

# The Relative Importance of Fishing and the Environment in the Regulation of Fish Population Abundance

June 26-28, 2012

*A Symposium of the American Institute of Fishery Research Biologists*

*Waypoint Event Center, Fairfield Inn and Suites  
185 MacArthur Drive, New Bedford, Massachusetts 02740 USA*



*Conference Registration online at:*

<http://www.aifrb.org/symposium-2012/2012-symposium-registration/>

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*Symposium Sponsors: Massachusetts Division of Marine Fisheries; Southern New England Chapter of the American Fisheries Society; University of Massachusetts School for Marine Science & Technology, Department of Fisheries Oceanography; OceanTrust; National Marine Fisheries Service*



**Tuesday, June 26**

9:00 **Welcoming Remarks:** Dr. Steve Cadrin, AIFRB President; Hon. Jon Mitchell, Mayor of New Bedford; Paul Diodati, Director, Massachusetts Division of Marine Fisheries; and Dr. Bill Karp, Acting Science and Research Director, Northeast Fisheries Science Center

10:00 **Keynote Speaker: Harvesting in a Nonlinear World: Fisheries as Complex Systems.** Mike Fogarty, *Northeast Fisheries Science Center, NOAA Fisheries Service, 166 Water Street, Woods Hole, MA, 02543, USA*

10:50 **Coffee Break**

*Oral Presentations (Presenting Author Underlined)*

11:10 **Characterizing and Quantifying Mortality in the Early Life-stages of Marine Fish Populations.** R. Christopher Chambers, *Northeast Fisheries Science Center, NOAA Fisheries Service, Highlands, NJ, 07732, USA*

11:30 **Are Shifts in Marine Species' Ranges Predictable? Insights from Both Coasts of North America.** Malin L. Pinsky<sup>1</sup>, Michael Fogarty<sup>2</sup>, Boris Worm<sup>3</sup>, Jorge L. Sarmiento<sup>4</sup>, and Simon A. Levin<sup>1</sup>, <sup>1</sup> *Department of Ecology and Evolutionary Biology, 106A Guyot Hall, Princeton University, Princeton, NJ, 08544, USA;* <sup>2</sup> *Northeast Fisheries Science Center, 166 Water St., Woods Hole, MA, 02543, USA;* <sup>3</sup> *Biology Department, Dalhousie University, Halifax, NS, B3H 4R2, Canada;* <sup>4</sup> *Atmospheric and Ocean Sciences, 300 Forrestal Road, Princeton University, Princeton, NJ, 08544, USA*

11:50 **Cod Productivity Constrained at the Southern End of its Range in North America by Cold Water Conditions.** Kevin D. Friedland<sup>1</sup>, Joe Kane<sup>2</sup>, Jon Hare<sup>1</sup>, Gregory Lough<sup>3</sup>, Paula S. Fratantoni<sup>3</sup>, Janet Nye<sup>3</sup>, Michael Palmer<sup>3</sup>, and Michael Fogarty<sup>3</sup>, *Northeast Fisheries Science Center, NOAA Fisheries Service, <sup>1</sup>Narragansett, RI, USA; <sup>2</sup>Sandy Hook, NJ, USA; <sup>3</sup>Woods Hole, MA, 02543, USA*

12:10 **Lunch Break**

2:00 **Building Strong Inference to Distinguish Fishing and Environmental Effects in a Data-limited Fishery.** Richard S. McBride<sup>1</sup>, Angela B. Collins<sup>2</sup>, Seifu Seyoum<sup>2</sup>, and Michael Tringali<sup>2</sup>, <sup>1</sup>*NOAA Fisheries, Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA, 02543, USA;* <sup>2</sup>*Florida Fish & Wildlife Conservation Commission, Fish & Wildlife Research Institute, 100 8<sup>th</sup> Avenue SE, St. Petersburg, FL, 33701, USA*

- 2:20 **The Great Weakfish Boom and its Subsequent Suppression as a Response to the Decline and Recovery of Striped Bass on the Mid-Atlantic Coast, with a Supporting Role for Spiny Dogfish.** Desmond M. Kahn<sup>1</sup> and James M. Uphoff, Jr., <sup>1</sup>*Delaware Division of Fish and Wildlife, P.O. Box 330, Little Creek, DE, 19961, USA;* <sup>2</sup>*Maryland Fisheries Service, Annapolis, MD, USA*
- 2:40 **Wasp Waist or Beer Belly? Modeling Food Web Structure and Energetic Control in Alaskan Marine Ecosystems, with Implications for Fishing and Environmental Forcing.** Sarah Gaichas<sup>1</sup>, Kerim Aydin, Stephani Zador, and Ivonne Ortiz, *Northeast Fisheries Science Center, NOAA Fisheries Service, Narragansett, RI, USA*
- 3:00 **Sea Scallop (*Placopecten magellanicus*) Predation on the Northeast U.S. Continental Shelf: Trends in Groundfish Feeding Habits.** Stacy Rowe and Brian E. Smith, *NOAA/NMFS/NEFSC, Food Web Dynamics Program, 166 Water Street, Woods Hole, MA, 02543, USA*
- 3:20 **Coffee Break**
- 3:40 **Fishing for Answers: Using Diets of Angler-Caught Predators to Assess Foodweb Changes in Lake Huron, 2009-2011.** Ethan Bright<sup>1,2</sup>, Edward F. Roseman<sup>2</sup>, Jeffrey Schaeffer<sup>2</sup> and David G. Fielder<sup>3</sup>, <sup>1</sup>*School of Natural Resources and Environment, University of Michigan, 440 Church St., Ann Arbor, MI, 48109-1041, USA;* <sup>2</sup> *US Geological Survey, Great Lakes Science Center, 1451 Green Rd., Ann Arbor, MI, 48105, USA;* <sup>3</sup> *Michigan Department of Natural Resources, Alpena Fisheries Research Station, 160 E. Fletcher, Alpena, MI, 49707, USA*
- 4:00 **Integrating, and then Disentangling, Multiple Drivers Impacting Living Marine Resources.** Jason Link, *Northeast Fisheries Science Center, NOAA Fisheries Service, 166 Water Street, Woods Hole, MA, 02543, USA*
- 4:20 **Discussion on Ecological Effects (Moderated by Brian Rothschild)**
- 5:00 **Break**
- 6:00 **Cocktail Reception at the New Bedford Whaling Museum**
- 8:00 **Presentation of AIFRB Outstanding Achievement Award**

**Wednesday, June 27**

9:00 **Opening Remarks:** Dr. Richard Beamish

9:10 **Keynote Speaker: The role of the environment and harvest on stock status: contrasting California salmon and rockfish fisheries.** Churchill Grimes, John Field, Steve Lindley, Alec MacCall, Steve Ralston and Brian Wells, *National Marine Fisheries Service, Southwest Fishery Science Center, Santa Cruz, CA, USA*

*Oral Presentations (Presenting Author Underlined)*

10:00 **Pink Salmon Catches Throughout the Northern Pacific Continue to Set Record Highs Because of Climate... and Hatcheries.** Richard Beamish, *Department of Fisheries and Oceans, Nanaimo BC, Canada*

10:20 **When, Where, and Sometimes Why: Environmental Effects on Longfin Inshore Squid Distribution and Implications for Fisheries Management.** Owen C. Nichols, *School for Marine Science and Technology, University of Massachusetts – Dartmouth, 200 Mill Road – Suite 325, Fairhaven, MA, 02719, USA*

10:40 **The Influence of Temperature Variability on Life Histories Sets the Sensitivity of Atlantic Cod *Gadus morhua* to Fishing.** Francis Juanes, *University of Victoria, Victoria, BC V8W 3N5, Canada*

11:00 **Coffee Break**

11:20 **Theories on the Influence of Environment on Atlantic Sea Scallop Distribution, Abundance and Recruitment.** Kevin D. E. Stokesbury, *School for Marine Science and Technology, University of Massachusetts – Dartmouth, 200 Mill Road – Suite 325, Fairhaven, MA, 02719, USA*

11:40 **Effects of Climate Change on Fisheries Yields of Large Marine Ecosystems.** Kenneth Sherman, *NMFS-NOAA Narragansett Laboratory, Narragansett, RI, USA*

12:00 **The Utility of Environmental Predictors of Catch to Reduce Bycatch in the Northwest Atlantic Mid-Water Trawl Fishery.** N. David Bethoney, Kevin D. E. Stokesbury and Steven X. Cadrin, *School for Marine Science and Technology, University of Massachusetts – Dartmouth, 200 Mill Road – Suite 325, Fairhaven, MA, 02719, USA*

12:20 **Lunch Break**

2:00 **Evaluating Environmental Influence and Maturity on Growth and Subsequent Recruitment Dynamics in Georges Bank Haddock (*Melanogrammus aeglefinus*).** Mark Wuenschel<sup>1</sup>, Sandra Sutherland<sup>1</sup>, Richard McBride<sup>1</sup>, Elizabeth Brooks and Kevin Friedland<sup>2</sup>, <sup>1</sup>*National Marine Fisheries Service, Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA, 02543-1026, USA;* <sup>2</sup>*National Marine Fisheries Service*

*Northeast Fisheries Science Center, Narragansett Laboratory, 28 Tarzwell Drive,  
Narragansett, RI, 02882-1152, USA*

- 2:20 **Effect of a Changing Thermal Regime on Settlement Dynamics of Postlarval American Lobster, *Homarus americanus*, in Southern New England.** Kelly A. Whitmore<sup>1</sup> and Robert P. Glenn<sup>2</sup>, *Massachusetts Division of Marine Fisheries,*<sup>1</sup>*30 Emerson Ave, Gloucester, MA, 01930, USA;* <sup>2</sup>*1213 Purchase Street, New Bedford, MA, 02740, USA*
- 2:40 **Environmental Monitors on Lobster Traps: Fishermen Contributing to our Ocean Observing Systems.** James Manning, *Northeast Fisheries Science Center, NOAA Fisheries Service, 166 Water Street, Woods Hole, MA, 02543, USA*
- 3:00 **Effects of Fishing and Winter Temperature on Spotted Seatrout Survival.** Timothy A. Ellis<sup>1</sup>, Jeffrey A. Buckel<sup>1</sup>, and Joseph E. Hightower<sup>2</sup>, <sup>1</sup>*Center for Marine Sciences and Technology, Department of Biology, North Carolina State University, 303 College Circle, Morehead City, NC, 28557, USA;* <sup>2</sup>*U. S. Geological Survey, North Carolina Cooperative Fish and Wildlife Research Unit, North Carolina State University, Department of Biology, Campus Box 7617, Raleigh, NC, 27695, USA*
- 3:20 **Discussion on Environmental Factors (Moderated by Brian Rothschild)**
- 4:00 **Coffee Break**
- 4:20 **Whaleboat Races**
- 7:00 **Symposium Dinner**

*Thursday, June 28*

9:00 **Opening Remarks:** Dr. Brian Rothschild

9:10 **Keynote Speaker: Rebuilding Fish Communities: The Ghosts of Fisheries Past or the Virtue of Patience.** Jeremy Collie, *University of Rhode Island, Narragansett RI, USA*

*Oral Presentations (Presenting Author Underlined)*

10:00 **Consideration of Fishing and the Environment in Rebuilding Plans.** Steven X. Cadrin, *School for Marine Science and Technology, University of Massachusetts – Dartmouth, 200 Mill Road – Suite 325, Fairhaven, MA, 02719, USA*

10:20 **The Threshold to Allow a Fishery for Herring in Prince William Sound, Alaska.** Terry Quinn, *University of Alaska – Fairbanks, USA*

10:40 **Impacts of Ghost Fishing from American Lobster Traps.** Derek Perry<sup>1</sup>, Kelly Whitmore<sup>2</sup>, and Robert Glenn<sup>1</sup>, <sup>1</sup>*Massachusetts Division of Marine Fisheries, Invertebrate Fisheries Program, 1213 Purchase Street, New Bedford, MA, 02744, USA;* <sup>2</sup>*Massachusetts Division of Marine Fisheries, Invertebrate Fisheries Program, 30 Emerson Ave., Gloucester, MA, 01930, USA*

11:00 **Coffee Break**

11:20 **Patterns in Eastern Bering Sea Pollock Fishery Catch Rates Relative to Assessment and Quota Recommendations.** Jim Ianelli, *Alaska Fisheries Science Center, NOAA Fisheries Service, Seattle, WA, USA*

11:40 **Incorporating Environmental Effects in Stock Assessments: Methods, Limitations, and Future Directions.** Michael J. Wilberg, *Chesapeake Biological Laboratory, University of Maryland Center for Environmental Science, USA*

12:00 **The Overfishing Metaphor and the Ocean Environment.** Brian Rothschild, *School for Marine Science and Technology, University of Massachusetts – Dartmouth, 706 South Rodney French Boulevard, New Bedford, MA, 02744, USA*

12:20 **Lunch Break**

2:00 **Delineating Ecosystem Overfishing: Analysis of Fishing Pressure and Environmental Thresholds for Ecological Indicators.** Scott I. Large, Gavin Fay, Kevin Friedland, and Jason S. Link, *Northeast Fisheries Science Center, NMFS, Woods Hole, MA, 02543, USA*

2:20 **The “Butterfish Smackdown”: Steps Toward the Development of an Operational Seascape Ecology in Support of Ecosystem Management.** John Manderson<sup>1</sup>, Josh Kohut<sup>2</sup>, Greg DiDomenico<sup>3</sup>, and John Hoey<sup>4</sup>, <sup>1</sup>*Northeast Fisheries Science Center -*

*Behavioral Ecology, USA; <sup>2</sup>Rutgers University, USA; <sup>3</sup>Garden State Seafood Association; <sup>4</sup>Northeast Fisheries Science Center - Cooperative Research, USA*

- 2:40 **Length Related Capture of Fish by Otter Trawls: The Effect of Water Temperature and Tow Duration.** Pingguo He, *School for Marine Science and Technology, University of Massachusetts – Dartmouth, 706 South Rodney French Boulevard, New Bedford, MA, 02744, USA*
- 3:00 **Science, Sustainability and the Environment.** Thor Lassen, *Ocean Trust, 11921 Freedom Dr. Ste. 550, Reston, VA, 20190, USA*
- 3:20 **Discussion on Management Implications (Moderated by Steve Cadrin)**
- 4:00 **Closing Remarks**