

**Our Ocean Backyard — *Santa Cruz Sentinel* columns by Gary Griggs, Director, Institute of Marine Sciences, UC Santa Cruz.**

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**Water- Searching for Answers**

We can live without food for 3 weeks or so, without air for about 3 minutes, and without water for 3 days. The amount of water on Earth doesn't change, but the population needing that water is increasing daily by about 200,000 people.

Nearly 97% of all the water on Earth is in the oceans and is salty. That percentage is gradually increasing, however, as ice sheets continue to melt and glaciers retreat. Of the roughly 3% of the water on Earth that is fresh, about ½ of it is wrapped up in those ice sheets and glaciers and isn't readily accessible.

We just experienced one of the California's driest years, in fact the 3rd driest in 119 years of record keeping, after two prior very dry years. What's coming next? To be completely honest, we don't know. We do know that the southwestern U.S. has experienced droughts that have lasted a decade or two, and even longer. We also know that the Earth is warming up and this isn't likely to stop any time soon. This doesn't help our water supply situation, and will most likely make things worse.

On the positive side, Santa Cruz has done exceptionally well with water conservation during this year's drought. In September we ranked among the state's communities with the lowest per person water usage at 49 gallons/day. We all deserve an A+ for water conservation.

Another group of California communities and water districts gets an F in water usage in my grade book. They used more than 10 times as much water per day as we did, and they are all in Orange and San Diego Counties, some of the hottest and driest parts of the state.

Most of us understand our present situation and are willing to do our part. How long we can keep this up, though? What if we have a 4th dry year, or a 5th? Or a decade of low rainfall? How long are we all willing to live with dying plants and brown lawns, wilting vegetable gardens, short showers and dirty cars? Or do we have a choice?

About 96% of our city water supply comes from runoff, which depends directly on rainfall, and that's been a little scarce lately. We can store some of that runoff, but our only large storage tank, Loch Lomond, is now at 59% of capacity and its lowest level in 23 years.

There is an important process underway now with the establishment of the City's Water Supply Advisory Committee and their public meetings and open discussions. There are opportunities for lots of input, and interested citizens haven't been hesitant or shy in suggesting a lot of creative ideas.

We are a small county with a limited amount of rainfall, and therefore, a limited water supply. There isn't going to be a pipeline delivering water to us from somewhere else anytime soon. So we need to be creative, real creative, and also not be too quick to discard any ideas.

There are basically two options, reduce our usage or increase our supply, or a combination of the two. So far, it's been all about reducing usage and we've done really well. But how much more we can conserve and is this sustainable?

A very distinguished and prominent civil engineer at UC Berkeley once said to me: "For every complex problem there is always a simple answer, and it's always wrong."

Any solution or set of solutions is going to cost money and our future water is going to cost significantly more than what we've paid in the past, simply because there hasn't been a big investment in new sources, new storage, or conveyance, for many years. Every proposal will also have environmental impacts that will have to be weighed, and any project will take time to plan, fund and construct. And we can only live 3 days without water.