

## Mexican fisheries sciences and marine ecosystem modeling in La Paz, Mexico

by Salvador E. Lluch-Cota, Bernard A. Megrey and John E. Stein

After adopting its formal constitution in 2006, the Mexican Fisheries Society and the Mexican Chapter of the American Fisheries Society held their first biannual meeting from May 2–4, 2007, in La Paz, B.C.S., Mexico (**Photo 1**). Six plenary invited talks were featured after the Opening Ceremony, including one by Dr. John E. Stein, PICES Science Board Chairman-elect. He described the general activities and structure of the Organization, and highlighted the development of a new integrative science program in PICES: *Forecasting and Understanding Trends, Uncertainty and Responses of the North Pacific Ecosystem* (FUTURE). Likewise, this meeting was an opportunity for PICES colleagues to understand the main activities of the Mexican Fisheries Society. This was an important exchange of information because ways are being explored to use the Mexican Fisheries Society as a conduit to greater cooperation and interaction between marine scientists in Mexico and PICES.

A total of 97 oral and 42 poster presentations covered diverse aspects of marine and freshwater fisheries in four concurrent sessions. The program was particularly rich in papers on top predators biology, ecology and fisheries oceanography, coastal and benthic fisheries, modeling, management, and socioeconomic aspects. During the meeting, three side activities were hosted:

- the Fifteenth Annual Meeting of the Small Pelagics Technical Committee (CTPM), with over 20 presentations on sardine and anchovy fisheries science;
- a round table session on the concept of fishing down marine food webs as applied to the Gulf of California;
- a half-day workshop on fisheries legislation, particularly the recently approved fisheries and aquaculture law in Mexico.

Other activities included: a meeting with American Fisheries Society officers to discuss a bid to host their 2011 annual meeting in Mazatlán, Mexico; communications with several institutions in Mexico to explore the formation of sections within the society; and a proposal for a new fisheries journal oriented to Latin American scientists.

Besides the academic sessions, a marine sciences book show coordinated by Ana María Talamantes, a professional librarian and Chapter member, was hosted. Participation included several national institutions, the American Fisheries Society, and a collection of selected volumes kindly donated by the PICES Secretariat. Art was also exhibited, thanks to a very successful contest where the winning painting, called *El pescador dichoso* (The happy fisherman) will be used as the central image of the next biannual meeting in 2009.

Prior to the Mexican Fisheries Society meeting, Dr. Bernard A. Megrey held a 3-day training workshop (on April 26–28,) on “*Techniques for building multi-trophic level marine ecosystem models, with special emphasis on NEMURO and NEMURO.FISH*” at the Centro de Investigaciones Biológicas del Noroeste (CIBNOR) laboratory. The workshop was directly or indirectly sponsored by the International Fisheries Section of the American Fisheries Society, the Mexican Chapter of the Western Division of the American Fisheries Society, PICES, NOAA-Fisheries, and several members of PICES’ CCCC MODEL Task Team. The workshop was attended by seven Ph.D.-level scientists representing marine laboratories in La Paz, Mazatlán and Guaymas, Mexico (**Photo 2**).



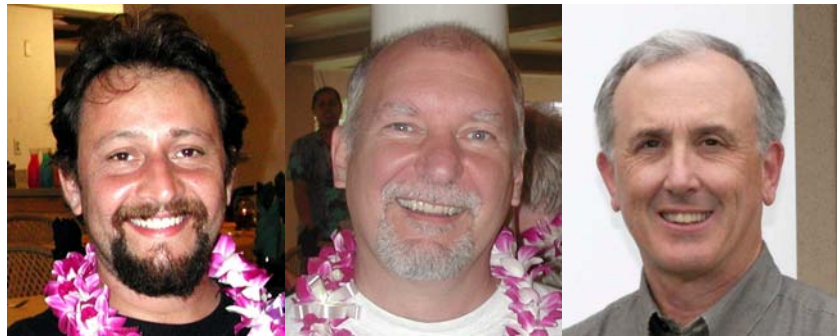
Photo 1 Participants of the first biannual meeting of the Mexican Fisheries Society and the Mexican Chapter of the American Fisheries Society.

The workshop focused on general methods to simulate ecosystem mechanisms and processes, and specifically covered in detail the NEMURO lower trophic level ecosystem model process equations and the NEMURO extension called NEMURO.FISH, which links trophodynamically lower trophic-level zooplankton abundance to upper trophic-level fisheries bioenergetics and population dynamics models. The workshop, which was a mix of lectures and hands-on exercises, also included topics on model calibration, model validation and methods of sensitivity analysis. At the end of the workshop, part of one day was spent discussing ways to adapt NEMURO, which was built for sub-arctic North Pacific ecosystems, to the tropical and transitional zone ecosystems of Mexico. The workshop was a big success and plans are being developed to repeat it in La Paz, and possibly offer it at laboratories located in Mazatlán and Ensenada.

The next annual meeting of the Mexican Fisheries Society will take place in Ensenada in 2009, and then in Mazatlán in 2011.



*Photo 2 Workshop participants outside the CIBNOR laboratory. From left to right, back: Carlos Pacheco (providing the lab's technical support), Salvador Lluch-Cota (local host), Felipe Amezcua (UNAM-Mazatlán), Verónica Morales-Zárate (CIBNOR), Alejandro Acevedo (Ph.D. student, Guaymas), Jesus Bautista (CIBNOR) and Bernard A. Megrey (trainer); front: Hugo Herrera and Alejandro Ramos (Ph.D. students, La Paz).*



*Dr. Salvador E. Lluch Cota (slluch@cibnor.mx) is a fisheries oceanographer working for the fisheries ecology program at CIBNOR. He has been involved in PICES activities for many years, including the hosting of the North Pacific Transitional Areas Symposium in 2002. Besides leading research projects and teaching, he currently serves as a GLOBEC SSC member, President of the Mexican Fisheries Society and Mexican Chapter of the American Fisheries Society, and is forming a group for the estimation of parameters for ecological modeling.*

*Dr. Bernard A. Megrey (bern.megrey@noaa.gov) is a fisheries research biologist with NOAA's Alaska Fisheries Science Center where he has worked since 1982. As the lead investigator for recruitment modeling studies for NOAA's Fisheries-Oceanography Coordinated Investigations (FOCI), he has nearly 25 years' experience studying dynamics of exploited North Pacific fish populations, relationships of environment to recruitment variability, and application of computer technology to fisheries research and natural resource management. He is a member and former chairman of the PICES CCCC MODEL Task Team and also serves as a member of the PICES Technical Committee on Data Exchange (TCODE).*

*Dr. John E. Stein (john.e.stein@noaa.gov) is Deputy Science Director of the NOAA's Northwest Fisheries Science Center and Co-Director for NOAA's West Coast Center for Oceans and Human and Health. His science and scientific leadership has primarily focused on the impacts of anthropogenic and natural toxic compounds on fishery resources and protected marine species, and bringing science to the support efforts on recovery of endangered and threatened Pacific salmon. Recently, he has become more involved in the emerging area of scientific investigations on the connections between state of the ocean ecosystem and risk and benefits to human health. John was Chairman of the PICES Marine Environmental Quality Committee (MEQ) for many years and is now serving as Chairman-elect of the PICES Science Board. He will assume the chairmanship following the close of the PICES Sixteenth Annual Meeting in November 2007.*