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Chinese dam threatens water and air

From the Alaskan wilderness to China's Yangtze River, the search for affordable energy is proceeding at a rapid, and some would say reckless, pace. Now, a groundbreaking study by an FSU professor has raised new worries about the completion of the world's most powerful hydroelectric dam.

Doron Nof, a professor of oceanography, reported his study in the April Bulletin of the American Meteorological Society. He used computer models to simulate the environmental impact of China's Three Gorges Dam on the Yellow Sea, East China Sea and Japan Sea.

According to Nof's research, the dam could raise atmospheric temperatures in that region by reducing the amount of fresh water dumped into the Yellow Sea by the Yangtze River. Without the fresh water layer for insulation, Nof fears the warmer seawater will raise the temperature of the surrounding air.

"Anytime you restrict the flow of fresh water, you should be careful," Nof said. "Right now, there is only a small exchange of heat between the atmosphere and the ocean, but without the surface layer of fresh water, there will be a lot."

Rick Copeland of the Florida Department of Environmental Protection says any increase in temperature could have significant repercussions for the East Asian climate.

Copeland notes that a single-digit temperature change on a global scale could lead to melting polar ice and rising sea levels.

The Three Gorges Dam is the largest engineering project by the Chinese government since the Great Wall. Upon its scheduled completion in 2009, the dam will tower 610 feet above the world's third largest river, the Yangtze.

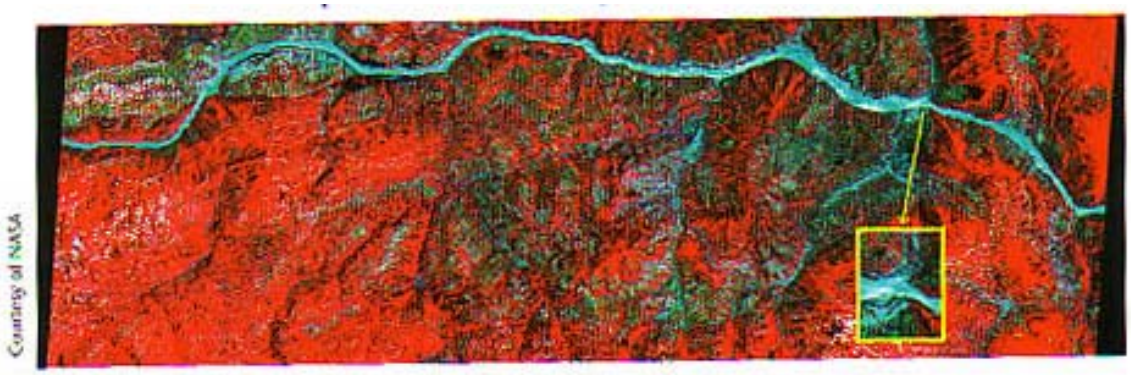
Vaclav Smil, a professor at the University of Manitoba and an editorial board member of the ecology magazine China Quarterly, has said the dams would be "an ecological disaster."

Without cooperation from the Chinese government, Nof fed statistical information on the East Asian climate into computer models, and simulated environmental scenarios.

The computer model allowed Nof to more easily observe the complex interactions of sea, air and land.

"I can't go out to the ocean to measure these things," said Nof, who balances research and teaching. "What we need are the computers, as well as a peaceful place to do the research. We have that here [at FSU]."

Brad Parsons



Satellite photo showing the Three Gorges Dam on the Yangtze River.