

NAWAPA XXI Will ‘Bend’ the Water Cycle; Save Calif., Texas

by Megan Beets

April 23—At present, 63 million Americans, living in Texas and California—20% of the U.S. population—are in daily worsening conditions from drought, and continuation of the economic policies and thinking which created the vulnerability to this kind of devastation to begin with. The Western states water crisis is a national emergency. The perspective to solve it was presented in detail for Texas and California, by Megan Beets, of the LaRouchePAC Science Team, on the April 23 LPAC-TV weekly New Paradigm for Mankind program (<http://larouchepac.com/>). She discussed, with illustrations, the impact of NAWAPA XXI on the continent. The discussion included Lyndon LaRouche, joined by Jason Ross, also of the Basement Science Team. We begin with the conclusion of Ross’s introductory remarks, followed by Beets’ presentation.

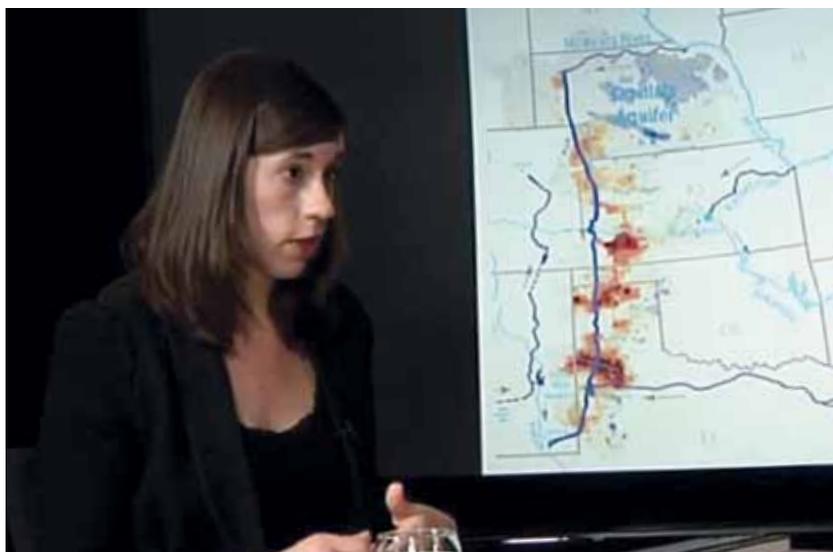
Jason Ross: . . . Today, to really be safe from these vagaries of nature and long-term droughts, we need to be able to modify the weather, we need to be able to control the continent, and the urgency of this is made even more clear by the fact that while some people might think that eventually this drought will end, it might not. I mean, really, how much time had modern civilization existed in California, to measure water flows and things like this? A few hundred, a couple hundred years? How old is the Earth? How long are the long-term cycles of water, of rainfall? Some scientists in California believe that actually, the most recent couple of centuries were the wettest in the past 7,000 years. If this is true, the drought is not something that will go away, and we have no

alternative, except for the very wonderful chance to reshape the continent to our needs.

I think we should get into some more detail on that.

Megan Beets: Okay. I just want to pick up on the point you made, Jason, about the natural action of life: that throughout the period of biological evolution taking place on the planet, life has developed as a system to higher and higher degrees of complexity, and has exerted its independence from the surrounding environment, which is dominated by the principle of non-life, or the lack of the principle of life. You had the moving of life onto land, developing new biological systems, to actually be independent of the impingement of nonlife on it.

Human beings do this too. Human beings exert the principle of creative discovery, to reshape the environment, and reshape both the nonliving and the living. That’s natural, and that’s exactly what NAWAPA, or the North American Water and Power Alliance, was de-



Megan Beets of the LaRouchePAC Science Team elaborated the NAWAPA XXI concept for California and Texas, on the April 23 LPAC Weekly Report.

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FIGURE 1

The NAWAPA System: Overview



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signed to do. And I can just show our viewers the concept of the North American Water and Power Alliance that was developed in the early 1960s (**Figure 1**). This was a decade when you had Kennedy in the Presidency; you had the idea that man can, and should exert power and take action to change nature, to make the conditions of life more suitable, not only for himself, and those now living, but the perspective was to do this for decades, or even longer, into the foreseeable future, for the generations yet to come.

Why was that the idea with Kennedy? Well, you see the legacy of what was done with Franklin Roosevelt and the Four Corners projects [the TVA, Grand Coulee Dam, Hoover Dam, and future projects for the Northeast]: Man had just proven that he could do this on a larger scale than ever before in history. You also see something funny, which was the [atomic] powers exerted during World War II, where, although it was for destructive causes, you had the most enormous powers exerted by man ever before in history, and the idea, moving into the decade of the 1960s, was that these enormous powers at mankind's fingertips, could actually be utilized for the good of all of mankind.

Continental Water Cycle

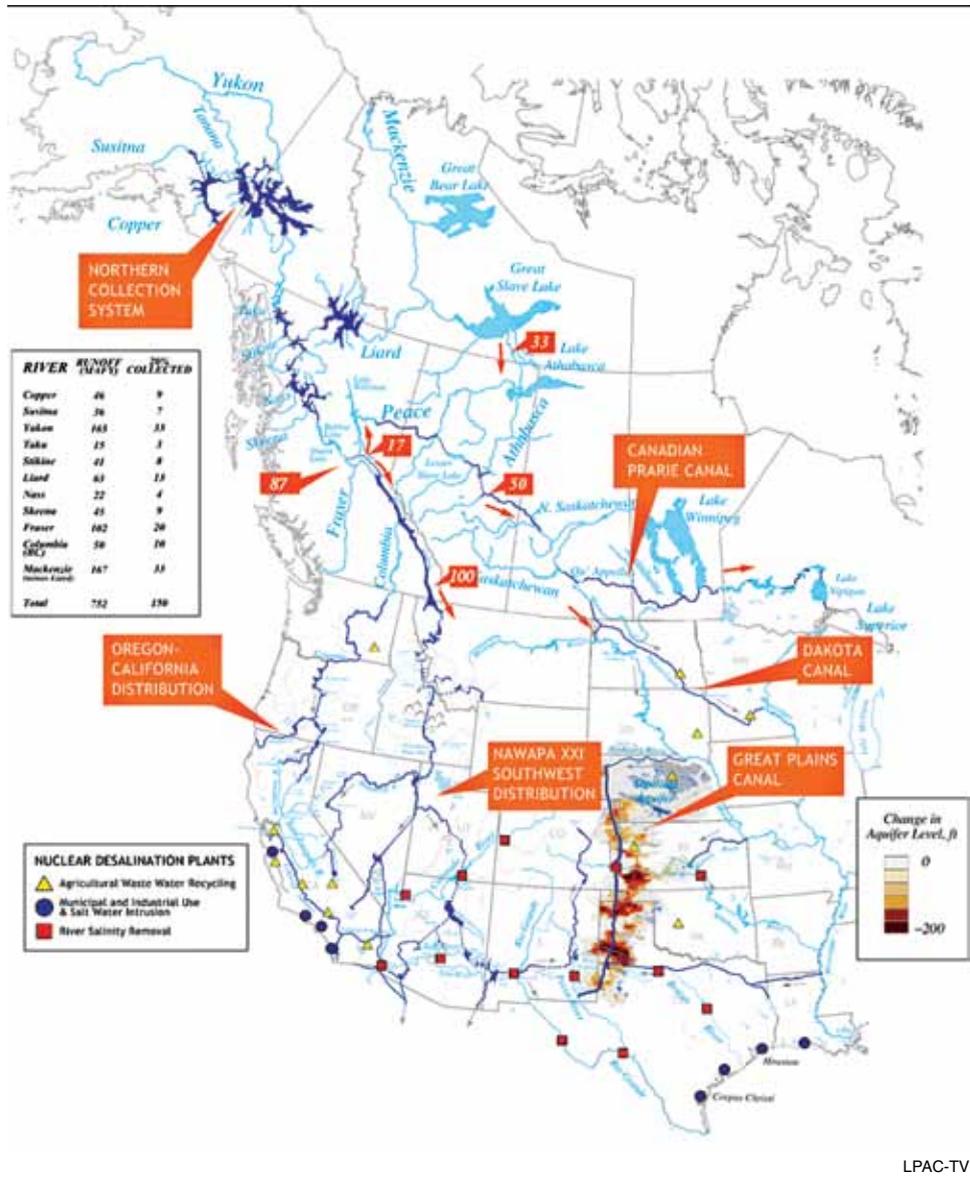
And so you had the conception of the NAWAPA project, which was designed to address the fact that we had great developments taking place in the Western states of the United States: We had new dams being built, we had created the Imperial Valley and the great agricultural potential of southern California and the West, throughout the period of the Depression and FDR's Presidency. But it was recognized that if man continued to develop and grow in this region, at the rate that he could, that he had the potential to do, there was simply not enough water in the Southwest to support this. There would be no re-allocation of water within the region, that could possibly meet the needs of a growing and expanding mankind.

And so, the original project said, okay, we're not going to look at managing the water cycle of the region.

You take one evolutionary step forward, and you look at the water cycle of the entire continent. So, if we look at the water cycle of the continent, we see a couple of things. One is that the water, as it's distributed across the North American continent, is actually in a great imbalance. The design as given to us by nature is actually very poor. And that's for a couple of reasons: One of which is that if we take the run-off from the Western part of the North American continent, it runs off into the Pacific Ocean. Roughly two-thirds of this, when it falls again as rain on the continent, doesn't fall in the "Lower 48," but falls up in Alaska, Yukon, and along the coast of British Columbia. So the water that had come from the continent now falls again up in the north, where it falls as rain or snow and remains frozen up there, or, in the Spring melt, runs back off into the ocean. That's one imbalance.

The other imbalance is that if you take the amount of water which exists in the different regions of the continent, there's roughly eight times as much water per square kilometer on the land of the Northwest, going down in Washington State and Oregon, *eight* times as much water per square km, in that part of the land, when compared to the Southwest, including California, New

FIGURE 2
The NAWAPA System: Detail



Mexico, Arizona, Texas, Colorado, and so forth.

Now, there's another imbalance, which the NAWAPA project actually utilizes to our great advantage, and that comes up in the issue of the productivity of the water. So, if we look at the water that exists on different parts of the continent, it doesn't always do the same amount of work, and we can measure this in a term called "net primary production," and what that measurement looks at, is, what is the rate at which the biosphere, the plants, are actually using the process of

photosynthesis to create new biomass? So it is a measure of the upshift of the energy potential on the continent, because you're measuring how much life is taking the nonliving elements, and turning them into a higher chemical potential by creating new biomass out of them.

So, if we look at how much water is participating in the process of photosynthesis on different parts of the continent, the water which exists in the Southwest region, even though there's much, much less of it, each drop of water is more than *five times* more productive, than the water up in Alaska and Yukon. So you have an incredible discrepancy in the power of the water which exists in the Southwest, but there's not much of it.

So what we do with the NAWAPA program, is we take the water cycle of the entire continent, which mankind has never done before, and we bend it: We actually build a single infrastructure system, to bend the water cycle, bring the water from where it's abundant, down to where it will be much *more*

productive, and we raise the productivity of the water on the continent as a whole.

The NAWAPA System

Now, what I'd like to do, is just look very briefly at how this project is going to impact, specifically, Texas and California. This is another view of the project (Figure 2). The NAWAPA system stretches from the far northwest of Alaska and the Yukon Territory; we collect roughly 20% of the run-off of the major rivers up in this

area, and we reverse the flow of that run-off, which wants to go out to the Pacific Ocean, without doing any work, and we make it do work. We reverse the flow of that water, which is roughly 180 million acre-feet per year [MAFY]. And we bring it down through British Columbia, and we hook it into a natural reservoir, called the Rocky Mountain Trench, which is hundreds of kilometers long, and we make that water come down into the continental United States. Now, some of it does get diverted to move east across Canada, which I'll get to in a moment.

This gets pumped up to very high elevations, using very high energies, when it enters Montana and then down into Idaho in the Sawtooth Mountains; now it's at an elevation where it can flow by gravity and be directed via a series of canals and tunnels, down into the Southwest.

California

Let's look more specifically, for a moment, at California (Figure 3). We have the water, coming down across the Canada-U.S. border, up into the Sawtooth Mountains in Idaho, where it's pumped up to high elevations. Now, it can flow down, and what I'm going to talk about here, is how we're going to get the water into California. With the NAWAPA project, California stands to gain 220 MAFY of new, permanent supplies of water, which means that, per year, we're augmenting the amount of water that can be involved in agriculture and industrial activity in California by more than 50%. So this water gets directed through Idaho; we direct it into a new, manmade reservoir on the eastern border of Nevada, just east of Elko. We direct that water west,

FIGURE 3
NAWAPA: California-Nevada



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the Humboldt River, where it turns south, servicing parts of Nevada. We direct it south, and begin tunneling across the Nevada-California border, into the Owens River Valley, which is potentially, and formerly, very productive agricultural land, which is now very much dried up. The water begins to refill the Owens Lake, over time.

The second way we're going to get it into California, is again, coming down through near the eastern Nevada-Utah border; we're going to tunnel it down,

FIGURE 4
NAWAPA: Arizona/Southwest



ramento River system, to bring 10 MAFY of water to California.

Texas

In Texas, we're going to utilize the Colorado River [the multi-state river, not the Texas river of the same name]. Now, back in the 1950s and '60s, you had agreements of the states of the Southwest to allocate the water of the Colorado River, and we're at a point now where the Colorado doesn't have enough water to meet all those agreements. There just simply is not enough water there, and so you have water-rights fights. What we're going to do is use the water from the NAWAPA system to replenish the Colorado River and make it flow once again (**Figure 4**).

The water's going to come down through Utah, south by Lake Powell, into the Colorado River system; we're going to tunnel down east of Flagstaff, Ariz., we're going to

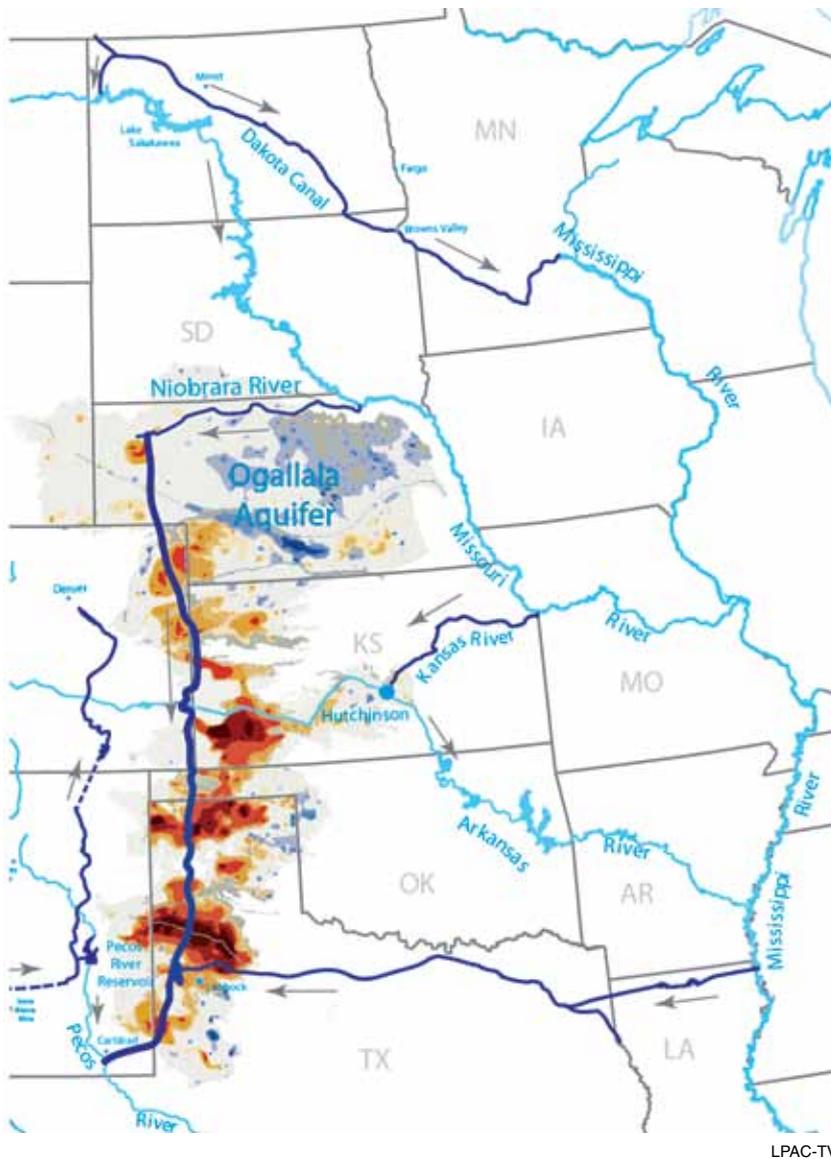
and create a new reservoir, called Lake Vegas, which currently doesn't exist. It would be positioned north of Las Vegas, and it would be a reservoir which is larger than Lake Mead. So we're going to create this. The water is then going to flow, via tunneling, through the mountains; it's going to flow south into southern California; we're also going to allow it to flow south into Baja California, and then tunnel back up into San Diego.

Now, the third way we're going to get water into California is via the Northwest, via the Columbia River Basin. This is the high-energy-consumption part of the project, but we have the potential, by coming down through northern California and hooking into the Sac-

hook into the Salt River and the Gila River, which runs in the southern parts of Arizona and New Mexico, and we're going to begin to bring this water east.

We'll bring it east via the Gila River, and Las Cruces; we're going to tunnel into the Rio Grande system. Now this is going to service Texas (**Figure 5**). From there, we tunnel east, underneath the Sierra Blanca Mountains, and we tunnel east to the Pecos River Reservoir, which is going to be augmented to be larger than Lake Mead. This hooks into the Pecos River and flows southeast, servicing basically the whole northwestern and western part of Texas, which is currently incredibly, incredibly dry, which is wracked by the additional crime of all these fracking wells. We're going to turn this

FIGURE 5
NAWAPA: Mississippi/Ogallala Aquifer



again into productive farmland.

We get 12 million acre-feet, which is most of the water we’re going to bring to Texas. Texas, from the NAWAPA project, is going to receive 14 million acre-feet more water per year, which is a 78% increase over current supplies. So you’re getting somewhere in the range of doubling the amount of water that’s available to Texas, just through this single project. So that’s where most of it comes from.

Now, if we look back, as I mentioned, to the original project (Figure 2), most of the water is going to come

down from the North and flow directly west, via the Rocky Mountain Trench. Some of it, in British Columbia, will be diverted east into what would be a new, manmade, navigable Canadian Prairie canal, and will bring, with some additional collection, 50 million acre-feet east, via the Peace River, across the Canadian Prairie, entering the United States in the Dakotas. And so, we’ll have about 20 million acre-feet that’s going to be made available via the Dakota Canal, to the Missouri and the Mississippi River systems.

One possibility for getting even more water to the Great Plains states, including Texas, is to bring the water via the Dakota Canal into the Missouri River system, west over the Niobrara River through a series of reservoirs and dams on that river, and we’ll bring it west into the newly created Great Plains Canal, which basically runs the entire length of the much-depleted Ogallala Aquifer. So we bring that water into northwestern Texas, near the Panhandle.

The other possibility, is to bring water via the Dakota Canal into the Mississippi River system, which some years floods—so giving us the possibility to utilize that excess water, to bring it west across northern Louisiana, and then down into eastern Texas, where it can be distributed along the north and eastern coastline of Texas.

Desalination—Go Nuclear

The NAWAPA project will take a number of years to complete. We’re probably looking at something like 25 years for the whole project. You can have parts of that online sooner, in something like 10-15 years. But we need water immediately, and we need to begin gearing up the energy densities available to us, to continue to build the NAWAPA project. So we also have a proposal, which we laid out in the Nuclear NAWAPA XXI pamphlet, which goes through this program in more detail, to bring more than 40 desalination plants to the United States, most of them concentrated in this region of

Texas, the Southwest, out to California; which would be a series of many, possibly nuclear desalination plants along the coastline, along rivers, to clean up and recycle the water that's flowing through rivers, and also through heavily farmed areas, to clean up the run-off and excess water from agricultural sites so, that it can be used again.

So by having an accelerated program to build this series of desalination plants, number one, you begin gearing up the nuclear industry again. Many of these probably should be nuclear. And you have the potential to add much, much more water into the NAWAPA system, but in the immediate period.

What we're proposing is a program which is immediately available to be implemented. We're proposing a program, where, for the first time, man is operating on the basis of controlling a system of an entire continent, taking an evolutionary step that should have been taken decades ago. But what we're also discussing is making a complete revolution in the way that people think about economics and life. Because what you're discussing—this project is *very expensive*. Not monetarily, but what we're talking about is a project that is incredibly energy-intensive and energy-expensive. We're

going to be bringing in more farms and more people to this area. The amount of power, that's going to be applied in the building of this project, in the maintenance of this project, and in the expansion of life in this area, means that every human being living in this area is going to be consuming and applying magnitudes more power than they do today.

Now, this is the complete *opposite* of what's claimed today to be the direction we should be headed. What's claimed by everybody is that, oh, if you want to survive, you have to "conserve" energy; you have to decrease your footprint on the environment around you, and basically do the best you can to disappear. Well, that's the hallmark of civilizations which have collapsed, as *we are today*, as you see happening right now in California and Texas. That system, that ideology, brings death.

The Natural Condition of Man Is Progress

What we need to do, is reassert the natural condition of man, which is to go for the application of higher and higher amounts and forms of power applied to change nature. And what that means for us today, is that we have to immediately return to a serious program for the implementation of nuclear fusion.

Nuclear fission we have. We have to immediately lift the restrictions, and move with that, today. But the only way to sustain this is to move for the early discovery and implementation of nuclear fusion. The United States has, and has had for 60 years, a serious nuclear fusion research program. This came out of some scientists that worked on bringing to the world the power of nuclear fission; they immediately moved to make the breakthrough for fusion. The United States had it classified, but then an unclassified crash program, in the *1950s*, bringing the best minds in the nation together, to make the breakthrough in fusion. We had serious investment programs.

We had a plan, which you see represented in this chart (**Figure 6**); we had a plan, which was laid out in 1976 with very detailed studies, how we would actually go from the experiments being done in the national labs, to having a demonstration fusion reactor that put power on the grid and could be used for industrial uses. And you see, different possible timescales, the most conservative of which would have had fusion online in 2005! But we could have had it as early as 1993!

So this is the direction we need to go. Now, if you

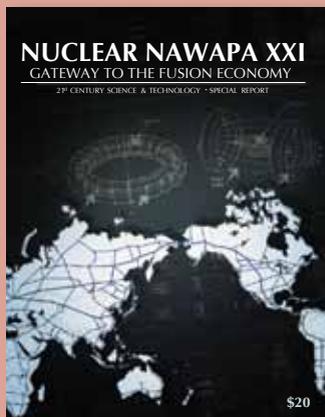
Nuclear NAWAPA XXI Gateway to the Fusion Economy

A 21st Century Science & Technology Special Report

By the
**LaRouchePAC Scientific
Research Team**

Articles include:

- A Call for an International Crash Program: Creating the Fusion Economy
- Increasing the Productivity of the North American Water Cycle
- Nuclear NAWAPA XXI and the New Economy
- Nuclear Agro-Industrial Complexes for NAWAPA XXI
- The Pacific Development Corridor: Maglev Through the Bering Strait
- The 'Common Aims of Mankind': A Strategic Defense of Earth



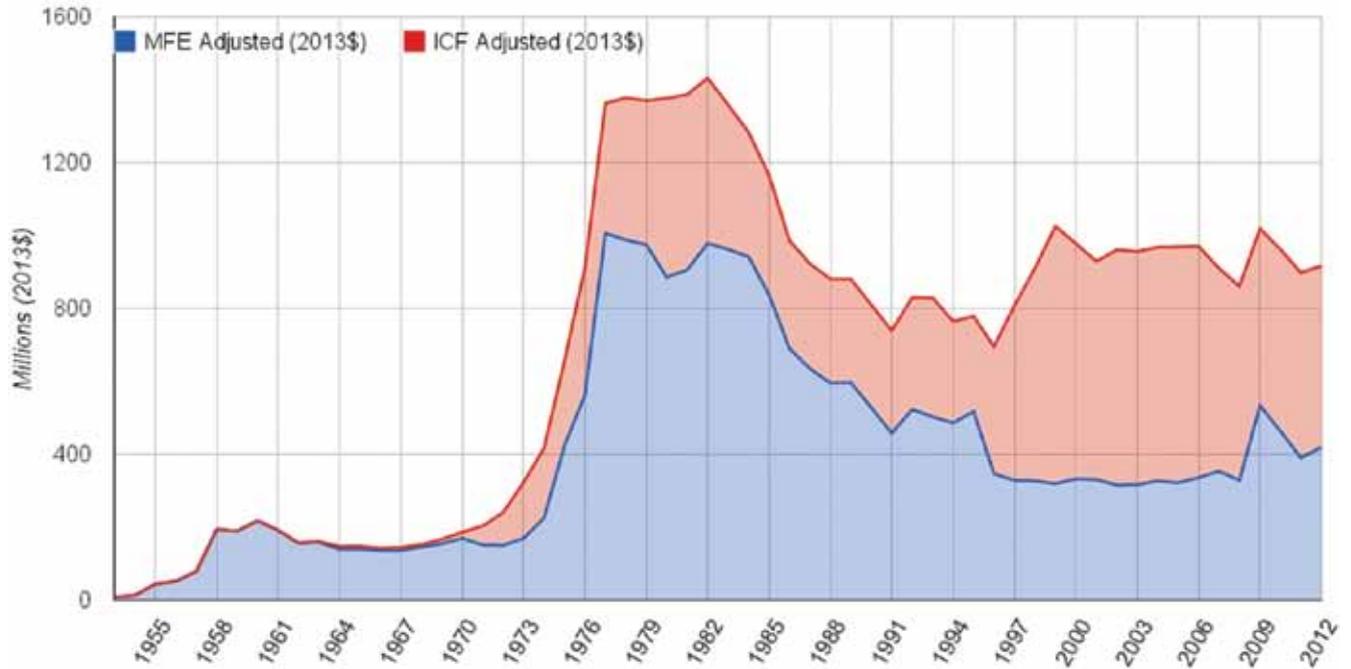
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FIGURE 6
U.S. Fusion Funding 1963-2012
 (2013\$)

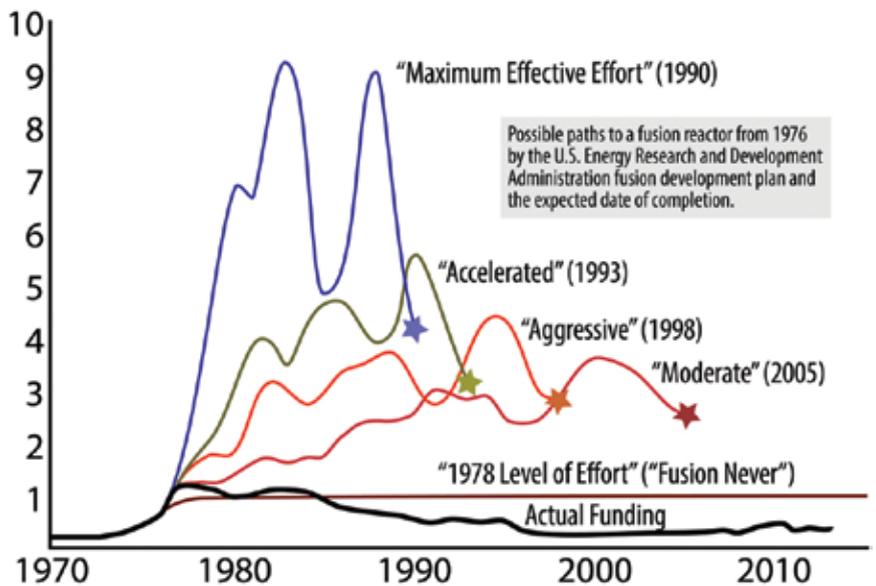


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look at the current funding of fusion, as it's actually occurred, as opposed to what should have happened, you look at the levels, which peaked in the early 1980s—fusion funding peaked in the early 1980s, and we've been collapsing ever since (**Figure 7**)! This President has done *nothing* but cut the fusion budget, and the budget which was submitted a few weeks back, again, slashed the budget to, really, levels which would destroy the entire program! So this has to be reversed.

And this is what people need to join us in fighting for, is this vision of mankind, this representation of human reality and human nature. And once again become a species which is representative of this creative, noetic power in the universe.

FIGURE 7
Annual Budget for Fusion
 (Billions/\$2012)



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