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Research Interests:

Fisheries Population Dynamics
Fisheries Stock Assessment
Fisheries Ecology and Management
Fish Life History
Uncertainty Quantifications
Decision-making Theory
Statistical and Mathematical Modeling



Yong Chen, Ph.D.

*Professor of Fisheries Science, School of Marine Sciences, University of Maine
Marine Biology and Marine Policy Researcher, Sustainability Solutions Initiative*

Profile:

Yong Chen is a fisheries scientist and faculty member at the University of Maine's School of Marine Sciences. His research focuses on quantitative fisheries ecology, stock assessment, and management of fisheries resources. Much of Chen's work is interdisciplinary and involves fisheries biology, ecology, mathematical and statistical modeling, management policy, and computer simulations. His research interests include evaluating fish life history and environmental impacts, designing fisheries-dependent and fisheries-independent survey programs, and conducting risk analysis of alternative management strategies.

Chen currently co-leads an Emerging Opportunities project funded by SSI. His team plans to build relationships with lobstermen working in the Gulf of Maine in order to address the problem of bycatch. They plan to work closely with lobstermen to assess the ecological, social, and economic impacts of bycatch in the region.

In addition to working at the University of Maine, Chen is a visiting professor at Shanghai Ocean University in China. He is currently the editor of the Canadian Journal of Fisheries and Aquatic Sciences. Chen was recognized in 2008 with a University of Maine Graduate Mentor Award. Since 2009, he has coordinated both the UMaine Marine Policy and UMaine Dual Master Degree in Natural and Social Sciences programs. Chen is currently a member of the New England Fisheries Management Council Scientific and Statistical (SSC) Committee.

Chen's research has been funded by the Canadian Natural Science and Engineering Research Council, NOAA's National Marine Fisheries Service, both the National and Maine Sea Grant programs, the Atlantic States Marine Fisheries Commission, the National Science Foundation, the Maine Department of Marine Resources, and the Maine NSF EPSCoR SSI program, among others.

Chen has been published in peer-reviewed journals including the Canadian Journal of Fisheries and Aquatic Sciences, ICES Journal of Marine Science, Fisheries Research, Aquatic Ecology, Journal of Fish Biology, Fishery Bulletin, Chinese Journal of Oceanology and Limnology, Marine Biology, Marine Ecological Progress Series, Freshwater and Marine Research, and Ecology and Society.

Degrees:

University of Toronto (Canada), Ph.D., 1995 (Zoology and Statistics)

University of Toronto (Canada), M.S., 1991 (Fish Ecology)

Qingdao Ocean University (China), B.Agric., 1983 (Fisheries Science)

SSI Projects:

Emerging Opportunities -
Foundations for Future
Research

Media Expertise:

Fisheries

Fisheries Stock Assessment
and Management

Student Opportunities:

Will provide full financial support (including stipend, tuition and health insurance) for suitable graduate students who are motivated and interested in conducting interdisciplinary research to address problems facing fisheries. Seeking students with good analytical and quantitative skills, who work well independently and with others. Current projects include a sentinel survey fishery program in the northern Gulf of Maine, research on fisheries discards, stock assessment model development, computer simulations, and fisheries management.

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Courses:

SMS 321: Introduction to Fisheries Science
SMS 562: Fisheries Population Dynamics
SMS 597: Statistical Modeling
SMS 598: Special Topics in Marine Sciences

Selected Publications:

- J. Cao*, Y. Chen, J. Chang*, and X. Chen, "An Evaluation of an Inshore Bottom Trawl Survey Design for American Lobster (*Homarus americanus*) Using Computer Simulations," *Journal of North Atlantic Fisheries Science* 46 (2014): 27-39.
- J. Zhao*, J. Cao*, S. Tian, Y. Chen, S. Zhang, Z. Wang, and X. Zhou, "A Comparison of Two GAM Models in Quantifying Relationships of Environmental Variables and Fish Richness and Diversity Indices," *Aquatic Sciences* 48 (2014): 297-312.
- J. Cao*, S. Truesdell, and Y. Chen, "Impacts of Stock Mixing Arising from Seasonal Migration on the Assessment of Atlantic Cod in the Gulf of Maine," *ICES Journal of Marine Sciences* (2014).
- X. Wang*, Y. Chen, S. Truesdell*, L. Xu, J. Cao*, and W. Guan, "The Large-Scale Deployment of Fish Aggregation Devices Alters Environmentally-Based Migratory Behavior of Skipjack Tuna in the Western Pacific Ocean," *PLoS ONE* 9, no. 5 (2014): e98226.
- X. Chen, B. Liu, and Y. Chen. "Sthenoteuthis oualaniensis, Purpleback Flying Squid," in *Advances in Squid Biology, Ecology, and Fisheries Part II – Oegopsid Squids*, eds. Rosa et al (New York: Nova Science Publication, Inc., 2013), 207–223.
- B. Liu, X. Chen, Y. Chen, and S. Tian, "Geographic Variation in Statolith Trace Elements of the Humboldt Squid, *Dosidicus gigas*, in the High Seas of Eastern Pacific Ocean," *Marine Biology* 160, no. 11 (2013): 2853-2862.
- K.E. Mills, A.J. Pershing, C.J. Brown, Y. Chen, F.S. Chiang, D.S. Holland, S. Lehuta, J.A. Nye, J.C. Sun, A.C. Thomas, and R.A. Wahle, "Fisheries Management in a Changing Climate: Lessons from the 2012 Ocean Heat Wave in the Northwest Atlantic," *Oceanography* 26, no. 2 (2013).
- W. Guan*, J. Cao*, Y. Chen, and M. Cieri, "Impacts of Population and Fishery Spatial Structures on Fishery Stock Assessment," *Canadian Journal of Fisheries and Aquatic Sciences* 70 (2013): 1178-1189.
- Y. Chang, C. Sun, Y. Chen, S. Yeh, G. DiNardo, and N. Su, "Modelling the Impacts of Environmental Variation on the Habitat Suitability of Swordfish, *Xiphias gladius*, in the Equatorial Atlantic Ocean," *ICES Journal of Marine Sciences* 70 (2013): 1000-1012.
- A. Jordaan, M.G. Frisk, L.S. Incze, N.H. Wolff, L. Hamlin, and Y. Chen, "Multivariate Dissemination of Species Relationships for Use in Marine Spatial Planning," *Canadian Journal of Fisheries and Aquatic Sciences* 70 (2013): 316-329.
- Y. Zhang*, Y. Chen, J. Zhu*, S. Tian*, and X. Chen, "Evaluating Harvest Control Rules for Bigeye Tuna (*Thunnus obesus*) and Yellowfin Tuna (*Thunnus albacares*) Fisheries in the Indian Ocean," *Fisheries Research* 137 (2013): 1-8.
- Y. Zhang*, Y. Li*, and Y. Chen, "Modeling the Dynamics of Ecosystem for the American Lobster in the Gulf of Maine," *Aquatic Ecology* 46 (2012): 451-464.