

## THE SUN IS GETTING LAZY

# Mankind Can Now Control The Global Water System

### Part 1 of 3

**T**he LaRouchePAC New Paradigm for Mankind Weekly Report for July 9, 2014 was hosted by Megan Beets, and joined by Ben Deniston and Liona Fan-Chiang, all of the LPAC Basement Science Team.

Beets began by establishing the context for the discussion within the recent weeks' acceleration of the breakdown of the British Empire system, and the coming into being of a potentially new world system. She then turned the discussion over to Ben Deniston. The video is posted at [www.larouchepac.com](http://www.larouchepac.com).

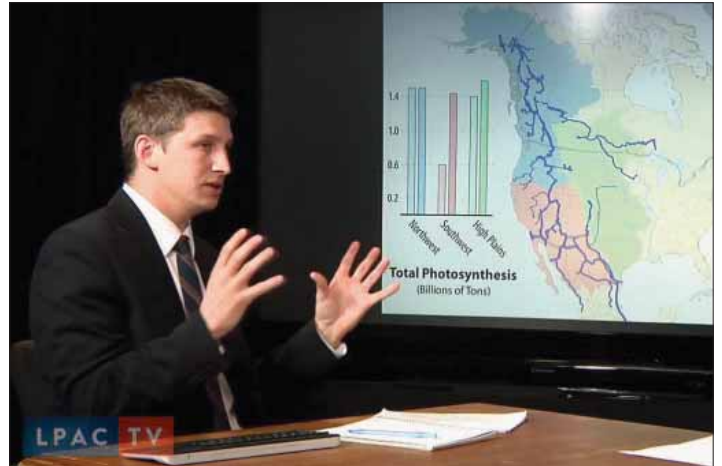
**Ben Deniston:** Today, I want to discuss getting more at some of the implications of Lyndon LaRouche's Four Laws (See the box, p.2), I because as you said, we have the growing potential for a completely new system. There's already recognition and motion around the world that what's happening now doesn't work, this system is a genocidal system, the people running it are trying to accelerate the genocide to keep their system, and it's the potential for something completely new.

I think it's critical to keep coming back to Lyn's "Four Laws," that policy as a whole, because I found, just in talking with the population generally, people in D.C., and frankly even a lot of scientific layers, so-called scientists, that the level of thinking is way too small. A lot of these people have been too practical, too small in their thinking, and it's because people have been conditioned in 40 years of the zero-growth system. We haven't done anything; you know, we landed on the Moon in the '60s and then, what since? People have just accepted—now it's been generations of this, so people have grown up in this; they've grown up in the idea of no growth, no progress, etc.

So, what Lyn is putting on the table, and the role of our organisation is absolutely critical I think, in pushing the frontiers to where mankind can and must go in response to this crisis. In his Four Laws, he talks about Glass-Steagall, number one, which has to be coupled, number two, with a national banking system; that needs to happen immediately; then, issue credit to grow the economy, Federal credit for a major rebuilding of the U.S. economy, major jobs program, is the third point; and the fourth point he talks about is the need for a fusion driver program.

### The Global Water Crisis

So I'm going to come back to that fourth point, from the standpoint of the water crisis, which is a subject we've discussed a lot, and I want to start with a global overview of the water crisis. Because despite what some Congressmen have said, water is a single, global system. In response to some of our organising in Washington, D.C., one Congressman said, "well, I think we need to solve the California water crisis with California water." But where does California water come from? It doesn't come from California. It comes from the whole Pacific Ocean; it comes from the whole global system. So there's a lot of need for better scientific understanding of



Ben Deniston: "We have an indication that mankind can begin to actually modulate and manipulate flows of moisture in the atmosphere, and we can begin to control when it falls and where it falls. . . ."

what we're talking about here.

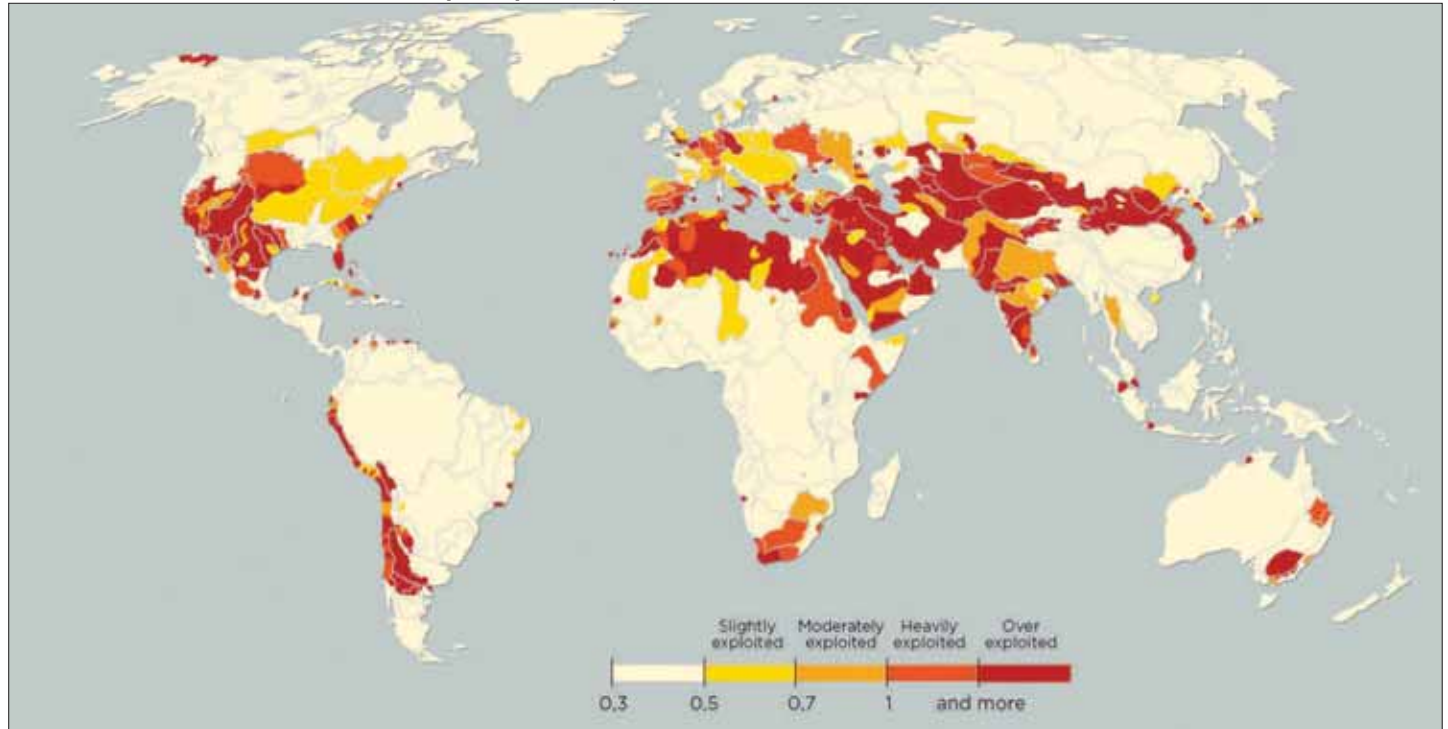
So Mr. LaRouche has repeatedly emphasised, the water system is a single, global system; you have regional components, and you can look at the interaction of components, but we're at the stage now when you start looking at it as a single, planetary system.

The crisis, I think most people have an intuitive sense, is pretty staggering. I mean, you have 2.5 billion people without access to sanitation because they don't have standard, enough regular water supply: 2.5 billion people, it's a huge figure. Here's one map that just shows the water basins, the river basins, where you have what they call "water stress"—the water supply available in these regions is not enough to support the human economic activity occurring in those regions (**Figure 1**). So this gives a general, quick image of where a lot of the crisis is—and it's major. You can see, it covers much of the world.

At the same time, there are figures saying that about 800 million people don't have access to water at all, clean drinking water. Now, Mr. LaRouche's intelligence magazine, *EIR, Executive Intelligence Review*, has looked at that a little more closely and their view is that, if you set the standards a little bit higher, about actually having access to water in your home in a reliable way, something you'd expect as a modern standard of living today, it's more like 4 billion. So you might have some well plunked down in the middle of some village, or maybe on the outskirts of some village, and people would say, "Okay, all those people in that village now have access to water"—but they have to spend all their time carrying it back and forth. So, around 4 billion people with a lack of access to reliable, clean, safe water in their homes, 4 billion—it's a huge number; 2.5 billion without access to sanitation.

I was looking at some other figures: about a quarter of the current water use comes from groundwater, about one-

**Figure 1**  
**Global Water Stress Indicator (WSI) in Major Basins**



fourth the global water use, something in that range. Different organisations might have different estimations, but something around that figure. Now some groundwater supplies are fine, they get recharged with rainfall and there's nothing wrong with using it. In other regions, the rate of refilling of groundwater can be relatively slow, and you have a major, building crisis, where a number of regions are drawing down the water at a faster rate than it's being replenished. So these represent potential major crisis points, because the rate of activity of the groundwater cycle is not quick enough to sustain the growing rate of human economic activity.

And then we have also discussed, specifically, the crisis in the West; in California, we have a major drought right now. It's getting worse. The Central Valley groundwater, for example, the aquifer there is depleting, and it's probably going to deplete faster because there's not as much rainwater in river flows. Here's an image of the snowpack in Winter, where a lot of the freshwater comes from (**Figure 2**). This was taken by some NASA observations: January 2013; January 2014. So, it's quite dramatic, the lack of snowpack [in 2014] that provides much of the freshwater for California.

Because of this, then, people are going to be forced to either abandon agriculture, not have enough water, or be forced to go from accelerated use of the groundwater in the Central Valley Aqueduct, which has already been consistently depleting, year, after year, after year; they're going deeper and deeper and deeper to get the water. So it's a major crisis.

And just in the past couple weeks, there's been a lot of hope that some coming weather pattern changes might help break the drought, specifically the El Niño effect, where you have a periodic cycling of warm ocean water, which tends to bring more moist air and rainfall to certain regions of the United States. And a lot of people have been hoping very much that a big El Niño will help break the drought. And at this point, no one's going to sit here and forecast exactly what's going to happen, but the most recent signs are now that the El Niño is weakening. It's actually a weak El Niño, so the probability of it bringing a lot of water is significantly reduced.

So the point is, this is a major crisis globally. We've discussed a lot the crisis in California, Texas, and the West, and there's no immediate sign that it's going to be alleviated, just on natural conditions. So this is what we're facing.

## Lyndon LaRouche's Four Laws for Recovery

(1) Immediate re-enactment of the Glass-Steagall law instituted by U.S. President Franklin D. Roosevelt, without modification, as to principle of action.

(2) A return to a system of top-down, and thoroughly defined as National Banking.

The actually tested, successful model to be authorized is that which had been instituted, under the direction of the policies of national banking which had been actually, successfully installed under President Abraham Lincoln's superseding authority of a currency created by the Presidency of the United States (e.g. "Greenbacks"), as conducted as a national banking-and-credit-system placed under the supervision of the Office of the Treasury Secretary of the United States.

For the present circumstances, all other banking and currency policies, are to be superseded, or, simply, discontinued: as follows. Banks qualifying for operations under this provision, shall be assessed for their proven competence to operate as under the national authority for creating and composing the elements of this essential practice, which had been assigned, as by tradition, to the original office of Secretary of the U.S. Treasury under Alexander Hamilton. This means that the individual states of the United States are under national standards of practice, and, not any among the separate states of our nation.

(3) The purpose of the use of a Federal Credit-system, is to generate high-productivity trends in improvements of employment, with the accompanying intention, to increase the physical-economic productivity, and the standard of



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**Figure 2**  
**California Snowpack in Northern California and Nevada**



## The Terrestrial Water Cycle

Now, Mr. LaRouche has said, what we have to do is go to a higher energy-flux density program. We need to increase the energy-flux density of the U.S. economy and the economies globally, to ensure that mankind can manage and control the water cycles and the water systems needed to sustain human life. And we've been discussing this, and working this through, and as we cited in Mr. LaRouche's four-point program, his Four Laws, all of these policies should be subsumed and seen from the standpoint of the scientific work of Vladimir Vernadsky, in looking at the role of mankind as a more powerful force than the biosphere, and a more powerful force than the Solar System as a whole, potentially, in the near future.

And what I'm going to get at, in looking at how mankind has to go into the future by addressing this water crisis, is mankind beginning to take over the role of the Sun on the planet Earth; that mankind must actually rise to the level of the activity of the Sun itself in terms of having that level of influence and control over the global water system on the planet.

So now, to get into that, we have to have a sense of the top-down view of the global water system. So here is a schematic of what I would call the terrestrial water cycle (**Figure 3**), because as soon as you're talking about water, you have to start talking about cycles and processes that have cyclical characteristics; it's not just a resource you're using. All of the water supplies on land are not just stores, they're cycles, they're processes. And all of the activity on land, all of the snowpack, the precipitations, the lakes, the rivers,

the groundwater, all of it depends, ultimately, on the evaporation of ocean water, and the precipitation of that evaporated ocean water over the land.

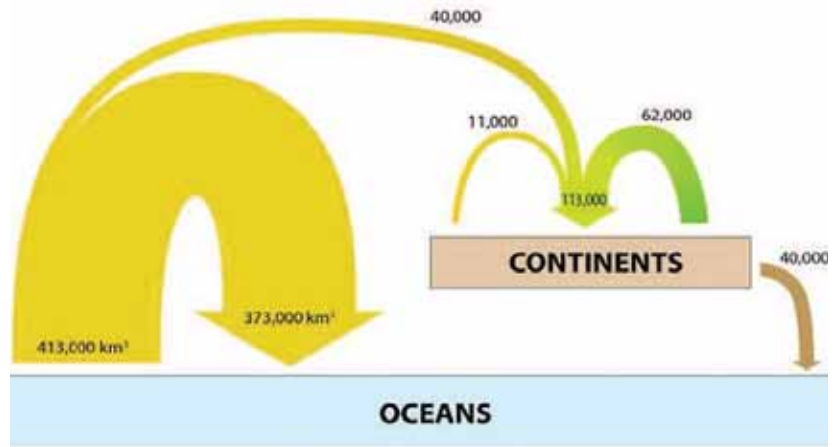
And this is a schematic, where the width of the arrows is all to scale, to show the yearly average flows of these different water systems for the planet as a whole. So the Sun evaporates a huge amount of water from the ocean, but then, as you can see, the vast majority of it just then falls right back into the ocean. On average, about 10% of this water evaporated from the ocean precipitates, or falls as rain or snow over land, over the continents. And that becomes the basis for the entire terrestrial water cycle thus far.

Once the water's on land, you have a very significant factor, which is the role of plant life itself. Once the water's on land, some of it will evaporate again and fall again as rain, so you can see this kind of added cycle, here on the left; but an even bigger factor is the role of plants directly, in kind of boosting the cycle, taking water that was brought onto land, utilising some of it in photosynthesis, but then putting water back up into the atmosphere, to fall again as rain on land. And it's only recently that there have been some really authoritative studies on this, and those studies indicate that plants actually play the largest role, so far, in creating rainfall and precipitation on land. Over half of all the precipitation, on average, over the continents, we can attribute to plant activity.

So it's a very significant factor; all these values here are given in cubic kilometers per year, and you can see the relative values of the different ones.

And then the cycle, quasi-cycle, closes off with the ocean

**Figure 3**  
**Terrestrial Water Cycle**



living of the persons and households of the United States. The creation of credit for the now urgently needed increase of the relative quality and quantity of productive employment, must be assured, this time, once more, as was done successfully under President Franklin D. Roosevelt, or by like standards of Federal practice used to create a general economic recovery of the nation, per capita, and for rate of net effects in productivity, and by reliance on the essential human principle, which distinguishes the human personality from the systemic characteristics of the lower forms of life: the net rate of increase of the energy-flux density of effective practice. This means intrinsically, a thoroughly scientific, rather than a merely mathematical one, and by the related increase of the effective energy-flux density per capita, and for the human population when considered

as each and all as a whole. The ceaseless increase of the physical-productivity of employment, accompanied by its benefits for the general welfare, are a principle of Federal law which must be a paramount standard of achievement of the nation and the individual.

(4) "Adopt a Fusion-Driver 'Crash Program.'" The essential distinction of man from all lower forms of life, hence, in practice, is that it presents the means for the perfection of the specifically affirmative aims and needs of human individual and social life. Therefore: the subject of man in the process of creation, as an affirmative identification of an affirmative statement of an absolute state of nature, is a permitted form of expression. Principles of nature are either only affirmation, or they could not be affirmatively stated among civilized human minds.

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run-off and outflow of water back into the oceans. Which as you can see here, generally matches the input. Evaporation of ocean water participates in continental cycles, gravity brings it back down into the ocean, you kind of have the concept of a closed system. It's obviously not this simple, but this is just to give an idea.

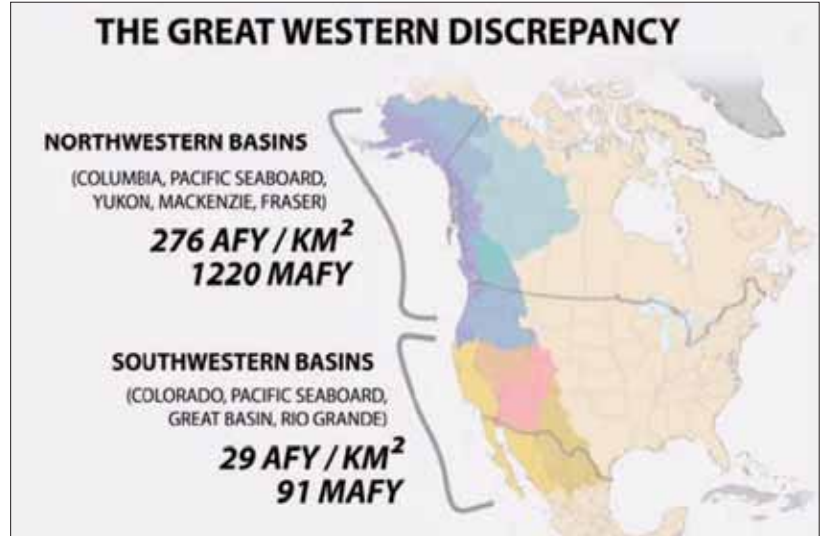
Now, mankind so far has played a significant role, when mankind is allowed to, and is not held back by imperial systems and environmentalists—mankind has played a significant role in improving and managing these existing cycles, taking the existing role of solar activity in putting moisture into the continental system and improving what that water does while it's there. And the highest expression of this that I've seen, is the design for the NAWAPA system, which is something that fully could have happened, but was blocked from ever being developed by the whole environmentalist paradigm shift (see <http://larouchepac.com/infrastructure>).

Keep this idea of an input/output cycle in your mind, for a second; you're looking at water going in, and then participating in the terrestrial cycles on the continents, and then flowing out. We want to pose the question of what does it do when it's there, because if it's not doing anything, there's no point to the cycle. And, how do we improve what it does, how do we make it more productive?

## Case Study: North America

The continent of North America is an interesting case study, because you have what we've been discussing a lot on this show, which is a major crisis now—a dramatic discrepancy in the water availability in the western half of the continent (**Figure 4**). Not to get caught up in these figures in particular, but, if you divide the northern half of the West and the southern half of the West, and you just look at how much water is available, you can see that the total water flow, precipitation and river run-off—you measure it by run-off—the output in the northern half is about 10 times higher than the southern half, including in per-area terms. So the amount of water availability in the North, per sq

**Figure 4**  
**The Great Western Discrepancy**

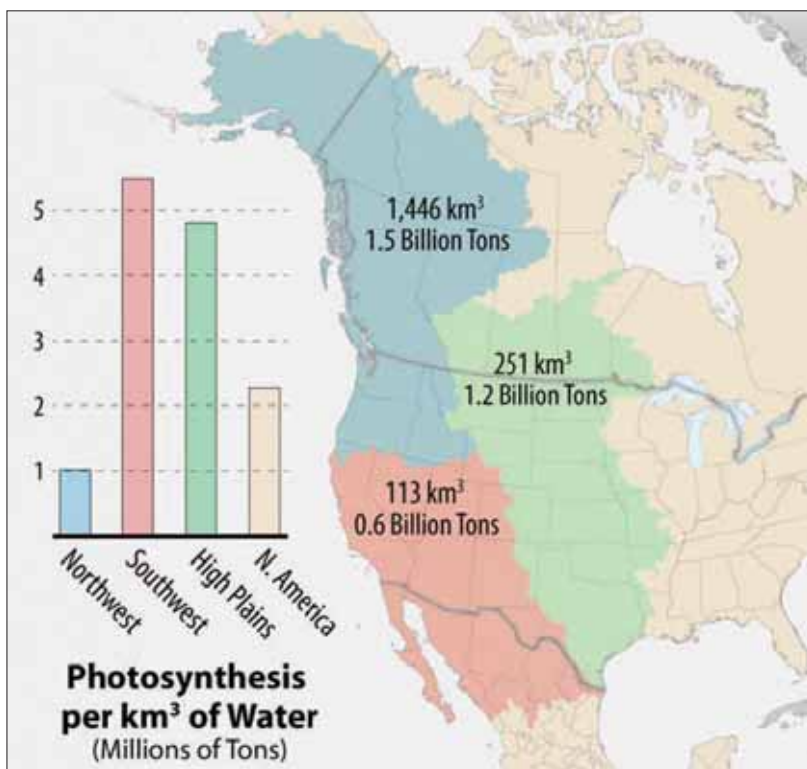


km, or per mile, is about 10 times what's available in the South. So you have this huge discrepancy in the natural state of the water system of the North American continent.

So what we want to look at then, is how productive are these systems from that standpoint (**Figure 5**). We were playing around with some figures, and just to give, frankly, what amounts to a “back of the envelope” calculation—but the right order of magnitude and concepts—we were comparing the amount of water flow to the amount of productivity of that water, the amount of photosynthesis, the amount of creation of new plant life, which is one of the critical functions of water in the whole biosphere system; so that seems like a decent proxy to measure the productivity of water.

And what we found is that the Northwest, this northern half that we were just referencing, which has 10 times the water availability of the Southwest, has a relatively very low amount of productivity per amount of water. The absolute values are given

**Figure 5**



on the map, and the photosynthesis per amount of water is given on the chart on the left there. So, you can see the blue area of the Northwest is about 1 million tons of plant life, of new biomass, of new photosynthesis per cubic km of water flow. Those are the terms of measure, and the point is the relative comparisons: Where the Northwest is only 1, the Southwest is over 5 times higher. The water is actually 5 times more productive in the Southwest, than in the Northwest, and humans have a huge influence in that, through irrigation, through management. This is an example of managing an existing water cycle and improving the use and productivity of that existing cycle.

And you can see that also, if you take the continent as a whole, North America, the Northwest is still less than half of the productivity of the whole continental system, and much of this is because of the temperature and because of the sunlight, and also because a lot of the water falls right along the coast and runs off into the ocean. So the amount of water going up there is just not able to do a whole lot; it's too cold a lot of the time, you're at a higher elevation, so you don't get as much sunlight. So overall, the thing is relatively much less productive, per amount of water, than the continent as a whole, and especially than the Southwest.

**To be continued...**