H7 as "fighting an invisible, tasteless, odorless enemy."

I first took students in my class, *The Colorado River*, on a field trip to Yuma in 2016. We met with a prominent farmer at his headquarters to learn about "food safety." If a flock of geese fly over the farmer's field, or a dog or deer wanders in, they may leave behind droppings with *E.coli* and other dangerous microbials. To monitor such intrusions, he keeps meticulous records of every occurrence and the response by date, time, and location. On his large conference room table, stacks of binders chronicled food safety steps from preparing the fields each season through planting and harvesting.

Food safety, whether in Salinas or Yuma, starts with a pre-harvest inspection of fields and fertilizers. As anyone with a backyard garden knows, manure helps things to grow. But it's risky to use around vegetables. Before harvesting, food safety auditors (employed by shippers not growers) review a farmer's policies and records, conduct a visual inspection of fields for signs of animal intrusion, and verify the practices are in place. The last step before harvesting involves taking samples from plants and sending them to a lab for testing. The usual practice is N60 or 60 samples in a five-acre plot.

Harvesting crews work for packing companies and follow elaborate food safety practices. Outside each porta-potty is hand sanitizer. Pickers wear gloves, masks and gowns, depending on whether lettuce is to be sold "naked" or processed. Workers cannot wear jewelry other than wedding bands or carry anything in their upper pockets. Every picker's tools are numbered.

When crews harvest romaine for processing, they core and clean each head and place them bottom side up in boxes. They spray the boxes with water mixed with sodium hypochlorite and non-iodized salt to wash off latex, a naturally-occurring and harmless white-milky sap that oozes from the cuts. The spray helps to sanitize the cut surface, close the plants' wounds, and prevent browning.

Romaine

Figure 1: Yuma Romaine Field - John Boelts in foreground

From Farm to Consumer

Processing Plant

Harvested lettuce intended for processing is first sent to refrigerated warehouses, and vacuum cooled to 33-38 degrees F. At the processing plant, workers chop and shred the lettuce, which is sorted into different wash lines, for example, romaine in one and spinach in another. It's usually triple-washed in flumes, each time with fresh water. Automated controllers inject sanitizer into the flumes for the first and second washes. The sanitizer prevents bacteria, such as *E. coli* O157:H7, that washes off a leaf from cross-contaminating other leaves during the washing cycle. The third wash involves a potable water rinse.

The washed lettuce is dried in large stainless-steel barrels using centrifugal force. Imagine a salad spinner that holds 300 pounds of lettuce. A machine then lifts the barrels and dumps the lettuce into a hopper, which feeds a conveyor belt to a scale, shaped like a cone with a bunch of buckets around it. A computer controls the buckets to measure the correct weight for each bag, depending on the customer's needs.

Figure 2: Heinzen SD300OS Dryer

Unique Code

Workers back-flush the bags with nitrogen to control the amount of oxygen in the bag. Processors use modified atmosphere packaging. I think of lettuce bags at my local Safeway as "plastic bags," but processors regard them as oxygen transmission rate (OTR) film. One processor's food safety director (who asked me not to use his name, so we'll call him John Doe) explains that "the OTR film is specific for each type of lettuce and allows for an exchange of gases between the inside of the bag and the outside." It allows just enough oxygen to induce the lettuce to go dormant. The lettuce remains in that state as it travels around the country until the bag is opened at a restaurant or a home.

Each bag is vacuum-sealed, run through a metal detector and hand-packed into boxes. At some processors, an inkjet printer stamps a label on every bag and box. Each label, explains Doe, "has a unique code with the production date, plant code, pack line production shift, the stock-keeping-unit (SKU) code, and a timestamp down to the second." Workers place the boxes on pallets and load them onto refrigerated trucks.

Processors typically clean the entire plant every day. "Sanitation for us is the most important part of the day," says Doe. "A crew of 20 cleans every belt, piece of cutting equipment, floors, drains, walls, everything. The process starts with a dry pick-up then a rinse, and the application of chlorinated alkaline soap. Workers foam and scrub the areas that need it, and finish up with a final sanitizer, either peracetic acid or quaternary ammonia. That's done every night." On weekends, he explains, they shut the plant down for "a deep clean period, from Sunday into Monday, when we do preventative maintenance that we can't get done during the week."

Romaine

Weak Link

Shipper-processors sell to restaurant and grocery chains and foodservice companies, such as Sysco, which delivers to schools and hospitals. In a matter of hours or days, lettuce arrives at grocery stores around the country. Ironically, consumers may be the weakest link in the produce food safety system. What do you put on the seat in your grocery cart? Until recently, I put produce. Now I'm haunted by the image of the last customer's dog, toddler, or purse. Once home, many consumers put lettuce into the sink or on a counter — two places loaded with bacteria.

A Mystery Fit for CSI

Cluster

In early April 2018, the New Jersey health department contacted CDC about a cluster of *E. coli* O157:H7 infections. Many of the sick people had eaten salads at restaurants before becoming ill. In subsequent days, according to Dr. Laura Gieraltowski, an epidemiologist who heads CDC's Foodborne Outbreak Response Team, "illnesses with the same DNA fingerprint were uploaded to CDC's PulseNet database — indicating a potential multistate outbreak."

Data Networks

PulseNet is a national network of 83 public health and food regulatory laboratories that submit samples of harmful bacteria from infected patients. FDA also employs another network, GenomeTrakr, which sequences the genomes of foodborne pathogens and uploads data to a publicly-accessible database. The two systems function symbiotically, one generating data about patients, the other about food.

Traceback

Like a police detective looking at pins on a board in a murder investigation, Dr. Gieraltowski's team looks for points of convergence from clusters of illness with a common point of exposure, such as a restaurant. FDA's network of specialists tries to figure out the origin of the contaminated food. Their approach is to move backward from sick people through the food distribution system to the original supplier. This process, called a traceback, was exceedingly challenging in the April 2018 romaine outbreak.

Romaine is a perishable commodity with a short shelf life. By the time people get sick, physicians and clinics report their cases, laboratories test the specimens and fingerprint the pathogen, and health officials interview the sick people, the shelf life is over. Based on interviews with patients, clinical laboratory results, and DNA fingerprinting, FDA announced on April 13, 2018, that "the likely source" was farms in the Yuma growing region.

FDA Investigation

In June 2018, FDA investigators inspected farms, interviewed farmers and processors, and contacted cattle feeding operations and water districts. FDA teams were searching for the root cause of the outbreak.

Genome Sequencing

CDC's National Antimicrobial Resistance Monitoring System (NARMS) laboratory used Whole Genome Sequencing (WGS) to determine that irrigation water from a Wellton-Mohawk Irrigation and Drainage District canal shared the same rare molecular fingerprint as the O157:H7 that infected the sick people. FDA found no other evidence of the presence of O157:H7.

To pinpoint precisely which farms and fields provided the romaine, investigators would need samples to test. However, by the time the FDA team arrived in Yuma, the romaine season had ended, the farm equipment cleaned and stored for the next season, and the processing plants closed down. There was no romaine to test. FDA did identify one farm that sent whole-head romaine to an Alaska prison where eight inmates got sick. In that case, the farm was the sole source supplier, but it did not cause the nationwide outbreak.

On November 1, 2018, FDA's Environmental Assessment concluded the romaine came from the Yuma region. The traceback identified 36 fields on 23 farms that supplied romaine "that was *potentially* contaminated." (Emphasis added). As seen on the Traceback Diagram (next page), multiple farms sent romaine to each processor, where the product became commingled as it was washed, dried, packed, and boxed. Distributors, in turn, received romaine from more than one processor. The commingling, FDA admitted, "made it impossible to definitively determine which farm or farms identified in the traceback supplied romaine lettuce contaminated with the *E. coli* O157:H7 outbreak strain." That's one reason why, on the Traceback Diagram, FDA redacted the names.

Commingling

Irrigation Canal Water Plus CAFO

FDA's assessment of the Yuma outbreak concluded that "the most likely way" romaine became contaminated was from the Wellton-Mohawk irrigation canal water because that's the only place FDA found *E. coli* O157:H7. How did *E. coli* get into the water? FDA suspected the source was an adjacent Concentrated Animal Feeding Operation (CAFO). The Five Rivers Cattle, LLC feedyard in Wellton, Arizona, about 30 miles east of Yuma, can house more than 100,000 head of cattle at a time.

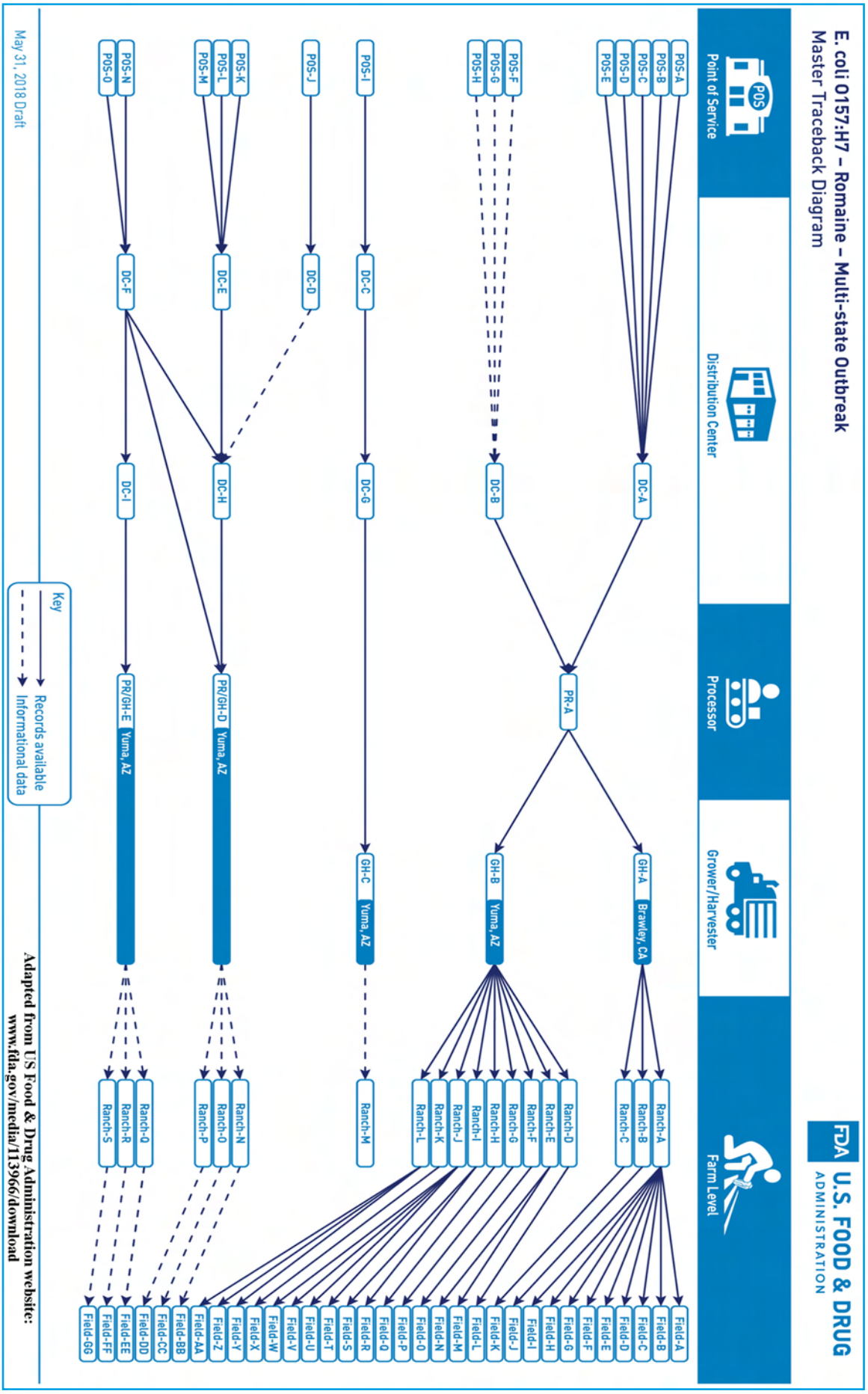

Figure 3: FDA Traceback Diagram

Figure 4: Five Rivers Cattle, LLC, feedyard & canal

Romaine

CAFO Proximity

Domestic Animals

Canal Sediment

Pesticide Contamination

Feedlot

Late Season

Cattle Grazing Potential

I asked Bill Marler, a leading food safety attorney, what he thinks caused the outbreak. Marler said the answer is obvious if you look at an aerial photo of the CAFO close to the canal. "It doesn't take a rocket scientist to figure out the likely source of O157 in the Yuma valley. It's cow shit." He is hardly alone in reaching this conclusion, though several people expressed their views off-the-record. Manure is a vexing problem for feedlots: each steer can produce 65 pounds per day, most of which is water.

Nagging doubts remain. For example, if canal water contaminated romaine, why did it not also contaminate baby leaf, spinach or spring mix, which are irrigated with the same water. If canal water did *not* contaminate romaine leaves, is there another explanation? FDA ruled out wild animals because O157:H7 is an antibiotic-resistant strain, suggesting it came from the scat of domestic animals, who were inoculated or given feed with antibiotics in it.

FDA inspectors sampled soil, wild and domesticated animal scat, biological fertilizers, surface and subsurface water, irrigation water from the Colorado River, and sediment from irrigation canals. In the end, only three samples from the Wellton-Mohawk canal tested positive.

FDA also considered unusual weather patterns, including a hard freeze in February 2018 and strong winds in March 2018. The cold temperatures blistered romaine leaves, making the crop more susceptible to microbial contamination. High winds *possibly* carried contaminated soil particles and romaine — with creased, upturned leaves — may be more vulnerable to trapping airborne particles. Aerial applications of pesticides could have caused the problem if the water used to dilute the chemicals was contaminated. Perhaps a pesticide applicator drew water from the irrigation canal and then sprayed fields with contaminated water.

FDA acknowledged these other theories but found no evidence to support them. The bottom line is that Wellton-Mohawk canal water tested positive for *E. coli* O157:H7, which commonly occurs in cattle, and a giant feedlot was located next to that canal. The rest is inference.

Outbreaks in November and December 2019 caused by lettuce from Salinas spawned another plausible explanation for the root cause, which focuses on timing. Six of the seven outbreaks since 2017 occurred toward the end of the romaine season, whether in California or Arizona. When farmers rotate their crops, they often spread manure or composting materials in advance of planting — at a time when romaine is still in the ground in neighboring farms. Perhaps wind or water spread *E. coli* to the romaine fields.

A May 2020 FDA report on the November and December 2019 outbreaks concluded that "a potential contributing factor [was] the proximity of cattle to the produce fields." The report was not referring to a massive CAFO but cattle grazing on public land on nearby hills — as far away as two miles from the romaine fields. This should send a shudder through ranchers and farmers across the West because the bucolic image of cattle grazing on a hillside is often visible from low-lying farms.

Romaine

Changes Made

Testing Water

Standardized Tools

Blockchain

Real-Time

Digital System

Labels Scan

Recordkeeping Rule

Biosensors

"We Don't Know Exactly What to Fix."

In April 2018, before FDA investigators arrived in Yuma, the leafy greens industry established task forces to examine current practices and propose reforms. For example, harvesters now clean and sanitize the equipment daily. Farmers and processors changed many practices, hoping that one or a combination would have an impact. "But we just don't know," explained John Doe, the food safety director. "And that's the really frustrating thing for everybody. Our customers and really the entire U.S. public wants us to fix it, fix it, fix it. And we don't know exactly what to fix." Nonetheless, one processor decided to stop buying from farms within a mile of a CAFO. That processor also changed its pre-harvest sampling methodology from sampling five-acre plots to sampling every acre.

In 2019, the Leafy Greens Agreements began to require growers to treat all surface water used within 21 days of harvest. (Before that, sunlight exposes vegetables to enough UV radiation to kill almost all dangerous pathogens.) Dr. Jennifer McEntire, vice president of food safety for United Fresh Produce, a trade association, describes this change as "a fundamental shift" from testing water on an annual basis to "proactively treating water during the period closest to harvest."

"Food Traceability @ the Speed of Thought"

On November 1, 2018, FDA then-Commissioner Scott Gottlieb called for the industry to standardize record-keeping and to use labels or other tools to improve traceability. Food safety records on many farms are hand-written notes. Some bags and boxes have labels that identify the variety, grower, field, and harvest date; others don't. The lack of a uniform standard creates problems for fast traceback. United Fresh Produce's Jennifer McEntire supports improved labels. "If we have true traceability, we could pinpoint exactly what the problematic product was, who produced it, and when. We wouldn't need a broad advisory." Labels on romaine now include the growing region (Salinas or Yuma), which enabled FDA in November 2019 to limit its consumer warning to romaine from Salinas.

In December 2018, Frank Yiannas, a renowned food safety expert at Walmart, became FDA Deputy Commissioner for Food Policy and Response. At Walmart, Yiannas used blockchain, the best-known type of digital ledger technology, to track mangos from two farms in Mexico to two stores in the United States. In a pilot project, each participant in the supply chain put data on the blockchain, which linked the blocks of data and reduced traceback time to 2.2 seconds. Real-time traceability is the holy grail to Yiannas, who refers to it as "food traceability @ the speed of thought."

In April 2019, Yiannas and FDA Acting Commissioner, Ned Sharpless, M.D., announced that FDA would enter a New Era of Smarter Food Safety, anchored by moving from largely paper-based data to a digital system, such as FedEx, Uber, and Amazon use to track the movement of trucks, ride sharing and delivery of packaged goods. The new era arrived in July 2020 with FDA's Blueprint for Smarter Food Safety, which will encourage and incentivize the leafy greens industry to adopt tech-enabled traceability measures. The labels on bags and boxes of lettuce may soon have data stored on the cloud or blockchain.

But labels can improve traceability only if data gets saved. No matter how remarkable digital ledger technology is, it will promote traceability only if the shipping/receiving clerk at a restaurant or a supermarket scans the labels when the boxes arrive. Yuma farmer John Boelts notes that traceability breaks down in "the last mile to the consumer," when supermarket workers or home cooks throw away the bags and boxes. At a public meeting on the New Era that FDA hosted in October 2019, Yiannas acknowledged this problem: "What matters most is what people do." The behavior of everyone in the food industry, from farmers to servers, will ultimately determine the safety of our food.

In September 2020, FDA announced a proposed rule regulating recordkeeping that would require the leafy greens industry to keep records with Critical Tracking Events and Key Data Elements. Prompt traceability requires three conditions: uniform labels, interoperable data collection and storage, and unanimous participation by growers, processors, shippers, and buyers. Although this rule has many exemptions, it would go a long way toward creating those conditions.

Uniform labels and effective digital storage could dramatically reduce traceback times. Better data will not prevent the initial consumers of contaminated produce from becoming sick, but it could limit the scale of an outbreak by quickly determining the source of the contamination. Other current research is directed at prevention by achieving real-time detection of pathogens before the lettuce ever enters the food chain. Paul Brierley, head of the Yuma Center of Excellence for Desert Agriculture, has a research project involving biosensors, which would enable farmers to detect pathogens in water or in the processing plant. Brierley concedes: "We have a long way to go."

Romaine

In October and November 2020, FDA announced an investigation of three new outbreaks of *E. coli* O157:H7. Its traceback investigations were unable to determine a common source of the outbreaks.

Choices

What Should Consumers Do?

In the meantime, consumers face hard choices. They certainly should not stop eating romaine and other leafy greens. Nutritionists agree that we should eat more fruit and vegetables.

Consumers may choose to wash all lettuce, even the bagged and boxed mixes. Despite the elaborate precautions taken by processors, contaminated romaine made its way into the distribution system. In November 2018, FDA warned that washing "may reduce but will not eliminate [*E. coli* O157:H7] from romaine lettuce." Despite this warning, I don't plan to start washing lettuce that has already been triple washed.

Consumers have other choices, including buying organic produce. But it is worth remembering that the 2006 *E. coli* O157:H7 outbreak involved spinach from an organic farm. Other consumers may prefer to buy greenhouse-grown lettuce, which has not been implicated in recent outbreaks. But lettuce grown indoors is a niche market, not one capable of producing tens of millions of servings a day. Still others may want to buy from farmers markets. But it is unclear whether that lettuce is safer than processed lettuce from California or Arizona. Plus, few farmers markets are open from late fall through winter, which is the Yuma season. If you want lettuce during those five months, it's going to come from Yuma.

Ongoing Risk

When bad things happen, Americans expect that someone or something is to blame. We want everything to be perfect, whether it's a medical procedure, a car repair, or the food we eat. However, no amount of testing and treating will completely eliminate the risk of getting sick from eating raw something that is grown outdoors.

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US/Mexico

US/MEXICO WATER AGREEMENT

THE RIO GRANDE & MINUTE 325

by Jayne Harkins
US Commissioner of the International Boundary and Water Commission, United States Section

Introduction

IBWC Responsibility

Established in 1889, the International Boundary and Water Commission (IBWC) has responsibility for applying the boundary and water treaties between the United States and Mexico and settling differences that may arise in their application. The IBWC is an international body composed of the United States Section and the Mexican Section, each headed by an Engineer-Commissioner appointed by his/her respective president. Each Section is administered independently of the other. The United States Section of the International Boundary and Water Commission (US/IBWC) is a federal government agency and is headquartered in El Paso, Texas. The US/IBWC operates under the foreign policy guidance of the US Department of State. The Mexican Section is under the administrative supervision of the Mexican Ministry of Foreign Affairs and is headquartered in Ciudad Juarez, Chihuahua, Mexico.

Rio Grande Division

The Rio Grande supplies water to many communities and agricultural areas in the United States and Mexico from its headwaters to the Gulf of Mexico. There are several international agreements that regulate the division of waters of the Rio Grande between the United States and Mexico. Recently, the IBWC signed an international agreement — known as Minute 325 — to end the water delivery cycle without a deficit to the benefit of the United States and Mexico.

Rio Grande Water Treaties

Convention of 1906

There are two treaties that deal with international delivery of waters of the Rio Grande. The Convention of 1906 deals with the distribution of water from the United States to Mexico at El Paso, Texas and Ciudad Juarez, Chihuahua. The US delivers 60,000 acre-feet (74 **m**illion **c**ubic **m**eters (mcm)) of water annually unless there are proportional reductions to US and Mexican water users due to extraordinary drought. The water to be delivered is stored in Elephant Butte Dam in New Mexico, and the water is diverted by Mexico at International Dam at El Paso, Texas and Ciudad Juarez, Chihuahua.

1944 Water Treaty

The 1944 Water Treaty allocates all major US tributaries 100 percent to the United States. The Treaty also allocates 100 percent of the Alamo and San Juan Rivers to Mexico. The US receives 1/3 of the waters arriving in the Rio Grande from six Mexican tributaries which include the Conchos, Arroyo las Vacas, San Rodrigo, Escondido, Salado and San Diego Rivers. Of the six tributaries, the Conchos and the Salado Rivers provide the largest inflow. The treaty requires a minimum annual average of 350,000 acre-feet (431.7 mcm) over a period of five years. In other words, Mexico owes to the US 1.75 million acre-feet over each five-year period.

Minimum Average Flow

Deficits

The 1944 Water Treaty also specifies that if a five-year cycle ends in a deficit due to extraordinary drought, Mexico repays it in the next cycle. For instance, the 2010-2015 cycle ended with a 263,250 **a**cre-**f**eet (AF) debt, which was paid off in early 2016.

US and Mexican farmers and municipalities in the Lower Rio Grande Valley rely on the deliveries from Mexico to be stored in Amistad and Falcon International Reservoirs and delivered for their needs.

International Boundary and Water Commission Minutes

Minute 325

The Commission implements decisions in the form of Minutes. Minutes are binding agreements of the two countries and are intended to implement treaty provisions. They take effect once approved by the US Department of State and Mexico's Foreign Affairs Ministry.

Minute 325

Water Debt Addressed

On October 21, 2020, the US and Mexico signed Minute 325: "*Measures to End the Current Rio Grande Water Delivery Cycle without a Shortfall, to Provide Humanitarian Support for the Municipal Water Supply for Mexican Communities, and to Establish Mechanisms for Future Cooperation to Improve the Predictability and Reliability of Rio Grande Water Deliveries to Users in the United States and Mexico*." The provisions of this Minute paved the way to end the cycle with no debt by having the final quantities of water owed transferred from Mexican ownership to US ownership at Amistad and Falcon reservoirs.

Minute 325 also formalized two binational work groups and tasked them with developing tools to improve predictability and reliability of Rio Grande deliveries and set the expectation of a new Minute by December 2023 to adopt the work groups' recommendations.

US/Mexico

Mexico's Drinking Water

The Minute provides for the potential temporary use of US water to meet Mexico's drinking water needs below Amistad Reservoir, through October 2021 (*see* Minute 325, page 1). However, it should be noted that after careful review of Mexico's municipal water supply needs while assuming dry inflow conditions, as well as Mexico determining they intend to use San Juan River water for users in Mexico, it is not anticipated that this water loan will be needed. [Editor's Note: This provision of the Minute was included for humanitarian support from the United States to Mexico, so if needed, the municipal water supply for Mexican communities along the Rio Grande, downstream from the La Amistad Dam, would be guaranteed. In a press release of October 22nd, Mexican Commissioner Humberto Marengo stated that Mexico's commitment has always been to comply with its obligations and that he appreciated the humanitarian support offered by the United States, so that, if necessary, the Mexican populations that depend on the Rio Grande for their supply will have the necessary support to meet their municipal needs, in accordance with the provisions of Article 4 of the Political Constitution of Mexico.]

Back-to-Back Cycles

The Minute enhances the data exchange regarding water use on both sides of the border and affirms that two back-to-back cycles cannot end in debt, which was originally agreed to in Minute 234 (discussed below).

Minute No. 325 received immediate approval from the US Department of State and Mexico's Secretariat of Foreign Relations and has entered into force.

Deliveries Schedule

The annual deliveries for the 2015-2020 Cycle are:

2015-2020 Cycle - Annual Deliveries

Year 1: 219,077 AF (+263,250 AF for previous cycle's debt)
Year 2: 567,238 AF
Year 3: 235,097 AF
Year 4: 218,097 AF
Year 5: 510,494 AF
Cycle Total: 1,750,003 AF

Adapted from map by Kmusser, see: https://commons.wikimedia.org/w/index.php?curid=11218868

Minute 234

Minute 234, implemented in 1969, provided strategies that Mexico could use singly, or in combination, to deliver the required amount of water under the Treaty. These include: (1) delivering more water from the six named tributaries; (2) deliver to the US some of Mexico's share of water from the six named tributaries (*i.e.* changing the percentages to a greater than 1/3 share to the US); and (3) transferring Mexican-owned water at the international reservoirs to the US. To end the 2015-2020 cycle, Mexico used all three of these strategies. How and when to use these strategies to avoid a deficit was the subject of extensive discussions between the US and Mexican Sections of the Commission in 2019 and 2020.

Mexico's Delivery Plans in Final Year of the Cycle & Civil Unrest

In December of 2019, Mexico assured the US they intended to end the cycle without a deficit. Mexico presented a plan to the US that showed they were going to make releases from several Mexican dams, including a significant release from Boquilla Dam on the Conchos River, in the winter of 2019-2020, when the weather was cooler and water losses at their lowest, to deliver water to the Rio Grande for the US. Mexico was also intending to make releases from Marte R. Gomez Dam to supply their users from the San Juan River rather than Falcon Dam. At that point in time, Mexico was behind in its deliveries by some 180,000 acre-feet.

US/Mexico

Civil Unrest

Mexico was not able to make releases from Boquilla Dam, however, due to civil unrest. Several times during 2020, the Mexican federal government attempted to increase releases from Boquilla Dam and each time, significant protests opposing those releases erupted and included the burning of federal buildings, and federally owned vehicles. Mexico reduced the releases after each attempt and also sent the National Guard to protect the dams in the Conchos River Basin. In September, protesters overtook the National Guard at Boquilla Dam, forced out the dam operators, damaged the control room, and began their ongoing occupation of the dam. Railroads, international bridges, and highway toll booths were blocked or occupied during the months-long protests, which resulted in one fatality.

Drought & Hurricanes

Meanwhile, during the summer, drought began to ramp up in northern Mexico. In July, the US National Oceanic and Atmospheric Administration (NOAA) Climate Prediction Center issued a La Niña Watch, meaning there was a 50-55 percent chance of a La Niña setting in over the fall of 2020. In September, NOAA changed that to a NOAA Advisory, meaning it was up to a 75 percent chance of a La Niña setting in. Anticipated storms during the wet season were not forthcoming, though there was a record number of hurricanes during the 2020 hurricane season. Hurricane Hanna was the only hurricane to provide substantial relief to the Mexican Rio Grande basin and only benefitted the San Juan River.

San Juan Water

Deliveries of San Juan water for beneficial use in the US is more complicated from a management perspective. With the San Juan reservoirs in Mexico full, Mexico offered a two-for-one deal. If the US would take delivery of San Juan River water for beneficial use, Mexico would only get credit for delivering one acre-foot for every two acre-feet used by the United States. With Texas declining the offer to take San Juan River water, the two nations needed to look for other options to end the cycle without a deficit.

Transfer Options

Those options looked at deliveries from other dams on the named tributaries and water transfers at the international reservoirs — Falcon and Amistad International Reservoirs lie on the border between the two countries and can be accessed by Mexico and the US for deliveries of water.

Releases from V. Carranza Dam on the Salado River as well as releases from Francisco I. Madero and Luis L. Leon Dams in the Conchos River Basin were made. On May 28, 2020, the shares from the Mexican tributaries were increased to the US with 100 percent on the Conchos River and 2/3 of the other Mexican tributaries. Starting on September 1, 2020, 100 percent of all Mexico tributary flow was allotted to the US. Several small transfers at Falcon and Amistad International Reservoirs were also made.

Public Information

Real-time stream gage data, five-year cycle data, and ownership of waters in the international reservoirs are all available on the US Section website at: https://ibwc.gov/Water_Data/Reports/Index.html.

Management Strategy

Path to More Reliable and Predictable Deliveries

Hoping for a hurricane is not good water management strategy. Developing and implementing good binational water management strategy is not easy. The path forward to more reliable and predictable flows will take time, effort, and creativity by both countries. Over the next few years, the two work groups will need to meet on a consistent basis. Relationships need to be forged and trust developed. We need to understand the issues faced by stakeholders on both sides of the border and understand the current and future water needs for municipal and agricultural uses and recognize that drier conditions in the future is likely our new reality. The federal governments need to be transparent with the states and stakeholders. We need to consider different ideas about how to get real "wet" water to legal water users. We need to model and evaluate various scenarios and reach a consensus on recommendations that could be incorporated into future binational agreement(s) with the goal of more reliable and predictable deliveries.

This all appears to be a daunting task, but with commitment by both countries, better binational water management strategies can benefit both countries. I believe it is possible. Minute 325 has set us on a path forward to get started. Let's roll up our sleeves and get it done.

For Additional Information:
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Jayne Harkins was appointed US Commissioner of the International Boundary and Water Commission, United States and Mexico, by President Donald J. Trump in 2018. As Commissioner, she heads the US Section of the Commission, overseeing personnel in twelve offices along the US-Mexico border and in Washington, DC. The Commission is responsible for applying the boundary and water treaties between the two countries. It operates and maintains various infrastructure projects along the US-Mexico border, including international storage dams, hydroelectric power plants, flood control levees, wastewater treatment plants, and monuments demarcating the international boundary. Commissioner Harkins is the first woman Commissioner for either the United States or Mexico in the 129-year history of the Commission.

From 2011-2018, Commissioner Harkins worked for the Colorado River Commission of Nevada (CRC) as the Executive Director. From 1984-2011, she worked for the US Bureau of Reclamation, including seven years as the Deputy Regional Director of the Lower Colorado Region in Boulder City, Nevada. She supervised water and power operations for the region and oversaw seven Reclamation offices.

Baley Review

WATER RIGHTS RULING

SUMMARY & REVIEW OF *BALEY V. UNITED STATES* IMPACTS TO WESTERN WATER LAW?

by Steven Shropshire & Marika Sitz, Jordan Ramis PC (Portland, OR)

Editors' Note: Jordan Ramis PC served as co-counsel to the Oregon Water Resources Congress in the preparation of an amicus brief regarding *Baley v. United States* before the US Court of Appeals for the Federal Circuit and an amicus brief in support of a writ of certiorari to the US Supreme Court.

Introduction

On June 22, 2020, the US Supreme Court (Supreme Court) denied certiorari in the case of *Baley v. United States*, 134 Fed. Cl. 619 (2017), *aff'd*, 942 F.3d 1312 (Fed. Cir. 2019). The denial leaves a decision on the books that could have considerable implications for some of the core tenets of Western water law.

Water Delivery Halted

Baley arose in the Klamath Basin, which extends across the Oregon-California border and is synonymous with the classic Western water quandary: too many demands on too little water. In 2001, the US Bureau of Reclamation (Reclamation) halted water deliveries to approximately 200,000 acres of cropland located on the west side of the Klamath Reclamation Project (Klamath Project) in order to meet federal Endangered Species Act (ESA) flow obligations and tribal trust obligations. *Baley*, 134 Fed. Cl. at 636-642. In response to this curtailment, a group of Klamath Project irrigators filed a lawsuit in the US Court of Federal Claims in October 2001, alleging that halting the water deliveries without providing compensation amounted to an unconstitutional taking. *Id*. at 641. In 2017, the US Court of Federal Claims ultimately ruled that although the plaintiff irrigators had asserted "cognizable property interests," the Klamath, Yurok, and Hoopa Valley Tribes held superior water rights, with earlier priority dates. *Id*. at 659-680. Because of these superior rights, the US Court of Federal Claims reasoned that the irrigators were not entitled to receive water under their contracts with Reclamation. *Id*. at 680. In November 2019, the US Court of Appeals for the Federal Circuit affirmed the decision by the US Court of Federal Claims. *Baley*, 942 F.3d 1312 (2019). The Supreme Court subsequently denied certiorari.

Taking Alleged

Superior Tribal Rights

This article will detail the circumstances that led to the *Baley* lawsuit and explain the water rights adjudication process as it applies to the Klamath Basin and to Western prior appropriation states. Next, it will summarize the decisions by the US Court of Federal Claims and the Federal Circuit, and discuss the implications of the *Baley* decision for Western water rights adjudications and Western water law. Finally, the article will briefly describe the implications of *Baley* to Fifth Amendment takings jurisprudence and consider how *Baley* may come into play in future adjudications.

Beginning of the *Baley* Litigation (2001 Reclamation Action)

"Bucket Brigade"

On May 7, 2001, thousands of people formed a line between Lake Ewauna and a Klamath Project irrigation canal, passing buckets of water from the lake to the canal. The aim of the "bucket brigade" was to draw attention to the plight of Klamath Basin irrigators in the wake of Reclamation's decision not to deliver irrigation water. The story of the Klamath bucket brigade is familiar to those who work in the Western water world. The *Baley* case also has its roots in Reclamation's 2001 decision.

Federal Projects

Like other irrigation projects across the West, Reclamation operates and manages the Klamath Project, which serves land in Oregon and California. The Reclamation Act of 1902 focused on "reclaiming" land in the West for irrigated agriculture purposes by providing a funding mechanism for large water distribution projects. *See* Pub. L. No. 57-161, 32 Stat. 388, now codified in 43 U.S.C. § 371, et seq. (2018). The proliferation of small, privately funded irrigation projects across the West in the late 1800s and the subsequent public demand for large-scale, government-funded irrigation projects that culminated in the Reclamation Act was discussed in *California v. United States*, 438 U.S. 645, 649 (1978).

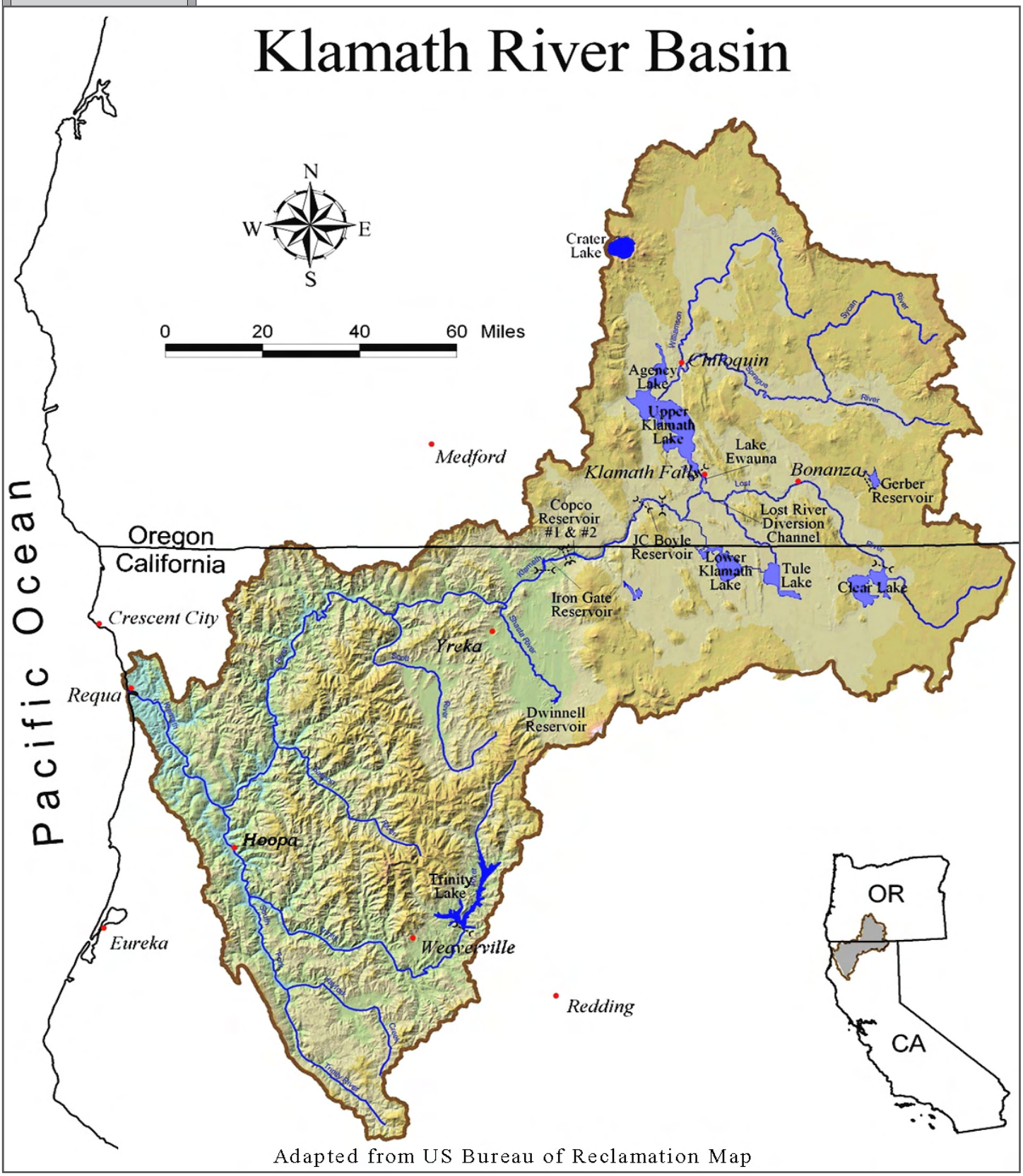
Klamath Project

Reclamation identified the Klamath Basin as an area to be reclaimed in the early 1900s. *Baley*, 134 Fed. Cl. at 626. In order to supply the Klamath Project, Reclamation secured water from existing water users in the area. *Id*. Between 1904 and 1905, water users around the Klamath Basin agreed to sell or give their rights to Reclamation. Oregon's water code was not passed until 1909, meaning none of the water rights to which Reclamation was laying claim were officially recorded with any state administrative body. In 1905, the Oregon legislature also authorized the federal government to lay claim to unappropriated water for authorized reclamation projects, such as the Klamath Project, provided the government filed written notice with the Oregon State Engineer. *Baley*, 134 Fed. Cl. at 626, discussing 1905 Or. Gen. Laws 401-02.

Baley Review

Irrigation Rights

The Klamath Project water rights that Reclamation obtained were strictly consumptive use rights for use in irrigated agriculture. Section 8 of the Reclamation Act noted that nothing in the Act could be "construed as affecting or intended to affect or to in any way interfere with the laws of any State or Territory relating to the control, appropriation, use, or distribution of water used in irrigation." 43 U.S.C. § 383 (2018). Section 8 also stated that the right to use water acquired under the Act "shall be appurtenant to the land irrigated, and beneficial use shall be the basis, the measure, and the limit of the right." 43 U.S.C. § 372 (2018).



Adapted from US Bureau of Reclamation Map

Baley Review

New Issues

2001 Operating Plan

Tribal Fishing Rights

Tribal Trust

Minimum Lake Levels

Revised Operating Plan Principles

Takings Lawsuit

State Water Law

Property Interest

When Reclamation made its decision in 2001, it was dealing with the same water sources and largely the same irrigation infrastructure it had been managing since 1905. However, this time it also had to make room for two new considerations: federal reserved water rights held in trust for Indian tribes and instream water supply needs for threatened or endangered species.

Heading into the 2001 irrigation season, forecasts predicted a dry year in the Klamath Basin. Reclamation incorporated this prediction into its annual operating plan, and assumed for the purposes of operation that it would be a "critical dry year." *Baley*, 134 Fed. Cl. at 637. Reclamation also conducted two biological assessments to determine the impact of the Project's operation on two species of endangered suckers and on the threatened Southern Oregon/Northern California Coast (SONCC) coho salmon. The biological assessments concluded that Klamath Project operations were likely to adversely affect each of the species. Under the ESA, such a finding requires a consultation with the National Marine Fisheries Service (NMFS) and the US Fish and Wildlife Service (USFWS). Reclamation initiated the consultation process and notified the irrigation districts served by the Klamath Project that it would not divert any water for use by the irrigation district patrons pending the revision of the 2001 operations plan.

While the Biological Opinions were being developed, a NMFS fisheries biologist charged with implementing the ESA testified that the downstream Yurok and Hoopa Valley Tribes had a federally recognized fishery right for SONCC coho salmon. *Id*. at 637. Additionally, a 1995 memo prepared by the Department of the Interior Solicitor's Office stated that the Yurok and Hoopa Valley Tribes held federal reserved fishing rights to take fish within their reservations in California. *Id*.

At the beginning of April, 2001, USFWS issued a Biological Opinion that determined the existing operations plan would likely jeopardize both sucker species and adversely modify the species' proposed critical habitat. *Id*. at 639. The following day, NMFS issued a Biological Opinion that reached the same conclusion for the SONCC coho salmon. *Id*. The NMFS Biological Opinion noted that both species of suckers are considered a tribal trust species for the Klamath Tribes. *Id*. The NMFS Biological Opinion also concluded that Indian tribes in the Klamath Basin had tribal reserved water rights that "consist of an instream flow sufficient to protect the right to take fish within their reservations." *Id*.

The **r**easonable and **p**rudent **a**lternatives (RPAs) listed by in the Biological Opinions placed severe restrictions on Reclamation's ability to provide irrigation supply to Klamath Project irrigators. The USFWS Biological Opinion RPAs determined that Reclamation needed to enact minimum levels for Upper Klamath Lake in order to avoid jeopardy for the suckers. *Id*. at 638. Under the NMFS RPAs, Reclamation was required to release stored water from Upper Klamath Lake to ensure minimum flow levels in the Klamath River below Iron Gate Dam to prevent declines in the coho salmon population. *Id*. In light of these Biological Opinions and the RPAs, Reclamation revised its operating plan for 2001.

The revised plan was guided by four principles: (1) meeting the requirements of the ESA; (2) trust responsibility of the United States to federally recognized tribes within the Klamath River basin; (3) providing deliveries of Klamath Project water; and (4) conserving wetland and wildlife values. *Id*. at 639. Ultimately, Reclamation determined that it could not meet obligations beyond those required by the NMFS and USFWS Biological Opinion RPAs. *Id*. The operations plan stated that "the trust responsibility to Klamath Basin Tribes is shared by all federal agencies that undertake activities in the Klamath Basin… Reclamation's Plan provides flow regimes and lake levels for protection of tribal trust resources within the limitations of the available water supply." *Id*. Reclamation did release 70,000 acre-feet of water for irrigation use in July 2001, but this water delivery came too late for most farmers to save their dry crops.

In October 2001, Klamath Basin farmers and irrigation districts filed suit against Reclamation in the US Court of Federal Claims, alleging that Reclamation's action constituted an unconstitutional taking. *Id*. at 640. The group of claimants consisted of fourteen irrigation districts and thirteen individual farms. *Baley*, 942 F.3d at 1316. In 2005, the US Court of Federal Claims granted summary judgment to the United States on the plaintiffs' claims under the takings clause and under the Klamath Compact. *Baley*, 134 Fed. Cl. at 642. The plaintiffs appealed.

In 2008, the US Court of Appeals for the Federal Circuit certified three questions to the Oregon Supreme Court. *Id*. The questions all related to the plaintiffs' rights to use water under state law. *Id*. The US Court of Appeals withheld a decision pending the Oregon Supreme Court's answers to the questions. *Id*. In 2010, the Oregon Supreme Court answered the questions, concluding that the 1905 Oregon legislative action precluded plaintiffs from acquiring an equitable or property interest in a water right to which the United States holds legal title. *Klamath Irr. Dist. v. United States*, 227 P.3d 1145, 1169 (2010). The Oregon Supreme Court also concluded that to the extent plaintiffs assert an equitable or beneficial property interest in a water right to which the United States claims legal title to in the Klamath Basin Adjudication, the plaintiffs are not "claimants" who must appear in the adjudication or lose the right. *Id*. Finally, the Oregon Supreme Court outlined a three-factor test to determine whether plaintiffs had acquired an equitable

Baley Review

Consolidated Class

Klamath Basin Adjudication

Stream Adjudication

"Pre-Code" Claims

"Decreed" Water Rights

Prior Appropriation

McCarran Amendment

Tribal Rights

or beneficial property interest in the water right. *Id*. The Federal Circuit Court of Appeals subsequently vacated the US Court of Federal Claims' judgment and remanded the case for further proceedings. *Baley*, 134 Fed. Cl. at 643. In 2017, the US Court of Federal Claims granted a consolidated class certification, which consisted of all owners or lessees of land who had a claim to an appurtenant water right to receive and beneficially use water from the Klamath Project in 2001 and who alleged a Fifth Amendment takings claim. *Id*. at 643-44. On September 29, 2017, the consolidated class filed suit in the US Court of Federal Claims. *Id*. at 644. The 2017 and 2019 *Baley* opinions by the US Court of Federal Claims and the US Court of Appeals for the Federal Circuit, respectively, are the direct result of this filing.

State Water Rights Adjudications and the Federal Government

When Reclamation decided to curtail water deliveries to Klamath Project irrigators in 2001, the Klamath Basin was twenty-six years into an Oregon general stream adjudication that included state and federal water claims. Understanding the adjudication process in the Klamath Basin and in other western states is critical to understanding the impact of the *Baley* case. This section will discuss the general goals of an adjudication, the Klamath Basin Adjudication specifically, and the avenues for federal involvement in state adjudications as identified by the McCarran Amendment and the Colorado River abstention doctrine.

A general stream adjudication is a distinctly state undertaking. Adjudications are conducted at the basin scale, and they provide an opportunity for water users in the basin to assert pre-water right code surface water rights claims and federal reserved water rights claims, and to have those claims recognized and quantified. (Oregon law also provides for the adjudication of pre-code groundwater claims, but the Klamath Basin Adjudication is limited to surface water). Adjudications across all Western states operate under the basic principles of the Prior Appropriation Doctrine, though each state has its own variations dictated by statute.

A "pre-code" surface water right claim describes a surface water use that was established before the state had an official administrative process (water code) to obtain a water right. In Oregon, the 1909 Water Rights Act established an administrative process for issuance of a surface water right. If a water user or water rights holder seeks official recognition of an appropriation that occurred before the enactment of the 1909 water code, the individual or entity must assert that right during an adjudication process by filing a claim with the Oregon Water Resources Department (OWRD). *See* ORS 539.005 *et. seq*. The claim deadline is jurisdictional. Failure to file by the claim deadline, precludes an appropriator from pursuing a claim in later stages of the adjudication. OWRD reviews claims to determine their validity. ORS 539.021. After reviewing the claims and holding administrative hearings, OWRD issues a final order, known as a Findings of Fact and Order of Determination (FFOD), which contains its findings and its determination of the validity of all filed claims. ORS 539.130. The FFOD then moves from the administrative realm into the judicial realm, where a state circuit court in the basin at issue reviews the FFOD. ORS 539.150. Once the FFOD reaches the court, any interested party wishing to challenge the FFOD must file an exception. *Id*. After reviewing the FFOD and the exceptions, the circuit court issues a water rights decree that may affirm or modify the FFOD. ORS 539.150(4). The result is a new set of "decreed water rights" that OWRD recognizes by issuing water rights certificates. ORS 539.140.

Adjudications play an important role in prior appropriation water allocation systems. All western states operate under some form of the prior appropriation system, which recognizes the priority of "senior" water right holders over "junior" water right holders. The state system is designed to protect the interests of senior rights holders who hold state certificated or decreed water rights that have older priority dates than junior rights holders. During times of water shortage, OWRD limits or shuts down water users in order of priority. In Oregon, senior water rights users have water rights that pre-date the 1909 Water Code. The adjudication process provides a pathway for OWRD to recognize those rights and enforce them against junior rights.

States have an important and powerful role in water allocation. Prior appropriation defines water management in the West, and federal ownership defines public lands in the West. So where do federal water rights, and the federal government, fit into the picture? The McCarran Amendment (43 U.S.C. § 666 (1952)), passed by Congress in 1952, helped define the role of the federal government in state water rights adjudication actions. In 1976, the Supreme Court clarified the principles of the McCarran Amendment in *Colorado River Water Conservation District v. United States*, 424 U.S. 800 (1976). The statute and the extensive body of case law interpreting it, set expectations for how the federal government can participate in state adjudications.

Colorado River Water Conservation District also addressed a specific type of federal reserved water right: a reserved water right held in trust by the federal government on behalf of Indian tribes. The Supreme Court first recognized tribal reserved water rights in *Winters v. United States*, 207 U.S. 564

Baley Review

State Jurisdiction

McCarran Amendment

Concurrent Jurisdiction

Colorado Water Rights

Abstention Doctrine

Federal Reserved Rights

(1908), finding that the federal government had impliedly reserved water in an amount sufficient to fulfill the purposes of the Fort Belknap Indian Reservation when it established the reservation. *Colorado River Water Conservation District* clarified that tribal reserved water rights asserted by the federal government as a trustee of a tribe fell within the purview of the McCarran Amendment and that the state court could exercise jurisdiction over the claims. *Id*. at 809.

The McCarran Amendment waives the sovereign immunity of the United States government to participate in state adjudications to determine federal reserved water rights. It also waives authority for the purpose of regulation and administration of those rights. Under the McCarran Amendment, the United States may be joined as a defendant in a suit "for the adjudication of rights to the use of water or a river system or other source, or for the administration of such rights, where it appears that the United States is the owner of or is in the process of acquiring water rights by appropriation under State law by purchase, by exchange, or otherwise, and the United States is a necessary party to such suit." 42 U.S.C. 666(a) (1952). The Amendment provides that when the United States is a party to such a suit, it "shall be subject to the judgments, orders, and decrees of the court having jurisdiction." *Id*.

The McCarran Amendment allows state and federal claims to be evaluated in concert during a state-run general stream adjudication. However, the McCarran Amendment does not prohibit federal jurisdiction over federal water right claims, meaning states and the federal government have concurrent jurisdiction over the adjudication of federal reserved water right claims. The McCarran Amendment also does not address the appropriateness of federal versus state jurisdiction or provide any sort of framework to determine when a water rights proceeding is proper in one venue versus the other. In 1976, the Supreme Court's opinion in *Colorado River Water Conservation District* sheds some light on how to determine the "appropriateness" of jurisdiction over water rights claims.

In *Colorado River Water Conservation District*, the United States filed a lawsuit against approximately 1,000 water users in Colorado Water Division 7 in federal District Court, seeking to declare federal reserved water rights on behalf of the United States and Indian tribes. Colorado is a prior appropriation state that is notable for its system of state water courts that continuously adjudicate water rights. One of the defendants in the federal District Court case sought an order from the Division 7 state court to make the US a party to the Division 7 adjudication process under the authority of the McCarran Amendment. The defendants also filed for dismissal of the federal District Court case, which the court granted. The case made its way to the Supreme Court, where the justices considered whether the District Court had properly dismissed the lawsuit.

The Supreme Court asked whether the District Court's dismissal was appropriate under the doctrine of abstention. In this context, abstention refers to a federal court's decision to abstain from exercising its otherwise valid jurisdiction by deferring to a parallel proceeding in a state court. It concluded that it was not appropriate under any existing abstention frameworks, but it was nevertheless appropriate under the circumstances articulated by the District Court. This new approach became known as the Colorado River abstention doctrine. The Colorado River abstention doctrine goes hand in hand with the McCarran Amendment. The doctrine establishes a strong preference against federal courts asserting jurisdiction over issues traditionally left to state courts when such jurisdiction would result in duplicative and piecemeal litigation. 424 U.S. 819-820.

Based on these legislative and judicial precedents, the federal government is expected to assert any federal reserved water right claims it may have during a comprehensive McCarran-compliant, state-initiated adjudication. Through such an adjudication, federal reserved water rights are evaluated in the same manner as any other water right. All parties, including the federal government, must assert any and all water rights claims at the beginning of the adjudication process in order to have those claims evaluated and potentially recognized.

The Klamath Basin Adjudication includes federal reserved water right interests asserted by the federal government on behalf of the Klamath Tribes, Reclamation, the Bureau of Land Management, the USFWS, and the US National Park Service. Notably, the federal government did not assert federal reserved water right interests on behalf of the Yurok Tribe or the Hoopa Valley Tribe, whose reservations are located in the lower portions of the Klamath River basin in California. The administrative review phase of the Klamath Basin Adjudication ended with the issuance of an FFOD on March 7, 2013, followed by an amended final order issued by OWRD on February 28, 2014, known as the Amended and Corrected Findings of Fact and Order of Determination (ACFFOD). The ACFFOD is currently under review by the Klamath County Circuit Court.

Overview of the Federal Circuit Court of Appeals *Baley* Decision and Impacts

Against the backdrop of the ongoing adjudication process in the Klamath Basin, the Federal Circuit made four findings that undermine the recognized state role in water allocation decisions and administration. First, the Federal Circuit held that federal reserved water right holders do not waive their water rights by failing to participate in a state adjudication process. *Baley*, 942 F.3d at 1341. This is true even when, as in the Klamath Basin Adjudication, the United States is actively participating in a basin adjudication process on behalf of all other federal reserved rights claims, including those of Indian tribes. Second, the Federal Circuit determined that federal reserved water right holders may effectively confirm and quantify their own water rights and that these water right holders are not beholden to administrative or judicial oversight. *Id*. at 1339-40. Third, the Federal Circuit maintained that federal reserved water right holders may self-regulate. *Id*. at 1340 n. 30. This could include shutting off one federal right holder (here, the Klamath Project) in order to serve another federal right holder without regard to its seniority or that of other rights on the stream system in a prior appropriation scheme. Finally, the Federal Circuit acknowledged that the United States government has the power to enforce its own water rights outside the state administrative process and without the due process embedded in that procedure. *Id*. at 1339-40.

The Federal Circuit's decision signals a significant departure from Supreme Court precedent, effectively allowing the US to assert federal reserved water rights outside of a comprehensive, McCarran-compliant state adjudication process. The Federal Circuit established that Reclamation's 2001 operational decision, which recognized tribal water rights that had not been adjudicated and had not been asserted by the federal government in the Klamath Basin Adjudication, was appropriate. *Id*. at 1340. In its affirmation of the US Court of Federal Claims' decision, the Federal Circuit stated, "Nor do we believe that the Yurok and Hoopa Valley Tribes waived their rights because they did not participate in the Klamath Basin Adjudication. For the reasons discussed above, their rights are federal reserved water rights not governed by state law." *Id*. at 1341.

Under *Baley*, the federal government could seemingly circumvent the lengthy, complex state adjudication process and take unilateral action to recognize and quantify unasserted federal reserved water rights. The Federal Circuit's holding is directly contrary to the Supreme Court's holding in *Cappaert v. United States*, 426 U.S. 128 (1976), which instructs that "[t]he McCarran Amendment waives the United States' sovereign immunity should the United States be joined as a party in state-court general water rights adjudication. *Colorado River* and the policy evinced by the Amendment may, in the appropriate case, require the United States to adjudicate its water rights in state forums." 426 U.S. at 146. The Federal Circuit's decision is directly at odds with the Supreme Court's precedent in *Colorado River* and the Colorado River abstention doctrine. Rather than abstaining from jurisdiction, the US Court of Federal Claims and the Federal Circuit issued judgments that are inconsistent with the pending state Klamath Basin Adjudication, underscoring the Supreme Court's reasons for federal abstention in the adjudication context.

The Federal Circuit's decision further throws a wrench in the state-centric water allocation system by noting that a water right holder's seniority under a prior appropriation scheme does not protect their right from federal actions that may halt delivery of that right. *Baley*, 942 F.3d at 1340 n.30. The Federal Circuit affirmed the U.S. Court of Federal Claims' finding that "the government's decision in 2001 to withhold water from plaintiffs in order to satisfy its Endangered Species Act and Tribal Trust obligations did not constitute an improper taking of plaintiffs' water rights or an impairment of plaintiffs' water rights because plaintiffs' junior water rights did not entitle them to receive any Klamath Project water in 2001." *Baley*, 134 Fed. Cl. at 680. Essentially, *Baley* allows federal agencies to enforce their own water rights and perform a regulatory function historically reserved to the states.

Adjudications have numerous junctures that require public notice and invite public participation. *See* ORS 539.030; ORS 539.040; ORS 539.090; ORS 539.130. They are designed to give all individuals who assert a water right claim the chance to make a case for the validity of that claim. The Federal Circuit supported Reclamation's unilateral allocation decision, writing, "[a]t the bare minimum, the Tribes' rights entitle them to the government's compliance with the ESA in order to avoid placing the existence of their important tribal resources in jeopardy." *Baley*, 942 F.3d at 1337. Because this decision happened outside the bounds of the active adjudication, water users in the Klamath Basin were not on notice of these downstream tribal reserved water right claims. If a federal agency recognizes a federal reserved water right outside of an adjudication proceeding, there is no guarantee that other water rights claimants in the basin will be made aware of such a recognition until the agency enforces the right.

Baley Review

Four Findings

Self Regulation

Enforcement Power

No Waiver of Tribal Rights

State v. Federal Authority

Seniority of Rights

Regulatory Function

ESA Compliance

Baley Review

Physical Taking

Takings v. Water Rights Issues

Upstream v. Downstream Tribal Rights

Uncertainty

Baley Implications for Takings Jurisprudence

Baley is revelatory for Western water law in the context of general stream adjudications, but it bears mention that the final opinion also has ramifications for takings claims like the one made by the Klamath Project irrigators. The takings implications of the *Baley* decision extend beyond the scope of this article. *Baley* was accepted into the US Court of Federal Claims as a takings case, and the Court found that Reclamation's actions constituted a permanent, physical taking of the plaintiffs' water. By affirming the decision, the Federal Circuit made a noteworthy conclusion about takings jurisprudence and usufructuary water rights. Despite the defendant's arguments that the 2001 action should be analyzed as a regulatory taking, the pair of opinions in the *Baley* case make clear that the ESA regulatory action taken by Reclamation should be analyzed as a physical taking. While this portion of the *Baley* opinion will likely prove advantageous for future cases with similar fact patterns, the remainder of the opinion undermines several long-held tenets of Western water law and United States Supreme Court precedent.

Conclusion

THE FUTURE OF ADJUDICATIONS AND WESTERN WATER LAW IN LIGHT OF *BALEY*

Currently, the Klamath County Circuit Court is evaluating more than 700 claims and 5,000 challenges to the claims as part of the Klamath Basin Adjudication. In the ongoing briefing now underway on threshold legal issues, the federal and Tribal parties have cited *Baley* repeatedly, urging the court to adhere to the Federal Circuit's conclusions regarding state and federal water law issues. This is problematic for two reasons. First, *Baley* was at its heart, a takings suit, and the Federal Circuit appropriately spent the majority of its analysis on that familiar territory. However, ignoring the Colorado River abstention doctrine, the court also chose to wade into the water rights issues currently subject to the Klamath Basin Adjudication. Despite the dispositive nature of the Federal Circuit's decision regarding the existence of downstream reserved tribal water rights, the court dedicated only a fraction of its analysis to those issues. As a result, the reasoning behind that portion of the decision is lacking in important analytical detail. Second, the Federal Circuit failed to draw a meaningful distinction between the federal reserved water rights held by the upstream Klamath Tribes and the downstream Hoopa Valley and Yurok Tribes. This leads to a muddied and incomplete set of findings that further render the case of dubious precedential or persuasive value with respect to the ongoing Klamath Basin Adjudication proceedings involving the claims of the Klamath Tribes.

Outside of Oregon, the handful of cases that have cited *Baley* since November 14, 2019, primarily focus on *Baley's* determination that takings claims should be evaluated under the physical takings framework.

Baley is troubling because it impacts another scarce commodity in the Western water world — predictability. In the West, a drier-than-expected year can be devasting for all stakeholders, but especially for irrigators. In the face of climate change, increased instances of drought and shifts in seasonal precipitation patterns will exacerbate this inherent unpredictability. Under these conditions, state adjudication and administrative processes ensure that water users have some degree of structure and certainty in relation to water allocation. The *Baley* court has endorsed the idea that federal agencies may step far beyond the established bounds of state adjudications and regulatory procedures to make their own determinations about the existence, scope, and priority of their federal reserved water rights. This will disrupt the value and certainty that the West has come to expect from McCarran-compliant state adjudications, and will inevitably lead to more time consuming and costly jurisdictional battles between state and federal courts over federal reserved water rights.

For Additional Information:
Steve Shropshire, Jordan Ramis PC, 541/ 647-2979 or steve.shropshire@jordanramis.com
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Steven Shropshire is a member of the Jordan Ramis PC's Dirt Law® and Environmental & Natural Resources teams, focusing his practice on water rights, natural resources, and real property matters.
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WATER BRIEFS

WATER RESOURCES DEVELOPMENT ACT 2020 US

Passed by the US Congress, the Water Resources Development Act of 2020 (WRDA 2020) was signed by President Trump on December 27, 2020. What follows are abridged excerpts from the Congressional Research Service "In Focus" factsheet "Water Resources Development Act of 2020" (IF11700).

Like most previously enacted WRDAs, WRDA 2020 not only authorized US Army Corps of Engineers (Army Corps) studies and projects but also refined congressional policy direction for the Army Corps and adjusted existing Army Corps civil works authorities. A limited number of WRDA 2020 provisions are associated primarily with other agencies (e.g., §§507, 508, 510).

Navigation Trust Funds

Commercial shippers and barge operators contribute toward paying for navigation improvements through taxes that are deposited into two trust funds. Monies from the trust funds are made available for eligible activities through appropriations legislation. WRDA 2020 altered various aspects of the trust funds. WRDA 2020 altered the Harbor Maintenance Trust Fund (HMTF) adjustment to be the sum of: 1) the amount of the deposits into the fund two years prior (which were $1.8 billion in FY2019); and 2) an amount starting at $500 million in FY2021 and increasing by $100 million annually to $1.5 billion for FY2030 and thereafter. At the start of FY2021, the HMTF estimated balance was roughly $9.2 billion. WRDA 2020 (§109) adjusted the Inland Waterways Trust Fund (IWTF) contribution to waterway construction projects to allow more federal investment.

Policy Direction

WRDA 2020 (§113) requires the Army Corps to update the agency's guidance on assessing sea level rise and inland flooding to reflect the best available peer-reviewed science. WRDA 2020 (§110) requires the Army Corps to adopt procedures to include more consideration of environmental and social goals and regional economic benefits during project planning.

Study and Project Authorizations

WRDA 2020 (§401) authorized the construction of 46 water resource development projects identified in the Army Corps reports completed since WRDA 2018. Several had federal costs greater than $400 million: three coastal storm damage reduction projects (two in NY, one in VA); two navigation projects (both in TX); and one ecosystem restoration project (IL). WRDA 2020 also directed the Army Corps to expedite other authorized studies (e.g., §202) and to conduct a coastal resilience study for the Great Lakes (§211) and five river basin studies: Lower Mississippi River (§213); Upper Mississippi River (§214); Lower Missouri River Basin (§216); Upper Missouri River (§216); and Sacramento River (§209).

Environmental Infrastructure

WRDA 2020 (§352) amended 14 environmental infrastructure authorities to increase authorization of appropriations and, for some authorities, to expand geographic scope and authorized activities (e.g., stormwater systems).

Backlog of Authorized Projects

The Army Corps has an estimated $98 billion backlog of authorized unconstructed water resources projects.

WRDA 2020 (§301):

- established a process for the deauthorization of unconstructed projects with federal costs of at least $10 billion
- deauthorized projects authorized prior to November 17, 1986, that had not been started or were unfunded for 10 years
- required the Army Corps to provide Congress with a post-authorization change report that reflects updated economic and environmental analyses before carrying out a project that had not been initiated within 20 years of the project's authorization.

WRDA 2020 (§360) amended various existing authorities related to Army Corps study and project deauthorization processes, including repealing many of the deauthorization processes enacted in 2014, 2016, and 2018.

For info: The CRS "In Focus" factsheet (IF11700) is available at: https://crsreports.congress.gov/product/pdf/IF/IF11700.

EPA'S COLUMBIA RIVER FISH COLD WATER REFUGIA PLAN NW

EPA's northwest regional office has released a "Columbia River Cold Water Refuges Plan" outlining the critical role that zones of cooler water play in salmon survival as the fish make their way back to their spawning grounds. *See* Palmer, *TWR* # 164. These zones, called cold water refuges, occur where cool tributaries enter the Columbia River. The report provides information for federal, state, tribal, and local watershed managers to consider as they implement actions to support healthier salmon populations in the face of challenging river temperatures. Adult steelhead and fall Chinook salmon use refuges the most because they migrate when Columbia River temperatures are warmest.

By issuing this plan, EPA is meeting its responsibilities under the federal Endangered Species Act, associated with the Reasonable Prudent Alternative identified in the 2015 Biological Opinion issued by the National Marine fisheries Service.

EPA identified 23 cold water refuges in the Lower Columbia River. Twelve of these are primary refuges and make up 98% of the total volume of available refuge. EPA recommends restoration of other tributaries to create more cold-water refuges in light of predicted continued Lower Columbia River warming. In an average year, up to 65,000 steelhead and 5,000 fall Chinook occupy eight refuges between the Bonneville Dam and The Dalles Dam during the end of August.

EPA concludes that by maintaining the 12 primary cold-water refuges and increasing the amount of refuge provided by the Umatilla River, Oregon's cold-water refuge criteria in its state Water Quality Standards can be met.

For info: John Palmer, EPA Project Lead, 206/ 553-6521 or palmer.john@epa.gov

EPA website: www.epa.gov/columbiariver/columbia-river-cold-water-refuge

WATER BRIEFS

PECOS RIVER RULING TX/NM
EVAPORATION LOSS

On December 14, the US Supreme Court (Court) dismissed a lawsuit brought by Texas against New Mexico, denying a motion by Texas for review of the River Master's determination in a dispute over evaporation loss of water stored in New Mexico at the request of Texas. Justice Kavanaugh authored the 7-1 opinion, with Justice Alito concurring in part and dissenting in part. *Texas v. New Mexico*, No. 65, Orig (December 14, 2020).

The 1949 Pecos River Compact provides for equitable apportionment of water from the Pecos River by New Mexico and Texas. In a 1988 amended decree in this case, the Court appointed a River Master to annually calculate New Mexico's obligations to Texas under the Compact. *See Texas v. New Mexico*, 485 U. S. 388. The Court also adopted the River Master's Manual, which specifies how to make necessary calculations to determine whether New Mexico is complying with its Compact obligations. §C.5 of the Manual provides that when water is stored "at the request of Texas" in a facility in New Mexico, then New Mexico's delivery obligation "will be reduced by the amount of reservoir losses attributable to its storage."

In 2014, a tropical storm caused heavy rainfall in the Pecos River Basin. To prevent flooding, Texas's Pecos River Commissioner requested that some of the river's water be stored in New Mexico. New Mexico's Commissioner agreed. Several months later, the water was released. A significant amount of water evaporated while the water was held in New Mexico and Texas asserted that New Mexico should be responsible for the loss.

For years, the States tried to reach an agreement on how the evaporated water should be accounted for under the Compact. To permit negotiations to continue, the River Master outlined a procedure in 2015 that called for the future resolution of the issue. Neither State objected. When negotiations eventually broke down, New Mexico filed a motion with the River Master that sought delivery credit for the evaporated water. The River Master ruled in New Mexico's favor, rejecting Texas's argument that the motion was untimely and concluding that the evaporated water was water stored "at the request of Texas" under §C.5 of the River Master's Manual.

The Court ruled that New Mexico's motion for credit for the evaporated water was not untimely, since both States agreed to postpone the River Master's resolution and neither party may later object to the negotiation procedure outlined by the River Master to resolve the dispute.

The Court also held that New Mexico is entitled to delivery credit for the evaporated water. "The River Master's Manual, which was approved by this Court in 1988, implements the Compact and speaks directly to this question: When water is stored in New Mexico 'at the request of Texas,' then New Mexico's delivery obligation 'will be reduced by the amount of reservoir losses attributable to its storage.'" *Slip Op*. at 1-2. Texas requested that New Mexico store water at a facility in New Mexico, and New Mexico did so, with the understanding that the water belonged to Texas, the Court found. Texas's counterarguments — that the stored water was not actually part of the "Texas allocation" referred to in §C.5, that New Mexico did not "store" the water for §C.5 purposes, and that Texas should not be charged for any evaporation occurring from March 15 until the water was released in August 2015 — were unpersuasive to the Court.

Because the decision is heavily based on facts specific to the Texas and New Mexico conflict, including the River Master's Manual and its provisions, etc., the case is likely to have limited precedencial value for other interstate disputes.

For info: Opinion available at: www.supremecourt.gov/opinions/20pdf/22o65_dc8e.pdf

GROUNDWATER WORTH AZ
ECONOMIC STUDY

A new study dated November 24, 2020, was recently released, *The Economic Importance of Groundwater in Arizona, 2010-2018*. The study was written by Dr. Tim James, Dr. Anthony Evans, Eva Madly and Owain Evans of the Seidman Research Institute, and the W. P. Carey School of Business, Arizona State University. The new study highlights the tremendous impact groundwater has on Arizona's economy and underscores the need to make sure every community has tools to protect and manage it far into the future, said Todd Reeve, director of Business for Water Stewardship (BWS), which commissioned the report. "Today, Arizona relies on groundwater for 40 percent of its water supply, and sustained access to groundwater remains essential for industrial, agricultural and municipal uses in Arizona," said Reeve.

The study calculated the economic impact of groundwater use from 2010 to 2018 in the state's five most populous regions: Phoenix, Tucson, Prescott, Pinal County, and Santa Cruz County. These regions are are designated as "Active Management Areas" (AMA) for water management purposes; AMAs are regulated under the Groundwater Management Act of 1980. Arizona's groundwater use was responsible for generating about $1.2 trillion into the economy during the nine-year period. When broken down on an annual basis, that amounts to approximately 43% of the state's annual average GDP. In Phoenix alone, groundwater generated $102.5 billion of average annual contribution to state GDP, supporting over one million jobs.

Among the study findings: Approximately 11.7 million acre-feet of groundwater was used by agriculture, industrial, and municipal customers during the nine-year period; Groundwater supplies in the five AMAs contributed to annual employment of 1.4 to 1.7 million jobs, depending on the year; More than half of total groundwater use, 50.1 percent, took place in the Phoenix AMA; More than a third of the groundwater, 35.5 percent, was used in the Pinal AMA; the Tucson AMA accounted for 11.7 percent of total groundwater used.

For info: Study at: https://businessforwater.org >> Search on Groundwater

TRIBAL LEASING AZ
FEDERAL LAW PROPOSED

The Colorado River Indian Tribes (CRIT) is proposing federal legislation authorizing CRIT to lease, exchange, and store underground a portion of its

WATER BRIEFS

consumptively used decreed Colorado River water allocation off of its reservation, within the Lower Basin of the State of Arizona. The federal legislation proposes two actions: To authorize CRIT, subject to approval by the US Secretary of the Interior (Secretary), to enter leases, options to lease, exchanges, options to exchange, and agreements for storage underground of a portion of CRIT's consumptively used decreed water allocation that is a part of the Lower Colorado River apportionment for the State of Arizona (Decreed Allocation) for use and storage off of the CRIT Reservation in the part of Arizona that is in the Lower Basin of the Colorado River (CRIT Water Agreements), and; To authorize the Secretary to approve CRIT Water Agreements.

In addition to the proposed federal legislation, CRIT will also enter into the following agreements: An agreement between CRIT, the Arizona Department of Water Resources (ADWR) and the Secretary to establish a cooperative process to provide notice, share information, and collaborate in advance of the execution of CRIT Water Agreements, and for the procedures to quantify, report, verify, and account for the portion of the CRIT Decreed Allocation included in CRIT Water Agreements. An agreement between CRIT and ADWR to establish a cooperative process to provide notice, share information, and collaborate in advance of CRIT executing a CRIT Water Agreement.

The lease, exchange, or storage underground shall only provide for temporary use or storage underground of CRIT's consumptively used Decreed Allocation off of the CRIT Reservation and shall not permanently alienate CRIT's Decreed Allocation. The lease, exchange, or storage underground shall also not reduce or limit the right of CRIT to use the full remaining Decreed Allocation on the CRIT Reservation in Arizona. All water made available by CRIT for use off reservation shall be from the reduction in consumptive use on the CRIT Reservation.

The proposed language for the legislation and the agreements may be viewed on the Public Notice website below. ADWR hosted two virtual public meetings on the potential legislation and agreements and accepted written public comments during a public comment period that ended January 8.

For info: Public Notice at: https://new.azwater.gov/public-notice/CRIT

WATERSHED PLAN CA

GROUNDWATER PUMPING

As a result of the Sustainable Groundwater Management Act (SGMA) of California, farmers in the Tule sub-basin are facing significant cutbacks to groundwater pumping. The Lower Deer Creek Watershed Plan project is designed to improve groundwater quantity, wetland habitat, threatened and endangered species conservation, and the viability of agriculture in a state-identified critically over drafted sub-basin.

In coordination with The Nature Conservancy and National Audubon Society, Pixley Irrigation District GSA is developing a PL-566 Watershed Plan (566 Plan) to evaluate and select sites for constructing wildlife-friendly recharge basins, as well as areas suitable for upland habitat restoration land treatments for upland species on retired marginal agricultural lands. The overall purpose of this project is to engage willing landowners in improving groundwater quantity, providing wetland and upland habitat, and supporting the ongoing viability of agriculture in the face of severe cutbacks to groundwater pumping.

The project team anticipates that the 566 Plan will be complete by mid-2021. In order to implement the activities in the plan, the project team must complete an environmental assessment in accordance with the National Environmental Protection Act (NEPA) and California Environmental Quality Act (CEQA).

The 566 Plan is a project of the Tule Basin Land & Water Conservation Trust (Trust). The Trust was created in 2019 by local landowners, conservationists, farmers, and water managers who have a passion for conservation and a commitment to supporting the local economy and community of the southern San Joaquin Valley. The Trust was launched to support local landowners in making decisions on how best to manage their land and water to achieve local groundwater sustainability. Since its founding, the Trust has worked in collaboration with local irrigation districts, groundwater sustainability agencies, other conservation organizations and nonprofits, as well as wildlife agencies to achieve its mission.

For info: www.tuletrust.org; Pixley Irrigation District at elimas@ltrid.org

NASA WATER PORTAL US

DATA NEEDS & CAPABILITIES

NASA's Water Portal is now live and available to the public, scientists, water managers, and decision makers. The portal is a water information hub produced by NASA's Western Water Applications Office. It provides interactive catalogs of Water Data Needs and NASA Water-Related Capabilities, as part of their mission to improve how water is managed in the arid western US by getting NASA data, technology, and tools into the hands of water managers and decision makers. The portal serves as a hub for building connections between these catalogs and its partners, including water managers, decision makers, and scientists. The Water Portal welcomes submissions to the Needs and Capabilities catalogs. If water users share their Water Data Need or Water Capability (see website), NASA will be in touch.

For info: https://wwao.jpl.nasa.gov/portal/

"HABITAT" DEFINITION US

ESA FINAL RULE

On December 16, 2020, the US Fish & Wildlife Service and the National Marine Fisheries Service (jointly, the "Services") adopted a final rule defining "habitat" under the Endangered Species Act (ESA). The regulatory definition adopted is as follows: For the purposes of designating critical habitat only, habitat is the abiotic and biotic setting that currently or periodically contains the resources and conditions necessary to support one or more life processes of a species. *See* codification of definition at 50 C.F.R. § 424.02.

This definition becomes effective January 15, 2021 and applies to proposals by the Services to designate areas as critical habitat after January 15.

For info: Definition at: 85 Fed. Reg. 81,411 (Dec. 16, 2020)

WATER BRIEFS

COLORADO RIVER WEST
MANAGEMENT REPORT

The Congressional Research Service released an updated report on December 15, 2020, *Management of the Colorado River - Water Allocations, Drought, and the Federal Role,* authored by Charles V. Stern and Pervaze A. Sheikh. This report provides background on management of the Colorado River, with a focus on recent developments. It also discusses the congressional role in the management of basin waters.

Colorado River water is used primarily for agricultural irrigation and municipal and industrial (M&I) purposes. The river's flow and stored water also are important for power production, fish and wildlife, and recreation, among other uses. A majority (70%) of basin water supplies are used to irrigate 5.5 million acres of land; basin waters also provide M&I water supplies to nearly 40 million people.

Pursuant to the multiple compacts, federal laws, court decisions and decrees, contracts, and regulatory guidelines governing Colorado River operations (collectively known as the Law of the River), Congress and the federal government play a prominent role in the management of the Colorado River. Specifically, Congress funds and oversees Reclamation's management of Colorado River Basin facilities, including facility operations and programs to protect and restore endangered species. Congress has also approved and continues to actively consider Indian water rights settlements involving Colorado River waters, and development of new and expanded water storage in the basin. In addition, Congress has approved funding to mitigate drought and stretch basin water supplies and has considered new authorities for Reclamation to combat drought and enter into agreements with states and Colorado River contractors.
For info: Report at: https://crsreports.congress.gov/product/pdf/R/R45546

TRIBAL SOVEREIGNTY US
TRIBAL FISHERIES

On December 4, the US Circuit Court of Appeals for the Eighth Circuit released its opinion in *Scalia v. Red Lake Nation Fisheries, Inc.*, No. 19-3373, rejecting the US Department of Labor's attempt to regulate the tribal fisheries through the Occupational Safety and Health Act (OSHA). The Native American Rights Fund (NARF) helped to preserve the right of the Red Lake Band of Chippewa Indians to run their Tribal fisheries without interference from the federal government.

The case arose from a 2017 accident on the lake in Minnesota that prompted the Federal Occupational Safety and Health Administration to send inspectors to the Red Lake Reservation, and ultimately to issue two citations with fines totaling more than $15,000 to the Red Lake Nation Fisheries, Inc. The Fisheries are incorporated under tribal law, wholly owned and operated by the Tribe, and employ only tribal members. The Fisheries challenged the citations, arguing that the Department of Labor had no authority to issue them to a tribal enterprise operating within the tribe's reservation. The dispute first went to an administrative law judge within the Department of Labor who ruled in favor of the Tribe, relying in large part on an earlier Eighth Circuit decision holding that the Age Discrimination in Employment Act did not apply to a tribal enterprise and its tribal member employee.

The Department of Labor appealed, pointing to OSHA's broad definitions of "employer" and "commerce," and arguing that Congress intended the law to have a very broad sweep. In addition, the Department argued, because OSHA specifically excluded both federal and state governments from the definition of "employer" — but did not exclude tribal governments — Congress intended for OSHA to apply to tribal governments. Finally, the Department argued that the Fisheries should not be considered a governmental entity, but rather a commercial entity.

The Fisheries also pointed to the text of OSHA, noting that Congress said it enacted the law in order to regulate foreign and interstate commerce, but said nothing about regulating Indian commerce. They pointed to more than a thousand pages of Congressional testimony, research, and drafts that said nothing about regulating tribes or tribal enterprises. They pointed to the Tribe's treaty right to fish, and argued federal regulation would interfere both with that treaty fishing right and more broadly with the Tribe's right to govern itself.

The three-judge panel of the Eight Circuit handed down a unanimous opinion holding that OSHA does not authorize the Federal government to regulate the Fisheries. "For a statute of general applicability to apply to Indian self-government, this court looks for either an 'explicit statement of Congress' or 'evidence of congressional intent to abrogate…in the legislative history of a statute.'" *Slip Op*. at 3 (citation omitted). The Court found no such explicit statement in OSHA, and no such evidence of intent in OSHA's legislative history.
For info: www.narf.org; Decision at: https://www.ca8.uscourts.gov/

NEW RESERVOIR PLAN CA
STORAGE FEASIBILITY

On December 22, the US Bureau of Reclamation (Reclamation) released the Final Feasibility Report for the North-of-the-Delta Off-stream Storage Investigation and transmitted it to Congress. The report documents the potential costs and benefits of the Sites Reservoir Project. As part of a continuing effort to increase storage capability throughout California, Reclamation and the Sites Project Authority worked together to evaluate new off-stream surface water storage north of the Sacramento-San Joaquin Delta.

Located 81 miles northwest of Sacramento, Sites Reservoir would store water diverted from the Sacramento River for future releases to beneficiaries throughout the state. The proposed project includes an off-stream reservoir located north-of-the Delta where the majority of California's rainfall occurs.

According to Reclamation, the proposed reservoir would provide additional water supply for agriculture and municipal and industrial purposes, CVP-operational flexibility, anadromous fish benefits (migrating fish that return from the ocean to spawn), wildlife refuges, Delta ecosystem enhancement, flood damage reduction, and recreation.
For info: Ryan Davis, Reclamation, 916/ 978-5083 or rdavis@usbr.gov

CALENDAR

January 20 WEB
Developing a Water Conservation Plan and Climate Action Plan Webinar, American Water Works Association Event. For info: www.awwa.org/Events-Education/Events-Calendar

January 20-22 WEB
Urban Stream Processes and Restoration Program (Texas) - Advanced Stream Restoration Design, Co-hosted by the Texas Riparian Association, Texas A&M AgriLife and the Texas Water Resources Institute. For info: https://twri.tamu.edu/our-work/engaging-educating/

January 21-22 WEB
California's Changing Coastal & Shoreline Management - Legal and Regulatory Insights and Responses Seminar, Live Webcast Broadcast from San Francisco. For info: The Seminar Group, 800/ 574-4852, info@theseminargroup.net or www.theseminargroup.net

January 22 WEB/WA
19th Annual SEPA & NEPA Seminar - Washington's State Environmental Policy Act & Fate of Trump Administration's NEPA Changes: Policy & Practicalities, For info: Law Seminars International, 206/ 567-4490, registrar@lawseminars.com or www.lawseminars.com

January 27 WEB
Staying Ahead of PFAS Using AWWA's Source Water Evaluation Guide Webinar, American Water Works Association Event. For info: www.awwa.org/Events-Education/Events-Calendar

January 27-28 WEB
Cybersecurity Fundamentals for Water and Wastewater Utilities Training Course, For info: www.euci.com/events/

January 28-29 WEB
Endangered Species Act Conference - 28th Annual - Live Webcast, For info: The Seminar Group, 800/ 574-4852, info@theseminargroup.net or www.theseminargroup.net

January 28-29 WEB
Electric Power in the West - 26th Annual Seattle Conference, Interactive Online Broadcast. For info: Law Seminars International, 206/ 567-4490, registrar@lawseminars.com or www.lawseminars.com

January 28-29 WEB
Texas Wetlands - Virtual Event, New Virtual Format. For info: CLE International, 800/ 873-7130 or www.cle.com

January 29-30 TX & WEB
Association of Water Board Directors Mid-Winter Conference, Austin. In-Person Event and Internet Accessible. For info: http://awbd-tx.org/wp/events/future-conferences/2021-mid-winter-conference/

February 2 WEB/WA
Washington State Department of Ecology Update by Director Laura Watson, Northwest Environmental Business Council Event. For info: www.nebc.org/event/

February 2-4 WEB/HI
Hawaii AWWA Section Pacific Water Conference, HI American Water Works Association Event. For info: www.awwa.org/Events-Education/Events-Calendar

February 4-5 WEB
Lead Service Line Replacement Training Course: Policy Design, Program Development, and Execution, For info: www.euci.com/events/

February 9-10 WEB/CA
AGWA – AGWT Annual California Groundwater Program, Association of Ground Water Agencies / American Groundwater Trust — Joint Event. For info: https://agwt.org/events

February 9-11 WEB
GreenBiz 21: Sustainable Business Leaders Conference, Online Event - Invitation Only. For info: https://events.greenbiz.com/events/greenbiz-forum/online/2021

February 9-12 WEB/CO
Colorado Water Congress Annual Convention, For info: https://web.cowatercongress.org/events/

February 10-11 WEB
AWWA Virtual Summit on Sustainable Water Management, PFAS, and Waterborne Pathogens Webinar, American Water Works Association Event. For info: www.awwa.org/Events-Education/Events-Calendar

February 11-12 WEB/CA
PFAS in California Seminar: New Data - New Regulations, For info: Law Seminars International, 206/ 567-4490, registrar@lawseminars.com or www.lawseminars.com

February 17 WEB
Putting and End to PFAS – Emerging Technologies: PFAS Destruction Systems With No Toxic Byproducts, Northwest Environmental Business Council Event. For info: www.nebc.org/event/

February 22 WEB
Floodplain Regulation Development in Oregon & Washington Public Ports: Weekly Four Part Series Webinar. Remainder of Series: March 1, 8 & 15. For info: The Seminar Group, 800/ 574-4852, info@theseminargroup.net or www.theseminargroup.net

February 22-25 WEB
International Erosion Control Association Annual Conference & Expo, For info: www.ieca.org

February 23-24 WEB
10th Annual World Water-Tech Innovation Summit: "Aligning Digital Innovation with Strategic Vision", For info: https://worldwatertechinnovation.com

March 1 WEB
Floodplain Regulation Development in Oregon & Washington Public Ports: Weekly Four Part Series Webinar. Remainder of Series: March 8 & 15. For info: The Seminar Group, 800/ 574-4852, info@theseminargroup.net or www.theseminargroup.net

March 4-5 OR & WEB
The Mighty Columbia Seminar, Portland. Hotel Monaco, 506 SW Washington Street. Available Via Live Webcast; PROMO Code SPP50 for $50 off for TWR Readers. For info: The Seminar Group, 800/ 574-4852, info@theseminargroup.net or www.theseminargroup.net

March 5 OR
Oregon Association of Water Utilities Sunriver Conference 2021, Sunriver. Water Law Class Presentations. For info: www.water-law.com/coming-events/?event_id1=6495

March 8 WEB
Floodplain Regulation Development in Oregon & Washington Public Ports: Weekly Four Part Series Webinar, Remainder of Series: March 15. For info: The Seminar Group, 800/ 574-4852, info@theseminargroup.net or www.theseminargroup.net

March 11-12 WEB
International Conference on Fresh Water Resources Management and Technology, World Academy of Science, Engineering & Technology Event. For info: https://waset.org

March 11-12 WEB
Law of the Colorado River. Legal Issues, Conservation, and Management of the Colorado River. For info: CLE International, 800/ 873-7130 or www.cle.com

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

(continued from previous page)

March 15 **WEB**

Floodplain Regulation Development in Oregon & Washington Public Ports: Weekly Four Part Series Webinar. For info: The Seminar Group, 800/ 574-4852, info@theseminargroup.net or www.theseminargroup.net

March 15-25 **WEB**

36th Annual WateReuse Symposium, Virtual Conference. For info: https://watereuse.org/news-events/conferences/

March 16-17 **WEB**

Association of Metropolitan Water Agencies Annual Water Policy Conference: Legislative Plans - Inside the Biden Administration, For info: www.amwa.net/2021WPC

March 17-18 **VA**

2021 Association of Clean Water Administrators Mid-Year Meeting, Alexandria. Hilton Alexandria Old Town. For info: www.acwa-us.org

March 18-19 **MT**

Real Estate & Land Use Law in Montana, Missoula. TBA. For info: The Seminar Group, 800/ 574-4852, info@theseminargroup.net or www.theseminargroup.net

March 23-26 **TX**

Western States Water Council Spring 2021 (195th) Meeting, El Paso. Hopes to Return to In-Person Meeting. For info: www.westernstateswater.org/upcoming-meetings/