

California Drought Update

by Patrick Ruckert

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A Note To Readers

To especially note the inauguration and beginning of operations of the Carlsbad desalination plant on Monday, December 14, this issue will be mostly dedicated to desalination, with extensive coverage of this historic event.

More than 50 years ago, our last great President, John F. Kennedy, initiated a program to build a series of nuclear-powered desalination plants in California and Texas. Just one year after this President was assassinated, his policy was approved and funded by the U.S. Congress, and the contract to build the first one in Orange County was signed by the Metropolitan Water District of Southern California and the Federal Atomic Energy Commission. The long-term solution for California's water needs was underway. Unfortunately, with the death of President Kennedy, the nation changed, and the policy he had initiated faded away over the next 5-10 years. The full story is here:

<http://www.californiadroughtupdate.org/2015/05/29/nuclear-powered-desalination-in-california-parts-i-iv/>

But, to bust this drought requires more than precipitation. It requires a political revolution, returning the nation to the idea that progress is not a dirty word. But, for now, from the technical side, I urge you to read or re-read the article by Ben Deniston of the LaRouche PAC science team, published earlier this year: "New Perspectives on the Western Water Crisis."

larouchepac.com/20150401/new-perspectives-western-water-crisis

Following just one other report our coverage this week will be a gleaning from media reports on the opening of the Carlsbad plant.

Drought Conditions and the Reservoirs

Here we are, a month into the rainy season. What does the drought look like, and have the reservoirs begun filling? The U.S. Drought Monitor for December 15 demonstrates that it will take a lot more (in fact a lot, lot more) precipitation to bust this drought. California three months ago registered 90.36 percent of the state in "Severe Drought." Today the reading is 90.63 percent, worse than three months ago by a little. "Exceptional Drought," the worst category has declined a little, from 46 percent to 44.84 percent.

As for the reservoirs, since mid-November, only San Luis has registered more than a one percent increase of its level, moving from 17 percent of capacity to 20 percent. Otherwise, all the others remain at record or near record lows. Folsom Lake, after hitting a record low of 14 percent of capacity

has moved back up to 15 percent.

Carlsbad's Desalination Plant Opens the Door

The following is gleaned from the dozens of press reports published or broadcast over the past few days from media all over the world. Even the California press is well represented. The most important idea communicated by some of the articles is that with the successful opening of the Carlsbad plant, the door is opened for many more plants up and down the coast of the state. This reminds me of what one state water official said at a meeting in Berkeley a few months ago. When asked about desalination, he said that we have no choice but to go with it, but, he said, we have been told not to talk about it.

The *San Diego Union-Tribune* states it in its headline on December 14, "Desalination boosts CA water outlook; Carlsbad plant brings San Diego County new local supply, may be first of many in state." <http://www.sandiegouniontribune.com/news/2015/dec/14/desalination-carlsbad-poseidon-opening/>

Here are some excerpts from the article written by Bradley J. Fikes, which quotes non other than the Speaker of the State Assembly, Toni Atkins, a Democrat:

More than 600 dignitaries gathered at the site overlooking the Pacific Ocean to mark the occasion. Tributes came from elected officials such as Assembly Speaker Toni Atkins, D-San Diego. She emphasized the plant's bipartisan support, including from Assemblyman Rocky Chavez, R-Oceanside, in whose district the plant is located.

"We've now established a model, not just for San Diego County, but for other plants, up and down the coastline, so that we can make sure California's future is bright, and that we have the water we need," Atkins said.



*The desalination plant borders Interstate 5 on one side and the Pacific Ocean on the other.
(AP Photo/Lenny Ignelzi)*

For more photos of the plant, this item from *citylab.com* by Larra Bliss on December 16 has a few

(from which the above photo is one):

“A Look Inside the Largest Desalination Plant in the Western Hemisphere-- The opening of the San Diego County facility may herald a new era in water use.”

<http://www.citylab.com/tech/2015/12/a-look-inside-the-largest-desalination-plant-in-the-western-hemisphere/420501/>

IDE Technologies Already Set To Build More in California

IDE Technologies, the Israeli company that built the Carlsbad plant is already moving ahead on three of at least eight more plants to be built in California. The *Reuters* article published on December 16 is excerpted here:

IDE plans more U.S. desalination plants after California success

JERUSALEM | By [Ari Rabinovitch](#)

Israel's IDE Technologies, which opened this week a billion-dollar desalination plant in California, is helping to plan 10 new facilities throughout the United States, the company's chief executive said on Wednesday.

Together with U.S. partner Poseidon Water, IDE has just completed the country's largest desalination plant, located on the Pacific coast in the city of Carlsbad. It will supply much needed drinking water for 300,000 households, alleviating the area's water shortage.

Yet it may just be the first of eight more plants being planned for California, of which IDE is involved in three, said CEO Avshalom Felber. IDE's others are in Texas and Florida.

<http://www.reuters.com/article/us-desalination-usa-ide-idUSKBN0TZ1LU20151216>

15 More Desalination Projects For California On the Way?

The Bradley J. Fikes article of December 13 in the *San Diego Union-Tribune*, “Finish line for desalination--County enters new era with opening of Poseidon Water’s plant in Carlsbad,” also says that more plants are to come. Excerpts:

For California, the Poseidon plant represents the mainstreaming of seawater desalination in California. Ocean desalination has long been used in nations such as Saudi Arabia, Australia and Israel, where the company that designed the Carlsbad plant, Israel Desalination Enterprises, is based. Israel's extensive use of desalination to conquer a seemingly perpetual drought has become an internationally recognized success story.

California may be poised to join the trend. About 15 other desalination projects have been proposed for the state's coastline, from the San Francisco Bay Area to Southern California. The figure doesn't include those in Mexico that would serve San Diego County to varying degrees.

And for Poseidon, successfully operating the largest desalination plant in the Western Hemisphere would demonstrate that large-scale ocean desalination is feasible in California. It could strengthen the company's case for building a similar facility in Huntington Beach.

<http://www.sandiegouniontribune.com/news/2015/dec/13/poseidon-water-desalination-carlsbad-opening/>

And the Next One Will Be Built at Huntington Beach

As reported by ABC on December 15, "Proposed desalination plant to come to Huntington Beach." <http://abc7.com/news/proposed-desalination-plant-to-come-to-huntington-beach/1124073/>. Gregg Lee writes, quoting an environmentalist expressing her opposition in the usual nonsensical statements. (excerpts):

Drinking water from the ocean was a dream that came true in San Diego County on Monday, and Huntington Beach may be next.

"We often hear, 'Why worry about the drought, why worry about water?' We're next to the largest reservoir in the world - the Pacific Ocean. The ocean is not an infinite resource," she said.

The group is also concerned with the plant's greenhouse gas emissions and the impacts on marine life.

With the San Diego plant up and running, Surfrider's are now focusing their concerns on Poseidon's proposed plant in Huntington Beach, which could soon break ground.

The company said it will wrap up the permitting process the first half of next year, and then it will head into construction late 2016. They expect the plant to be operational by 2020.

And from the *Chicago Tribune*, with a cautionary headline, Huntington Beach is again highlighted as next to go.

San Diego's 18-year wait to drink sea water may hinder deals

Dec. 14, 2015

<http://www.chicagotribune.com/news/sns-wp-blm-calif-water-fff222d0-a29a-11e5-8318-bd8caed8c588-20151214-story.html>

James Nash and Bloomberg

Poseidon Chief Executive Carlos Riva said he envisions "several more Carlsbads" along the western U.S. coast. The company already has proposed a similar-sized desalination facility 60 miles (97 kilometers) up the coast in Huntington Beach. The state's Coastal Commission is scheduled to review that application in early 2016. If approved Poseidon could go to the debt market by the end of that year. The company has said the plant could be online by 2018.

The California State Water Resources Control Board in May approved the first statewide regulations for permitting desalination plants, and Gov. Jerry Brown won approval at the ballot box last year of a \$7.5 billion water bond that includes \$100 million to help municipalities pursue such projects.

Optimism and Excitement, But Not From Jerry Brown

Though there have been few or no statements from elected officials celebrating an important step forward for the nation as represented by the opening of the Carlsbad plant, even other parts of the

country recognize it to be so. From Dothan, Alabama, *WTVY* posts a short article, “Massive Desalination Plant in California Promises More Fresh Water in Drought.” It states:

One of the world's largest desalination plants is giving hundreds of thousands of residents in Southern California an unlimited source of drinking water-- the Pacific Ocean.

The plant-- located north of San Diego in Carlsbad-- will generate millions of gallons of fresh water a day as California grapples with a historic drought.

Background, How It Works, and More

The following are excerpts from the most comprehensive article on the Carlsbad plant that I have seen. Published on December 12 by the *Sacramento Bee*, the author Dale Kasler provides enough detail for the reader to be able to understand how it works and how it got built.

Southern California desalination plant will help ease water crunch, but price is steep
<http://www.sacbee.com/news/state/california/water-and-drought/article49468770.html>

The newest weapon in the war on drought in California has arrived, an engineering marvel that will harvest drinking water from the ocean on a scale never before seen in the Western Hemisphere.

A giant water desalination plant will open this week north of San Diego, tucked behind a power plant across the street from Tamarack State Beach. It will produce 50 million gallons of fresh water each day, meeting 7 percent to 10 percent of the San Diego County Water Authority's demands and buffering the region against supply shortages for decades to come.

What's happening in Carlsbad could have implications for statewide water policy. The first major desalination facility built in California and the largest in the Western Hemisphere, it could establish desalination as a potentially major tool in solving the state's long-term water stress.

“I think we've blazed a trail,” said Sandy Kerl, deputy general manager of the San Diego water authority. “It's being watched with a lot of interest.”

The public will get its first glimpse at the grand opening Monday. Commercial operations will start later this month, with the arrival of the first flows of desalinated water at the authority's aqueduct 10 miles inland. It marks a pivotal moment in a journey that began 15 years ago, when the plant was initially proposed.

“If it's successful, as I believe it will be, others will follow,” said Peter MacLaggan, the Poseidon vice president overseeing Carlsbad.

California has just two dozen small desalination plants, most of them inland facilities that clean up brackish groundwater. In fact, only one significant desalination plant operates in the United States, a Tampa facility half the size of Carlsbad's.

Desalination has a far more accomplished track record in other parts of the world. It's practically a mainstay in the parched Middle East and generates 70 percent of Saudi Arabia's drinking water and 25 percent of Israel's. It's no coincidence that a leading Israeli desalination company, IDE Technologies, will operate the Carlsbad plant.

Now, because of drought and the specter of climate change, California's options appear more limited and desalination is getting a fresh look.

State policy encourages it: Proposition 1, the [\\$7.5 billion water bond measure](#) approved by voters in 2014, allocates \$100 million to help local water agencies build desalination plants. Several coastal communities are looking at building small desalination plants. Santa Barbara is planning to [reopen a small plant](#) that ran for three months in 1992 and got mothballed after the early-1990s drought ended.

“It’s because of the severe drought we’re in,” said city project engineer Bob Roebuck. “That’s the entire motivation. Our water reservoirs are extremely low.”

Still, it seems unlikely that desalination plants will become a major feature of California’s fabled coastline anytime soon. The Carlsbad project endured 14 lawsuits and more than a decade of negotiations and red tape before Poseidon could break ground. Construction took three years.

Along the same lines, Poseidon has been working for years to clear regulatory hurdles on a plant it is proposing in Huntington Beach, a project about the size of Carlsbad’s. It has the tentative blessing of local officials, but a green light from the state is anything but assured.

California appears to be of two minds about desalination. While state officials are offering Proposition 1 dollars for plant construction, the environmental regulations remain formidable.

Now in its final testing phase, the plant will run in tandem with a nearby power plant, which draws cooling water from the ocean. Poseidon will take the water discharged by the power plant and pump it through a series of preliminary filters. The water then will flow into the heart of the Poseidon complex, the “reverse osmosis” building, where it will filter through paper-thin, plastic-coated membranes to remove the last vestiges of salt and other minerals. When the process is complete, the leftover brine will be diluted with ocean water and sent back to sea. The purified water will be fluoridated and chlorinated in preparation for delivery to the water authority.

The entire process will take an hour, said Poseidon vice president Scott Maloni.

“It’s the only true drought-proof supply available, and it’s a half-penny a gallon,” he said.

More background on the building of the plant comes from *Businesswire.com* on December 14, in an article titled: “Nation’s Largest Seawater Desalination Plant Enhances Water Supply Reliability for San Diego County.” (excerpts):

Region Commemorates History-Making Project, Dedicates New Plant in Honor of Former Carlsbad Mayor Claude ‘Bud’ Lewis.

The Carlsbad Desalination Project included 1.5 million hours of work in Carlsbad, Vista and San Marcos, supporting an estimated 2,500 jobs and infusing \$350 million into the local economy. Project partners included the Water Authority, Poseidon Water, IDE Technologies, Stonepeak Infrastructure Partners and Kiewit-Shea Desalination. After 30 years of operation at the Carlsbad plant, the Water Authority has the option – but not the obligation – to purchase the plant for \$1. The agency also has the right to buy the facility after 10 years, though it isn’t required to do so.

For more information, go to the project website, carlsbaddesal.com, or to the Water Authority’s website, sdcwa.org. To download photos, video and materials, go to <http://carlsbaddesal.com/media> and login using the email “guest@carlsbaddesal.com” and password “desalination.”

<http://www.businesswire.com/news/home/20151214006250/en/Nation%E2%80%99s-Largest-Seawater-Desalination-Plant-Enhances-Water>

Arguments

It was 18 years ago that the idea for building the plant began. After years of planning and more years of environmentalist law suits attempting to stop it, and after just two years of construction, the plant now pumps water. But, the arguments have not and will not stop until a decisive repudiation of the last 40 years of cultural and economic dark ages policies are buried once and for all.

The Times of San Diego published a commentary by Robert H. Sulnick on December 16, “Desalinated Water Is Not a Choice of Last Resort,” making the argument for more desalination plants. Here are excerpts:

California, including both San Diego and Orange County, is in the midst of the worst drought in history. Southern California is dependent on imported water (San Diego 80 percent, Orange County 50 percent, Los Angeles 85 percent) from two increasingly unreliable sources: the Sierra snowpack at a 500-year low of 5 percent of normal and the Colorado River at its lowest deliveries in history.

Any scientist studying ocean ecosystems will tell you that pollution, over fishing, acidification, coral reef and kelp bed destruction, habitat destruction, and climate change are extraordinary, imminent threats to ocean vitality and productivity. A desalination plant is not on that list.

Orange County Water Independence, Sustainability & Efficiency — enthusiastically supports conservation and wastewater recycling as necessary parts of a balanced water portfolio. However, these by themselves can neither make up for the loss of imported water or keep up with projected population growth. Those of us lucky enough to live by the ocean should join together in supporting all forms of new local drought-proof water— including desalination.

<http://timesofsandiego.com/opinion/2015/12/16/desalinated-water-is-not-a-choice-of-last-resort/>

The opposition to both the Carlsbad plant, and to any desalination whatsoever, has been led by the Surfrider Foundation. They held their own press conference on December 14, and demonstrated once again their opposition and their intellectually deficient understanding of anything. The headline of *The Coast News* piece highlights that later point, “Desalination shouldn’t be a ‘primary tactic,’ say Surfrider officials.” A “tactic?” “The Pacific Ocean is not unlimited?” Excerpts:

The Surfrider Foundation held its own, albeit, smaller press event on Monday to express concerns over the \$1 billion plant.

“Even though the plant is online ... desalination was jumped to as a seemingly first response,” said Surfrider Coastal Policy Coordinator Amanda Winchell. “Our position is it should not be used as a primary tactic.”

Chunn-Herr and her colleagues argue that even if the plant operates without a hitch, there are still “significant” issues.

First, the Pacific Ocean is not unlimited and the energy requirements and greenhouse gas emissions of the plant make it the worst option in light of climate change. In addition, the rate increases have consequences and poor planning could preclude environmentally and fiscally preferable options from moving forward.

According to Poseidon Water officials, the facility is the first one in the U.S. to have a net zero percent carbon footprint.

<https://www.thecoastnews.com/2015/12/16/desalination-shouldnt-be-a-primary-tactic-say-surfrider->

[officials/](#)

Bay Area LaRouche PAC Event

On Saturday, December 12, the LaRouche PAC conference held in Alameda included Erik Wilson of the Face Book group My Job Depends on Ag. Here is a report on the event:

<https://larouchepac.com/20151214/bay-area-larouche-pac-event-tour-dhorizon-world-and-beyond>

On Saturday, December 12, the Bay Area LaRouche PAC conference, "End Obama's Threat of Nuclear War — Establish the New Paradigm," proved a riveting four-hour session of deliberative discussion of mankind's common aims and urgent tasks. Presentations by Lyndon LaRouche, former U.S. Senator Mike Gravel, Erik Wilson of My Job Depends On Ag, and Ben Deniston provoked an activating discussion of what the U.S. must do.

American statesman Lyndon LaRouche opened the meeting with a Q & A Dialogue with the audience, which included 40 people in Alameda, California, another 25-30 attending satellite meetings in Los Angeles and Seattle, and a live audience on YouTube.

The Bay area audience was delighted at the opportunity to speak directly with LaRouche. LaRouche focused the Q & A on the urgent necessity of uniting sane Democrats and Republicans right now to immediately remove Obama, in their respective activities to grow the two major political parties, by bringing the Obama administration to an immediate end.

U.S. Senator Mike Gravel (1969-1981) presented his current mission of breaking Obama's foreign policy, such as Obama's attempt to militarily re-occupy the Philippines in order to prepare for war with China, in a repeat of the Thucydides trap.

Senator Gravel also inspired the audience by insisting to a somewhat demoralized member of the audience that all citizens have power, which led to another audience member pointing out that one of the sponsors of House Res. 198 to impeach Obama, was Congressman Tom McClintock of California, whom the questioner had been working over for years, prompting the whole audience to understand Senator Gravel's point.

Erik Wilson, one of the co-founders of the Face Book group, My Job Depends On Ag, gave a beautiful explanation of "Why farm a Desert?", which is the title of a two-part article he wrote for the group. Going after those who claim that the Central Valley is a desert, Wilson made the point that the Valley, 300 miles long and 60 miles wide, not only has the best growing soil in the world, but the dry, low humidity climate there is the perfect growing condition for the 400 different crops produced. A paradigm for problem-solving, if, as Wilson said, Americans again think like President John Kennedy about how to build the future.

Ben Deniston concluded the meeting with LaRouche's challenge to citizens today: Defining what it means to be human and enhancing that quality by driving scientific discovery as a galactic species, on the water problem today.