Vessel-Based Climate Change Education: An Example Program

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AN INCONVENIENT TRUTH

GLOBAL WARMING HAS TERRIBLE EFFECTS!

A CONVENIENT LIE

...I REALLY COULD GET ELECTED PRESIDENT...

TEMPEST in a TEAPOT...

IT'S THE FIRST STORM THAT CAN BE DEFINITIVELY LINKED TO GLOBAL WARMING...

GORE'S UTILITY BILLS
Perry may not believe in global warming, but he's probably sure Big Foot is for real

Monday, October 22, 2007

I'm thinking about filing an open records request with the Governor's Office to find out where Rick Perry keeps his membership card to the Flat Earth Society.

The reason I should do this is that Perry said he doesn't believe in human-made global warming in a speech he made last month to California Republicans.

"I've heard Al Gore talk about man-made global warming so much that I'm starting to think that his mouth is the leading source of all that supposedly deadly carbon dioxide," Perry said. "Virtually every day another scientist leaves the global warming bandwagon ..."
Media feeding frenzy
• Computer Models Are Unreliable Due to Faulty Data and Unsound Assumptions
• Natural Climate Variables Ignored by Alarmists
• Conclusion: Links Between Greenhouse Gas Emissions and Severe Climate Impacts Are Tenuous
26 October 2007

The certainty of uncertainty
Filed under: Climate modelling Climate Science — group @ 1:10 PM

A paper on climate sensitivity today in Science will no doubt see a great deal of press in the next few weeks. In "Why is climate sensitivity so unpredictable?", Gerard Roe and Marcia Baker explore the origin of the range of climate sensitivities typically cited in the
View From The Lake
Three hour tour.....

~450 people per summer
Four Years of Views...

• Land use connections to water quality
  2004: Looking at the land – development impacts
  2005: Food webs, wetlands, coastal habitats
  2006: Climate change, mercury, and stormwater impacts
  2007: A fish eye view – Lake Superior from the eyes of a coaster brook trout
Common Format

• Short lecture on land to set the stage
• Combination of discussions and activities on boat
• Water quality, plankton, and benthos sampling mid-trip
• Big emphasis on individual and community actions that can make a difference
Scary Outreach...

- Avoid emotional debate and encourage objectivity
- Inspire personal responsibility and behavior change
- Provide straightforward “how to” guidance
2006 Climate Change Slide – Humor helps...

Positive Proof of Global Warming

18th Century
What have you observed?
What if trends continue?

Annual Global Temperature Anomalies, 1880 - 2004
(From the 1880 - 2003 Mean)

Year

Degrees C.

Graphic: Michael Ernst, The Woods Hole Research Center
Ice Cover Data

Recreation and tourism shifts

A View From the Lake
Storm Event Data

Erosion and sedimentation

Stream and lake habitat changes for fish and critters

Kunkel et al. 1999, Journal of Climate
Which fish is native to Lake Superior?

A. Rainbow trout
B. Brown trout
C. Brook trout
D. Steelhead
E. Rainbow smelt

22% Correct
If coasters are native, what happened to them?

- What a coaster brook trout needs to thrive
- What has changed in the last century
- What brook trout status tells us about the health of the lake as a whole, now and in the future
Thermal impacts in Kingsbury Creek

http://www.fisheyesoup.com/article_details/295.html
If you were a Brook Trout...

What problems would you be seeing in the streams and nearshore areas of Lake Superior?

- Nowhere to lay eggs
- Water flows too fast for young fish
- Competition for food
- No place to hide
What's your role?

What part can we play in protecting this ecosystem?

Water temperature too warm → Nowhere to lay eggs

Water flows too fast for young fish → Competition for food

No place to hide

Temperature preferences of select Great Lakes fish:
- Warm water:
  - Brown Bullhead
  - Walleye
  - Pike
  - Brook Trout
  - Lake Trout
- Cool water:
  - Carp
  - Bluegill
  - Smallmouth Bass
  - White Sucker
  - Rainbow
  - Northern Black Crappie

Stop Aquatic Hitchhikers!
Take home messages:

• Environmental issues are inter-related
• Some of the same solutions help with all these issues
• You can make a difference at the local level
Climate change is affecting Lake Superior and the land surrounding the lake.

9% said, “No, I do not need to make changes.”

87% said, “Yes, I do need to make changes.”

Given your current understanding of climate change, do you believe you need to make changes in your own lifestyle?

A. Yes
B. No
C. Not sure
Scary outreach summary

- Incremental steps – start from “where people are at”
- Local examples
- Connect the dots – a few simple connections from things they can see
- Let people make their own discoveries
- Simple, “doable,” common sense solutions that yield many benefits (no gloom and doom)