

Environment – WATER -Energy

Water is in the middle of the Nexus

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Water – Critical to CA?

- Water is one of the most essential “..... essentials of life”
- Worldwide – the biggest enemy of water is uncontrolled population growth
 - **Population Clocks**



U.S.	179,323,175	- 1960
	203,302,031	- 1970
	226,542,199	- 1980
	248,709,873	- 1990
	281,421,906	- 2000
	306,259,018	- 2009
World	6,774,701,760	April 21, 2009

One Issue to be Considered

- Major environmental laws are 1970's vintage (with reauthorizations) – this is an over simplification
- In my opinion – it is clear that we need to have a national water policy – from which both Federal and State (or better yet watershed) policies, laws and regulations are promulgated
- In my opinion – we need to start over with a clean slate and rethink all of the laws that deal with Water – now is that radical or what?

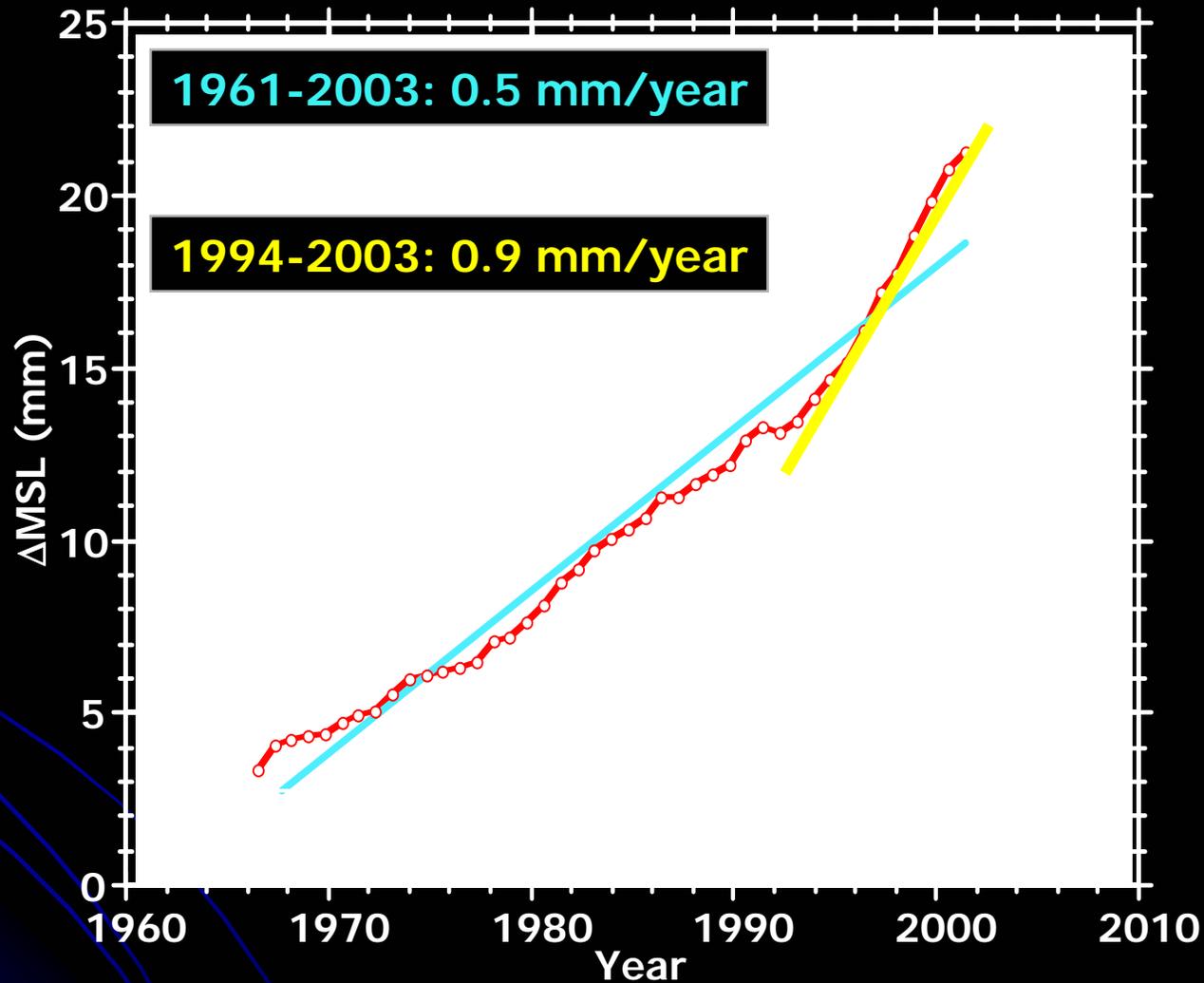
Climate Change

- Worldwide – the biggest unknown in water is climate change
- We can not continue – in the light of the overwhelming evidence that climate change is us – and fossil fuels!
- Let me remind you it took 200 – 300 million years to sequester all that CO₂ and we're burning it up in 200 years – or 10⁶ faster than mother nature can help us

Climate Change

- Water resources – the way that we have studied, allocated and predicted water – in its' broadest sense – has been to look at the historical record and project
- Climate change – now changes all of the rules as the weather patterns are going to change, precipitation patterns will change and added with population increases – what we saw in the past is not predictor of what we will see in the future

Sea Level - Even Faster Now?



[Dyurgerov and Meier, 2005]

Forests - Environment



Undulating forest surrounds meadows, lakes, and rivers of the Charlevoix Conservation Area, a coastal watershed in Quebec, Canada. This region, which illustrates a high-quality forested watershed, has been designated a biosphere by the United Nations Educational, Scientific and Cultural Organization (UNESCO).

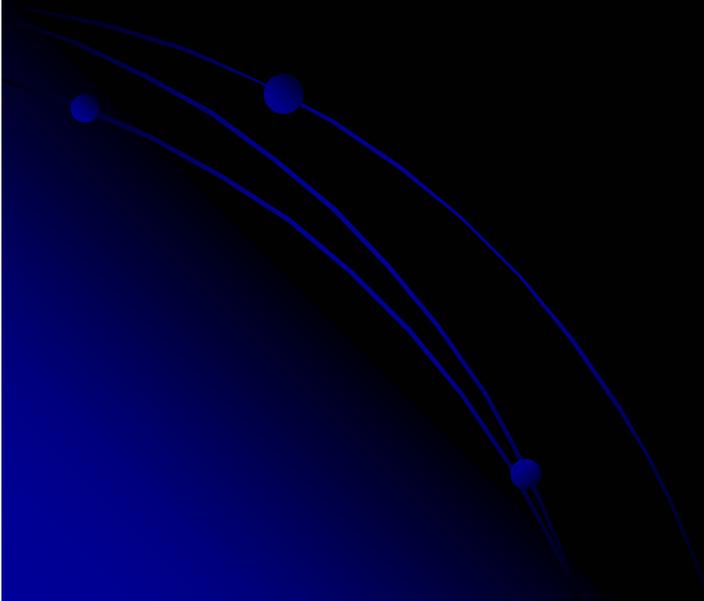
Environment – Forest

by *Elliot Richmond*

- Vital to the water cycle and to water quality
- Act like a giant sponge, filtering and recycling water
- Approximately 80 percent of U.S. fresh-water resources are estimated to originate in forests
 - which cover one-third of the U.S. land area.
- Higher elevation forests may act as groundwater recharge areas

Climate Change - Forests

- Less snow more rain – forests become essential sponges for changes in precipitation



We are at a unique juncture

- With a public that is increasingly becoming aware that climate change is not the figment of the liberals' imagination
- Hydrologically speaking – we used to use historical records to help predict the future – this is no longer possible – completely new hydrologic models need to be developed
- We can and should re-think – seriously – is how we do business!
- We have an opportunity as a Nation to step up to the plate and rethink many issues – not the least of which should be water!

Cost of Commodities



Clean Gravel
\$0.14

Sand
\$0.097

Beach Rock
\$0.37

Water in Southern California



\$0.00023

Water Innovation Now

www.waterWINnow.com

Empower students K – 12 to make a difference and they WILL

A colorful poster for the 'WIN Contest 2008' (Water Innovation Now). The central graphic is a large outline of the state of Florida, filled with a blue and yellow gradient. Water is depicted as a stream flowing from the top left into a large, stylized orange and red flower-like shape at the bottom. Below this shape, a person is walking on a path of stepping stones towards a beach with a surfer. A water tap is shown dripping into a puddle at the bottom. The text 'YOU ARE THE SOLUTION' is written in a blue, bubbly font within the puddle. The poster includes the contest title, a slogan 'IMAGINE LIFE WITHOUT WATER', and details about prizes and entry requirements.

WIN CONTEST 2008
Water Innovation Now! **IMAGINE LIFE WITHOUT WATER**

Create Innovative Water Conservation Solutions and Win Free Stuff!

Prizes for teachers and students:
Tons of Skate, Surf and Snow Gear (for boys & girls)
Mega Grand Prize: All Expense paid trip to Tavarua Island Resort, Fiji

Grand Prizes include Surf, Skate & Hang out with
ROCHELLE BALLARD
BOB BURNQUIST
GEOFF ROWLEY
DANNY WAY
ROB MACHADO

Computers, Trips to Disneyland Plus More Amazing Prizes

Open to Orange County students grades K-12
Deadline to enter project: October 31, 2008

For more information on prizes & contest, please visit win.ocde.us

Presented by: Orange County Department of Education

Water Innovation Now Contest Presented by: [Logos for Florida Department of Education, Orange County Department of Education, and others]

Environmental Printing Provided by: [Logos for various printing companies]

YOU ARE THE SOLUTION

FLTP, [Logos for various sponsors including Hurley, Clorox, Silke, etc.]

Thank You - CCR

- Questions?

