

S4 FIS Topic Session

Ecosystem approach to fisheries: Improvements on traditional management for declining and depleted stocks

Co-Convenors: Yukimasa Ishida (Japan), Gordon H. Kruse (U.S.A.), Ted Perry (Canada), Vladimir I. Radchenko (Russia) and Chang-Ik Zhang (Korea)

An ecosystem approach to fisheries (EAF), which recognizes the complexity of ecosystems and the interconnections between its component parts, has been recently advocated by many fisheries management bodies. In PICES countries, some fisheries resources are in high abundance and healthy, but others are decreasing or already depleted. Most causes of stock declines can be ascribed to climate changes and overfishing. Stocks in declining or depleted conditions require prompt, appropriate management actions, perhaps including ecosystem approaches. This session invites papers that examine: (1) major factors responsible for the status of fish stocks, particularly those that are decreasing or depleted; (2) limits to traditional fishery management measures to address causes of stock declines; (3) new perspectives on fishery management that promote sustainable fishery management from an ecosystem perspective; and (4) case studies of rebuilding plans for depleted stocks – their successes and failures. Manuscripts contributed to this session will be considered for publication in the journal *Fisheries Research* following peer-review. Submission deadline of manuscripts is November 30, 2007.

Thursday, November 1, 2007 09:00 – 17:20

- 09:00 *Introduction by convenors*
- 09:10 **Stratis Gavaris (Invited)**
Science support for fisheries management decisions in an Ecosystem Approach context (S4-4201)
- 09:40 **R. Ian Perry, Benjamin Planque, Simon Jennings, Keith Brander, Philippe Cury and Christian Möllmann**
Sensitivity of marine systems to climate and fishing: Concepts, issues and management responses (S4-4203)
- 10:00 **Jae Bong Lee, Anne B. Hollowed and Chang-Ik Zhang**
Comparing ecosystem variations between eastern and western North Pacific using ecosystem indicators (S4-4428)
- 10:20 **Tetsuichiro Funamoto, Satoshi Honda, Keizo Yabuki and Akihiko Yatsu**
Suggestion of management measures for two walleye pollock stocks around northern Japan (S4-4258)
- 10:40 *Coffee / tea break*
- 11:00 **Alan Sinclair and Doug Swain (Invited)**
Collapse and lack of recovery of cod (*Gadus morhua*) in the Northwest Atlantic: Lessons for fisheries management (S4-4071)
- 11:30 **Vladimir I. Radchenko**
Problems of TAC forecast development for multi-species fisheries in the Sakhalin-Kuriles region (S4-4127)
- 11:50 **Hee Won Park, Chang-Ik Zhang, Suam Kim, Donald Gunderson, Jae Bong Lee and Jong Hee Lee**
Ecosystem-based fisheries resource assessment and management system in Korea (S4-4259)

- 12:10 **Masahide Kaeriyama and Hideaki Kudo**
Sustainable fisheries management of Pacific salmon (*Oncorhynchus* spp.) based on the ecosystem approach (S4-4066)
- 12:30 **Lunch**
- 14:00 **Kevin T. Hill (Invited)**
Decline and recovery of Pacific sardines along the Pacific coast of North America: The roles of climate and fishing (S4-4390)
- 14:30 **Ashleen J. Benson, Sean P. Cox and Aaron Springford**
An evaluation of stock structure in Pacific herring (S4-4122)
- 14:50 **Hiroshi Nishida, Masayuki Noto, Atsushi Kawabata and Chikako Watanabe**
Assessment of the Japanese sardine (*Sardinops melanostictus*) stock in the northwestern Pacific for Japanese management system (S4-4422)
- 15:10 **Melissa A. Haltuch, André E. Punt and Martin W. Dorn**
Evaluating biomass reference points in a variable environment (S4-4061)
- 15:30 **Coffee / tea break**
- 15:50 **Gordon H. Kruse and Jie Zheng**
Recovery of the Bristol Bay stock of red king crabs under a rebuilding plan (S4-4073)
- 16:10 **Inja Yeon, Mi Young Song, Myoung Ho Shon, Hak Jin Hwang and Yang Jae Im**
Possible new management measures for stock rebuilding of blue crab, *Portunus trituberculatus* (Miers), in western Korean waters (S4-4461)
- 16:30 **Thomas C. Wainwright, William T. Peterson, Peter W. Lawson and Edmundo Casillas**
Environmental indicators and Pacific salmon conservation (S4-4398)
- 16:50 **Weimin Quan, Liyan Shi and Yaqu Chen**
The food web in the Yangtze River estuary: A synthesis of existing knowledge (S4-4049)
- 17:10 **Summary and wrap up**

S4 Posters

- S4-4046 **Ronald W. Tanasichuk**
The effects of variations in euphausiid and Pacific hake biomasses on the productivity of British Columbian stocks of Pacific herring (*Clupea pallasii*)
- S4-4052 **Liyan Shi, Weimin Quan and Yaqu Chen**
Faunal utilization of created inter-tidal oyster reef in the Yangtze River estuary
- S4-4082 **Caihong Fu, Beiwei Lu and Jake Schweigert**
Searching for major factors responsible for the decline of the eulachon population in the Fraser River using artificial neural networks
- S4-4189 **Yongjun Tian**
Interannual-interdecadal variations in the abundance of spear squid *Loligo bleekeri* in the southwestern Japan/East Sea: Impacts of the late 1980s climatic regime shift and trawl fishing with recommendations for management

- S4-4190 **Yukimasa Ishida, Tetsuichiro Funamoto, Satoshi Honda, Keizou Yabuki, Hiroshi Nishida and Chikako Watanabe**
Review of Japanese sardine, chub mackerel, and walleye pollock fisheries management from the view point of ecosystem approach
- S4-4260 **Chang-Ik Zhang and Jong-Hun Na**
Biomass and acceptable biological yield of crucian carp (*Carassius cuvieri*) in the Namyang Estuary Reservoir
- S4-4278 **Carrie A. Holt, André Punt and Nathan Mantua**
Incorporating climate information into rebuilding analyses for overfished groundfish stocks
- S4-4325 **Man-Woo Lee and Chang-Ik Zhang**
Changes in the structure and function of the Southeastern Yellow Sea ecosystem: An application on the fisheries management
- S4-4344 **Sun Kil Lee, Young Il Seo, Joo Il Kim, Taek Yun Oh and Won Seok Yang**
Rebuilding stock of the Yeo-Ja Bay ecosystem in the Southern Sea of Korea – Dominant group and ecosystem structure of the Yeo-Ja Bay
- S4-4349 **Toyomitsu Horii and Yoshiyuki Nakamura**
An approach to recover abalone resources by TAC control based on RPS trends calculated with production model
- S4-4379 **William R. Bechtol and Gordon H. Kruse**
Environmental constraints to rebuilding of Kodiak red king crab
- S4-4392 **Chang-Ik Zhang, Jae Bong Lee, Sun Kil Lee and Bernard A. Megrey**
Structure and function of three marine ecosystems in Korea: A comparative study
- S4-4423 **Todd W. Miller, Koji Omori, Hideki Hamaoka and Hidejiro Onishi**
Marine versus terrestrial sources of production to the Seto Inland Sea, Japan
- S4-4459 **Inja Yeon, C.I. Zhang, M.H. Shon, Y.J. Im and H.J. Whang**
An ecosystem-based assessment of the blue crab stock and management strategy in the Yellow Sea
- S4-4488 **Peter S. Rand, Peter A. McHugh and Matthew Goslin**
Completion of a global assessment of sockeye salmon (*Oncorhynchus nerka*) status using IUCN criteria