# Nature's Crusaders'

## Number of fish in the ocean and their effect on global warming

January 21, 2009 at 7:56 am (climate, ecosystems in crisis, fish, nature, working together)
Tags: oceans, protect animals and environment, protect all life, saving the biodiversity of planet earth, saving the planet, working together

Are there really plenty of fish in the sea? University of British Columbia fisheries researcher Villy Christensen has attempted to measure the total fish biomass in our oceans, He and his team have estimated it to be two billion tons.
Simon Jennings, a co researcher examined global ocean plant production and its efficiency as it moves through the food chain, while Christensen tallied global fish catches since 1950 and calculated how much fish there must have been in the oceans to support fisheries.

*The team also found that fish play a vital role in regulating climate change by maintaining the delicate pH balance of the oceans,* according to a study published in the journal **Science,** co-authored by Christensen and a team of international scientists.



"By drinking salt water, fish ingest a lot of calcium, which needs to be removed - or they will get renal stones," says Christensen, an associate professor in the UBC Fisheries Center.

**How can fish take in so much calcium?**
Fish do this by binding the calcium to bicarbonate, and then excreting it as pellets of calcium carbonate, a chalk-like substance also known as "gut rocks," in a process completely separate from food digestion. (To see an animation of this process check out the link below.

As the calcium carbonate from these pellets dissolves, it turns the seawater more alkaline, which has relevance for ocean acidification, and is impacted by the ocean's exchange of carbon dioxide (CO2) with the atmosphere.

To gauge the global impact of this process, Christensen and Simon Jennings from the UK's Center for Environment, Fisheries and Aquaculture Science took two entirely different approaches to estimate the total biomass of fish in the world's ocean.
**Two approaches to counting all the fish in the ocean**
Jennings examined global ocean plant production and its efficiency as it moves through the food chain, while Christensen tallied global fish catches since 1950 and calculated how much fish there must have been in the oceans to support fisheries. The two approaches resulted in a close range of numbers: 0.8 to 2 billion tons.

"This study really is the first glimpse of the *huge impact fish have on our carbon cycle* - and why we need them in the ocean," says Christensen. *"We must buck the current trend of clear-cutting of the oceans and foster these unrecognized allies against climate change."*

**Resources**

**Fish Carbonate Animation**
Courtesy of University of British Columbia downloads: http://www.publicaffairs.ubc.ca/download

**Excerpts** courtesy of **Seed Daily**
*First-Ever Estimate Of Worldwide Fish Biomass And Impact On Climate Change -*Staff
Vancouver, Canada (**SPX**) January 21, 2009. Estimate_Of_Worldwide_Fish_Biomass

**Image courtesy of NASA** .nasa.gov/topexfish

## 1 Comment

1. **Thom Freedom** said,

   January 21, 2009 at 8:31 am

   Interesting stuff. Goes to show the delicate nature of our global ecosystem.

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