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New Hot Paper Comments

▸ *By Michio J. Kishi*

Michio J. Kishi answers a few questions about this month's new hot paper in the field of Environment/Ecology.

From • >>November 2007

Field: Environment/Ecology

Article Title: NEMURO - a lower trophic level model for the North Pacific marine ecosystem

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ST: Why do you think your paper is highly cited?

1. This is a result of an international project widely known to the oceanographers of the Northern Pacific region.
2. Through an outreach program, a FORTRAN code has been distributed together with this paper.
3. Many famous researchers from the field of oceanography have participated in this project.

ST: Does it describe a new discovery, methodology, or synthesis of knowledge?

Yes, it is a newly developed ecosystem model of the Northern Pacific. NEMURO (North Pacific Ecosystem Model for Understanding Regional Oceanography) is a lower trophic level ecosystem model for the North Pacific Ocean.

ST: Would you summarize the significance of your paper in layman's terms?

NEMURO is a biomass-based nitrogen model that simulates the temporal evolution and dynamics of the North Pacific's nutrient–phytoplankton–zooplankton food web. Different spatial implementations exist, including a single well-mixed domain that represents the surface layer of the water column (Kishi *et al.*, 2006), a 1D vertically structured formulation (Fujii *et al.*, 2006), a 2D cross-shelf formulation (Wainright *et al.*, 2006), and a fully 3D spatially-explicit basin-scale implementation (*Aita et al.*, 2006).

"This is a result of international project in inter-governmental organization 'North Pacific Marine Science Organization' (PICES)."

The ecosystem model described in this paper is used widely for the purpose of predicting the ecosystem changes of the Northern Pacific region which correspond to climate change, a consideration of the effects of climate change on the phytoplankton and zooplankton ecosystems, and its use as a model of fish growth rate.

ST: How did you become involved in this research, and were there any particular problems encountered along the way?

This is a direct result of an international project in inter-governmental organization called the "North Pacific Marine Science Organization" (PICES).

ST: Where do you see your research leading in the future?

I am currently involved in the development of ecosystem models, which include fish ecology, part of which is also described in the same volume of

Ecological Modelling (Vol. 202). This project is a collaborative one among many scientists from various countries, including the USA, Canada, and particularly among those researchers whose countries surround the Northern Pacific—Korea, China, Russia, and Japan.

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