

California Drought Update

For March 24, 2016
by Patrick Ruckert

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A Note To Readers

To quote the opening sentence from the first item below our part V on economics: I wrote last week that we had to wait until this week to see what impact the heavy precipitation northern California received the first two weeks of March would be. Now we know-- not much.

The last half of March has turned dry; El Nino almost brought precipitation levels up to normal; the reservoirs in the northern part of the state are nearly full, but the ones down south are still way below normal for this time of the year. The U.S. Drought Monitor shows that 34 percent of the state remains in "Exceptional Drought." To put that in context, never before July, 2014 had even one percent of the state been in that most serious category of drought. Capitol Radio put this as its headline today: "Extreme Drought 'Entrenched.'"

The partial good news for farmers and other water consumers is that the Central Valley Project and the State Water Project have announced that allocations this year have been raised to 45 percent and 30 percent, respectively. That is still less than one-half of what we all need. More details are in the report below.

Of course, the battle for sending the abundant flow of water into the Delta to storage continues, and we have a nice graphic in this report illustrating the problem.

In all, what is demonstrated is the necessity for building water management infrastructure and desalination plants. On the later, included below are reports on the desalination plants in San Luis Obispo and Santa Barbara.

Mankind is the only species that moves water to where it is needed, and the only species that can defeat "natural" disasters like drought. The last item in this week's report opens a discussion of this topic, which will be further developed next week.

The final item in this week's report is an update on the Colorado River. Things have gotten worse there this past week.

Real Economics-- Part IV

The Value of Money

This week's discussion of real, physical economy comes from the following excerpts from the March 18 *LaRouche PAC Friday Webcast*. Jason Ross discusses the difference between the real power of human

creative discovery as a measure of value and the money. As Ross states, only human beings have an economy, animals do not. The entire presentation can be watched here: https://www.youtube.com/watch?v=ansZ_kdwFqg

...the kind of economics that's generally taught today, the kind of economics practiced as a religion – well, I was going to say as a religion on Wall Street; the primary religion on Wall Street is stealing -- but, in general, the basis of thinking is that economy is about money; we can measure things in terms of money. How much is somebody willing to pay for something? That's how valuable it is. That isn't. Money doesn't measure different qualities; money doesn't measure the future potential that something is able to create. And if you base money on how much somebody's willing to pay for something, you don't distinguish between things that are good and useful versus bad and vices. People are willing to pay for heroin; people are willing to pay for other opioids if they're addicted to it. Does that mean that those drugs, as used by those people, are valuable, or worth something because they're willing to pay for them? Quite the contrary. So, we need a different way of thinking about how we can measure economic value if we're going to be human economists, instead of Wall Street magicians or Satanists.

So, the reason we have economy is that we aren't animals; animals don't have economies. Animals don't change what they do from generation to generation; they don't improve, they don't develop. We do. We create a new kind of time for ourselves. In a very real way, humanity is a totally new and totally distinct force of nature from anything else. Over geological time, geologists describe to us how the Earth has changed, or how a planet has formed; this is over hundreds of millions of years. Over evolutionary time, perhaps tens of millions of years, we're able to see transformations in the kinds of life that exists on the planet. Over biological time, we have short-term periods of the life of an organism, of its respiration, very much tied to the daily cycle of the Earth, for example. And with humans, we have a different kind of time. We create time. The flow of history isn't always the same speed.

During the Dark Ages, when not much happened, you might say that human time slowed down. And with the Renaissance, and with the ability to discover more about nature by having a more powerful way of thinking about it, and a more powerful conception of us as human beings interacting with it; you could say that time sped up. We create a certain time in that we create new eras of humanity; not in the way that geology or evolution does, but willfully by developing new principles that if we were animals, you would say this is a whole new type of life all together. We create in ourselves the change that's comparable only to large-scale evolutionary changes when we look at life in general. So, we're distinct.

As a couple of other examples, think about the difference between what you might say is a fixed object -- let's say iron oxide. Iron oxide is basically rust; it's a mineral that's rust. It's reddish brown, it's not terribly useful; but with the development of metallurgy, instead of being a deposit of some compound, it's now a resource. It's an ore from which we can create iron and steel. The substance itself, did it change chemically? It did in terms of the potential of what we could do with it. And remember, we're a force of nature; we changed what it was. It has to be thought of that way.

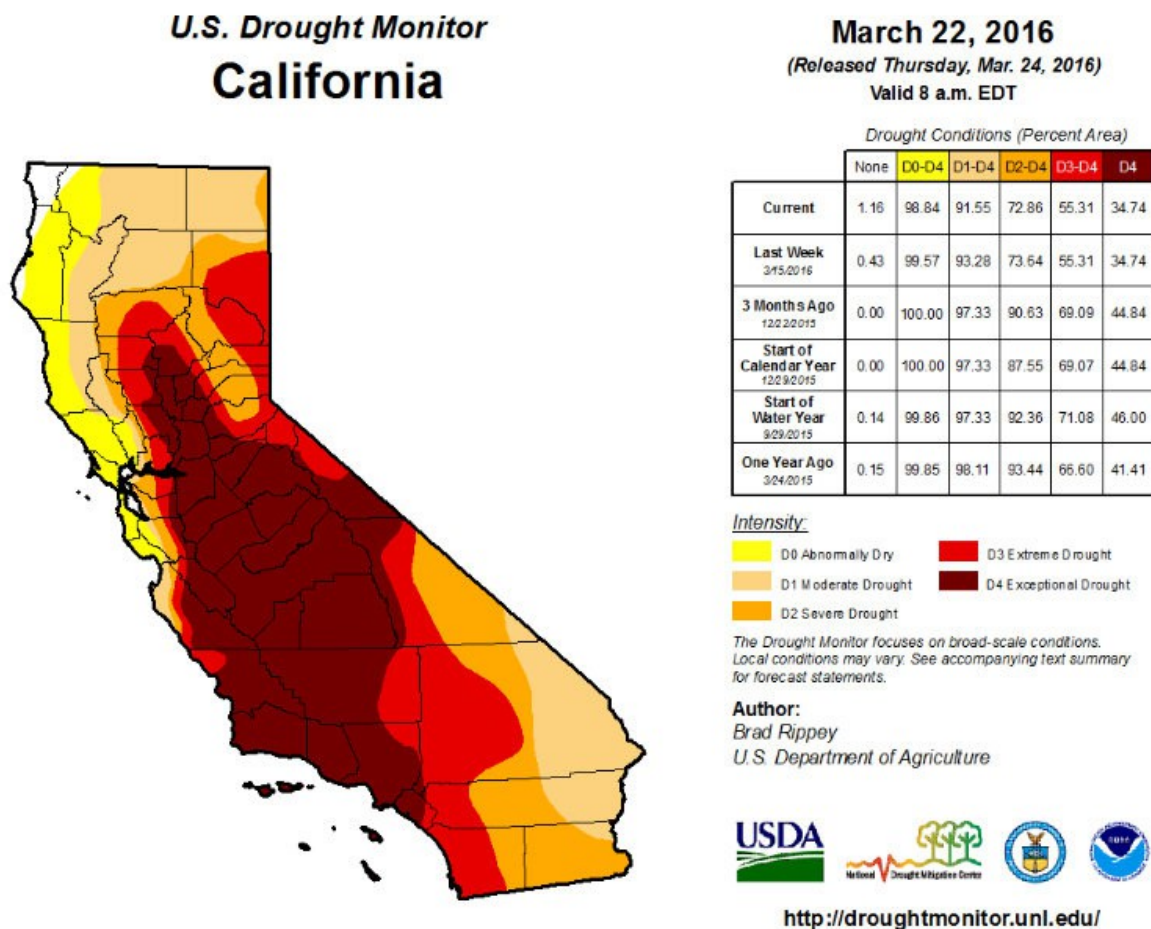
Or, what's the value of a technology? How does it change over time? In the 1400s, windmills were a great invention; they were somewhat new on the scene. They allowed pumping water, they allowed grinding grain. That's excellent; that's a breakthrough. Are windmills valuable today for making electricity? I don't think so.

So, if we're looking for a real idea of what economics is, throw away any sense of monetarism that says money made in a warehouse is just as valuable as money made in a steel plant; and instead say, "How do we foster scientific discovery? How do we foster its social implementation through technologies that physically improve our power over nature and our ability to provide improving standards of living and promote the general welfare of human beings?"

One simple rough measure, proposed by LaRouche to measure this, is the potential population density. How many people can be supported in a given area? That's a measure that is fixed for animals. For a certain kind of environment, the number of deer that can live there; deer don't change that. Human beings do. And as a rough measure of economic progress, we could take that value. What's the potential population that we're able to support?

The Drought is “Entrenched”

I wrote last week that we had to wait until this week to see what impact the heavy precipitation northern California received the first two weeks of March would be. Now we know-- not much. The article from *Capitol Radio* by Ed Joyce on March 24, “Extreme Drought ‘Entrenched’ In Most Of California,” has the best summary. <http://www.capradio.org/articles/2016/03/24/extreme-drought-entrenched-in-most-of-california/> Some quotes accompanied by the U.S. Drought Monitor for March 22:



The U.S. Drought Monitor released March 24 says from a water supply perspective, there is nearly normal snowpack to melt off and northern Sierra reservoirs are filling. But long-term to extreme drought is still "entrenched" across much of central and southern California.

The [weekly update](#) says the heavy precipitation the first two weekends of March and March 20-22, brought "incremental drought relief" in northern California, with some reduction in abnormal dryness and moderate to extreme drought.

In California, there were slight reductions in the percentage of the state in moderate (91 percent) and severe drought (72 percent), but extreme (55 percent) and exceptional drought (34 percent) remained the

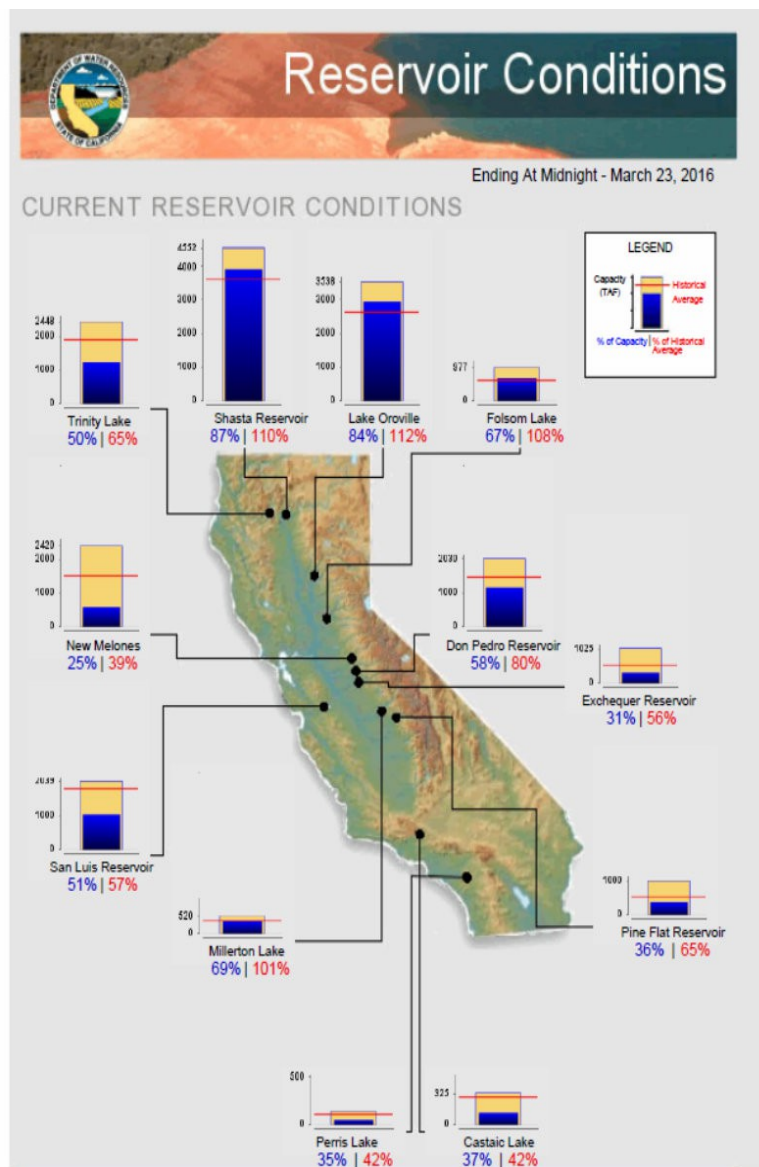
same from the previous week.

"Higher elevations have received substantial snow; the average water content of the high-elevation Sierra Nevada snowpack has increased to 25 inches, up from 20 inches from the beginning of March," according to the report. "The 25-inch snow-water equivalency translates to 90 percent of the historical average as the traditional peak snowpack date of April 1 approaches. Snowpack is roughly average in the northern Sierra Nevada, but only about three-quarters of average in the southern Sierra.

While northern California has gotten the benefit of March rain and snow, other parts of the state are still high and dry, "with long-term severe to extreme drought still entrenched across much of central and southern California, as reflected by less frequent storms during the 2015-16 wet season; still-low reservoir levels; less robust mountain snowpack; and continuing groundwater shortages."

Now for the reservoirs. As can be seen in graph from state Water Resource department, the northern reservoirs, with the exception of Trinity, are above the average level for this date. In fact, Shasta Lake, Folsom and Lake Oroville are releasing water at this time. The reservoirs in the southern part of the state, though, remain well below that average.

Here is the March 24 daily graph from <http://cdec.water.ca.gov/cgi-progs/products/rescond.pdf>



Here is more from the *Capitol Radio* article:

In terms of water supply, the report says "the favorable news is that there is a nearly normal snowpack to melt off, in addition to the fact that the state's [reservoirs](#) had already received nearly 6.5 million acre-feet of inflow by February 29. (This figure does not include any March inflow, which has been substantial in northern California.)

"In a typical recharge season, California's reservoir inflow is about 8.2 million acre-feet; thus, even without factoring in March inflow and future snow-melt runoff, California has already received more than three-quarters (6.5 of 8.2 million acre-feet) of its average seasonal allotment of surface water," the weekly report notes.

The water being released from Shasta, Folsom and Oroville is being done for flood safety. If the reservoirs are too full when, and if, a major storm arrives, serious flood damage could occur. But, as the level determined by the Army Corps of Engineers was established decades ago, the complaint is made that given better forecasting now, the release level should be raised.

As stated above, while the state has "received more than three-quarters of its annual seasonal allotment of surface water," and at least the northern reservoirs are mostly full, the water now being released is simply flowing through the Delta and into the Bay, not to storage. More on this below.

More Water for Contractors

Officials of both the Central Valley Project (CVP) and the State Water Project (SWP) announce this past week that allocation of water to contractors has been increased. The federal Bureau of Reclamation which runs the CVP announced on March 18 that contractors for its water would receive 30 percent of that they have contracted for. In 2014 and 2015 contractors received zero allocation. The Fresno Bee covered this on March 18: "Feds loosen up, offer 30 percent water allocation to Valley contractors." http://www.fresnobee.com/news/local/article66946817.html#emlnl=Afternoon_Newsletter

I briefly covered the announcement by the *Department of Water Resources* made on March 17 last week, that the allocation by the SWP would be raised to 45 percent of that requested by water contractors. Three earlier announcements this year announced 10 percent, 15 percent and 30 percent allocations. The department's statement made the point that the drought had moderated, thus more water would be available for farms and cities. The full statement is here: <http://mavensnotebook.com/2016/03/17/this-just-in-state-water-project-allocation-increased-to-45/>

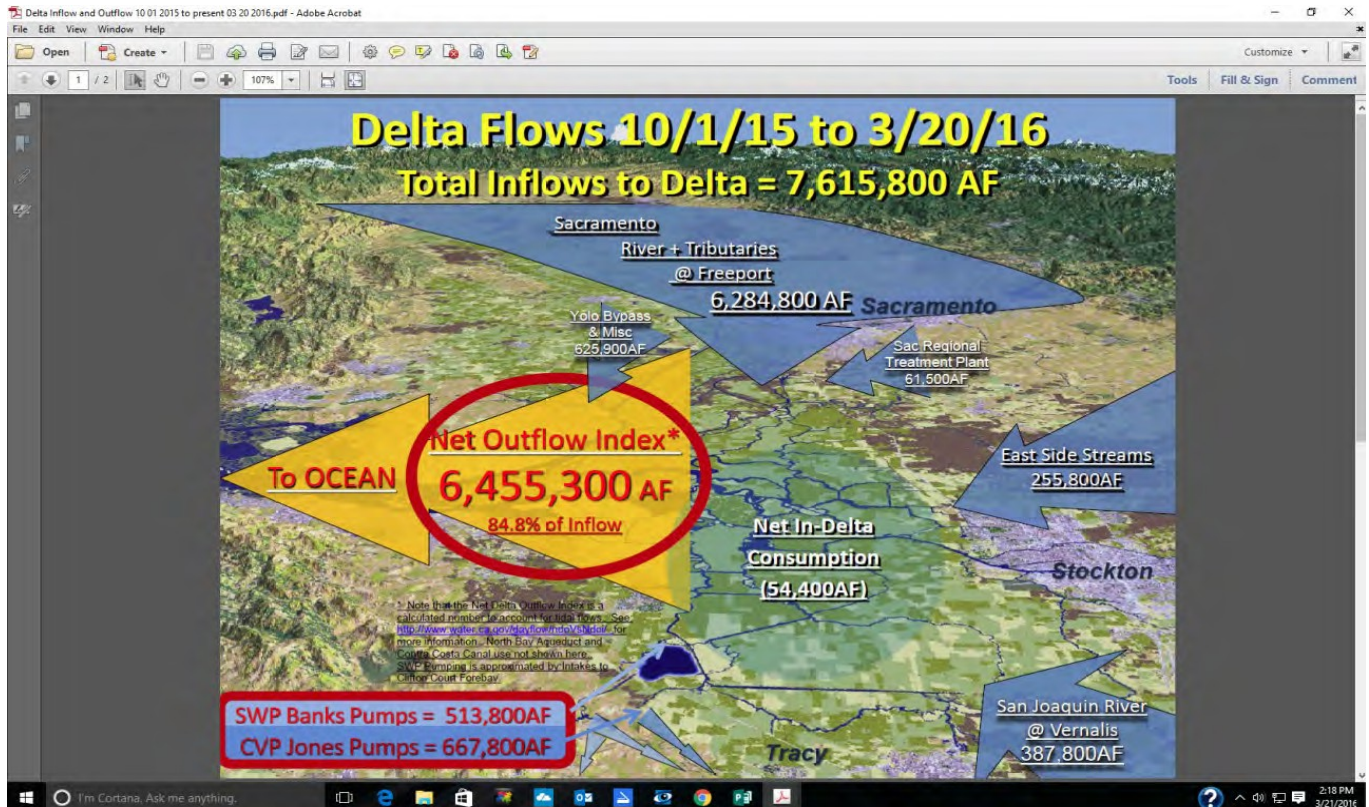
The department's statement also included a chart of the allocations from the CVP for the past decade, underlining the true condition of the state's water resources. The chart is reproduced here:

"The last 100 percent allocation was in 2006. Seven of the nine years since 2007 have been dry." SWP allocations in recent years:

<i>2015 – 20 percent</i>	<i>2011 – 80 percent</i>	<i>2007 – 60 percent</i>
<i>2014 – 5 percent</i>	<i>2010 – 50 percent</i>	<i>2006 – 100 percent</i>
<i>2013 – 35 percent</i>	<i>2009 – 40 percent</i>	
<i>2012 – 65 percent</i>	<i>2008 – 35 percent</i>	

The Water Still is Flowing into the Bay

Rather than repeat the same complaints and excuses that do not seem to change week to week, I'll just post the following graphic below, which shows the volumes of water flowing through the Delta and how much is sent to storage, and how much allowed to flow into the Bay. The graphic covers the flows between October 1, 2015 and March 20, 2016.



As posted on "The Water Agency, Inc.; Water Supply Update

<http://files.ctctcdn.com/b80dadfc301/b5185f2a-cff2-43f0-b555-b0726b613107.pdf?ver=1458598810000>

Nuclear-Powered Desalination Moves Ahead in California

A few weeks ago we reported on the plans by San Luis Obispo County supervisors to turn to the Diablo Canyon nuclear power plant for its water. The plan is moving ahead as reported on March 22 by *The Tribune*. <http://www.sanluisobispo.com/news/local/article67677597.html>

Diablo Canyon desalination expansion plans move ahead

County supervisors agree to spend \$900,000 to begin groundwork for a pipeline to connect to Diablo Canyon's desalination plant

Expansion of the desalination facility could produce 1,300 acre-feet of water for the South County

A 7-mile pipe would connect the desalination plant to Lopez Lake's water system



Diablo Canyon Nuclear Power Plant (photo: Joe Johnston MCT)

One more item on the desalination front: Santa Barbara demonstrates a lesson on the question of long-term planning and the building of redundant infrastructure. Following the drought of 1987-92, Santa Barbara built a desalination plant. As it was completed the drought ended and the plant was mothballed. In recent months the city decided to put it back on-line, at a cost of \$55 million. As excerpts from the article in the *Santa Barbara Independent* on March 24 demonstrates, whether done consciously or not, the city does have this fall-back option for what it will soon be facing. The article, “Dry March Brings More Water Torture,” is by Nick Welsh. <http://www.independent.com/news/2016/mar/24/city-water-czar-hot-seat/>

Santa Barbara city water czar Joshua Haggmark has managed to at least appear upbeat and positive throughout one of the worst droughts in California history, but this Tuesday, he looked every bit as beleaguered as anyone in his position must feel. With the end of the month right around the corner and no sign of rain on the horizon, the much anticipated “Miracle March” rains promised by El Niño have not delivered. “As of the end of March, this is the new drought of record,” Haggmark said. “We have now gone into completely new territory.”

Haggmark expressed guarded optimism that Santa Barbara can make it into 2018 if residents ratchet up their conservation from 30 percent to 35. The resulting loss of water sales will punch such a hole in the city’s water revenues that rates, Haggmark said, will have to go up by 11-22 percent. The city’s backup Gibraltar Reservoir is so silted in that it can provide only enough supply for one and a half months. If that weren’t bad news enough, one of the city’s seven wells crashed after three years of nonstop use.

City Hall’s ace in the hole remains the desalination plant now under radical reconstruction efforts budgeted to cost \$55 million. In order to secure the permits necessary from the Regional Water Quality Control Board, City Hall agreed to study more environmentally friendly alternatives to the old-school, open-ocean-intake technology deployed when the facility was first built at the end of the last drought in 1992.

The Road to Hell is Paved by the Refusal to Develop

As we are now in the fifth year of the California drought, and the El Nino has not delivered us from it, it is perhaps time to step back and look at the bigger picture. Our report above on real economics informs us

that mankind is the only species that has an economy and that our well-being depends upon using our unique power to transform the world around us-- build what we and future generations require, like great water projects. When we do not do that, then events like El Nino produce, for good or for bad, consequences that make us the subjects of the whims of nature, and not a species that determines its own destiny.

The thieves of Wall Street and London, the financial oligarchy, which says that mankind is a cancer on the Earth and his numbers must be reduced, have been busy this week promoting policies and ideas that they think are appropriate for a world with far fewer people. First they warm you up with scary scenarios. Here is one from the *Los Angeles Times* on March 22, under the headline, "Will the world's next wars be fought over water?"

<http://www.latimes.com/world/global-development/la-fg-global-water-oped-story.html>

California's ongoing drought is one sign that we have entered some uncharted and uncomfortable territory. Of the fears that have risen alongside a warming planet, perhaps none have attracted more attention than the "water wars" hypothesis.

This hypothesis says that increased water shortages around the world will lead to war between states.

Following that introduction comes the claim that all the droughts and other natural phenomenon that cause problems is all the fault of mankind, while ignoring the great Russian/Ukrainian scientist Valimir Vernadsky, who in the 1930's used the term noosphere to describe a world in which the most powerful geological force on the planet was man's mind, and how a human population of 35 billion should be a welcome addition to mankind's power over the universe. Back to a quote from the article:

For years now, Earth scientists have been debating whether we should rename the geological epoch in which we live, whether we should drop the term Holocene (the period since the last ice age) and substitute for it the term Anthropocene. As the root of the word Anthropocene suggests, the scientists' basic idea is that human interference in Earth systems has become so pervasive that we have, in effect, a new planet on our hands. Indicators such as climate change, ozone depletion, massive sedimentation, and ocean acidification are proof that human interference in Earth systems already has altered how the planet works.

And, finally, the author goes on to blame the war in Syria to the drought that the nation had suffered between 2007-2010, conveniently forgetting that the war that broke out two years after the end of the drought was instigated, financed and fought by foreign nations and mercenaries.

And then we have this article from *The Guardian*, in which the headline hammers on the theme that it is all mankind's fault:

Worst Mediterranean drought in 900 years has human fingerprints all over it

A new study shows that the current Mediterranean drought is likely the worst in 900 years, probably due to human-caused intensification <http://www.theguardian.com/environment/climate-consensus-97-percent/2016/mar/18/worst-mediterranean-drought-in-900-years-has-human-fingerprints-all-over-it>

Underlining the point that serious human disasters from drought and wars do face us daily is this report from the *Executive Intelligence Review* on March 22:

Millions of Africans Face Life-Threatening Food Shortages from Drought

March 22 (EIRNS)—A Bloomberg article today penned by Whitney McFerron and Frank Jomo, has described the dire food shortages that have emerged in parts of Africa due to an unprecedented drought. They report that "the corn that is a food staple for much of southern Africa is now so expensive it has

become a luxury many can't afford, after the worst drought in three decades damaged crops from Ethiopia to South Africa."

The article cited UN Food and Agriculture Organization (FAO) data which shows that, of the 34 countries that require food aid this year, 27 are in Africa. The World Food Program says that as many as 50 million people may eventually be affected in the region. Ten million more are at risk in Ethiopia alone because of drought, along with millions more in conflict-ridden countries, like South Sudan and Central African Republic.

In contrast, and making it possible to relieve the hunger in Ethiopia, this item demonstrates that mankind can alter the course of the affects of "natural" disasters by building infrastructure. The excerpt is from the *Executive Intelligence Review Strategic Alert Service* of February 23.

http://www.larouchepub.com/pr/2016/160223_chinese_rail.html

Ethiopia is currently suffering from one of the worst droughts in its history, but unlike 30 years ago, hundreds of thousands of people are not dying of starvation. The contrast can be attributed to two important changes. First, the current government has aggressively implemented an economic development policy which, in the last decade, has lifted millions of people out of poverty and made Ethiopia one of the fastest-developing economies in Africa. Second, an over 800-km-long railway has been built by the Chinese, connecting the port of Djibouti and Addis Ababa, the Ethiopian capital.

Colorado River in Worse Shape Than Last Week

In last week's report the article cited stated that there was less than a 50 percent chance that restrictions on water deliveries to the five states that depend upon it would occur in 2018. Now, the managers are saying that it most likely that those restrictions will go into affect in January, 2018. More than one million acre-foot of the Colorado feeds into the supplies of the Metropolitan Water District of Southern California.

Here are some excerpts from the article from the *Las Vegas Review Journal* of March 14, by Henry Brean.
<http://www.reviewjournal.com/news/water-environment/historically-dry-february-could-lead-first-ever-shortage-declaration-lake>

'Historically dry' February could lead to first-ever shortage declaration at Lake Mead

Federal forecasters have downgraded their projections for the Colorado River after an unusually hot, dry February that has increased the likelihood of a first-ever shortage declaration at Lake Mead.

Forecasters are now predicting the arrival of shortage conditions at the nation's largest man-made reservoir in January 2018.

Just a month ago, forecasters expected Lake Mead to narrowly avoid the shortage line for at least the next two years. But Paul Miller, a senior hydrologist with the National Weather Service's Colorado Basin River Forecast Center in Salt Lake City, said that all changed after a "[historically dry](#)" February in the mountains that feed the Colorado.

Some monitoring sites in the region logged their lowest February precipitation totals on record, Miller said.

Barring a sudden turnaround, 2016 will mark the 13th year of below-average flows on the Colorado River since 2000.

In March of that year, Lake Mead was close to full with a surface elevation of 1,211 feet above sea level. The surface of the reservoir has fallen almost 130 feet since then, and forecasters expect it drop another 10 feet by this time next year.