

S5 FIS/CCCC/BIO Topic Session

Fisheries interactions and local ecology

Co-sponsored by ICES

Co-Convenors: Kerim Y. Aydin (U.S.A.), Masahide Kaeriyama (Japan), Jason Link (U.S.A.) and Elizabeth A. Logerwell (U.S.A.)

Ecosystem models are often employed to evaluate the effects of fishing and to distinguish natural variability from human impacts. These models typically operate at large spatial and temporal scales, which are appropriate for their goals and objectives. However, these models would benefit from better information on local-scale processes as there are likely to be bottlenecks at short time scales and small spatial scales that are critical to understanding recruitment variability. Similarly, there may be critical foraging interactions that happen at local scales, particularly for central place foragers such as marine mammals and seabirds. Small-scale effects of fishing such as “localized depletion” may have ecosystem-level consequences. More information on local-scale survival, foraging, movement, reproduction and pelagic habitat selection would allow food-web and population dynamics modelers to make better scenarios of the effects of natural variability and/or fishing on ecosystems. Papers are solicited on the following topics: (1) current ecosystem models and the assumptions that require further research; (2) techniques for assessing climate impacts on predator-prey interactions at top trophic levels; (3) techniques for assessing local-scale dynamics of survival, foraging, movement, reproduction and pelagic habitat selection; and (4) techniques for assessing prey field response to fishing.

Wednesday, October 31, 2007 09:00 – 15:40

- 09:00 **Introduction by convenors**
- 09:05 **Motoko R. Kimura and Hiroyuki Munehara (Invited)**
A breakdown of habitat isolation among coastal fish by artificial habitat modification (S5-4192)
- 09:35 **Mitsuhiro Nagata, Yasuyuki Miyakoshi, Takanori Iwao and Masahide Kaeriyama**
Survivals of Hokkaido chum salmon affected by coastal seawater temperature during their early ocean life (S5-4060)
- 09:55 **Ikue Mio, Hideaki Kudo and Masahide Kaeriyama**
Are foraging habits of Pacific salmon (*Oncorhynchus* spp.) reflected in food habits in the North Pacific? (S5-4090)
- 10:15 **Sangdeok Chung and Suam Kim**
Relationship between Pacific cod (*Gadus macrocephalus*) catch and environmental factors off eastern Korea (S5-4264)
- 10:35 **Coffee / tea break**
- 10:55 **Orio Yamamura (Invited)**
Assessment of predation mortality of juvenile pollock in the coastal area (S5-4281)
- 11:25 **Susanne F. McDermott, Elizabeth A. Logerwell, Ivonne Ortiz and V. Haist**
Fishery interaction and availability of Atka mackerel prey for Steller sea lions: Results from local abundance and movement study of Atka mackerel (S5-4062)
- 11:45 **Jeremy T. Sterling, Rolf R. Ream, Devin S. Johnson and Thomas S. Gelatt**
The role of physical processes in the summertime life of the northern fur seal (S5-4291)

- 12:05 **M. Elizabeth Connors and Peter T. Munro**
Localized depletion experiment for Bering Sea Pacific cod (S5-4370)
- 12:25 **Jason S. Link and Josef Idoine**
Mortality of shrimp *Pandalus borealis*: Local influence of predation in the Gulf of Maine (S5-4381)
- 12:45 **Lunch**
- 14:00 **Michel J. Kaiser, Jan G. Hiddink and Hilmar Hinz (Invited)**
Fishing and climate modifies habitat use and availability for fish (S5-4359)
- 14:30 **Jung Hwa Choi, Jong Hwa Park, Dae Soo Chang, Jung Nyun Kim, Hak Jin Hwang, Mi Young Song, Joo Il Kim, Young Il Seo, Sung Il Lee and Sang Chul Yoon**
Designing fish management boundaries in Korean waters using Self-Organizing Maps (SOM) (S5-4271)
- 14:50 **Bernard A. Megrey, Kenneth A. Rose, Shin-ichi Ito, Douglas E. Hay, Francisco E. Werner, Michio J. Kishi, Yasuhiro Yamanaka, Maki Noguchi-Aita, Jake F. Schweigert and Matthew B. Foster**
Using model experiments to explore the impact of basin-scale climate forcing on localized upper-trophic-level marine ecosystem production (S5-4389)
- 15:10 **B.K. Wells, J.C. Field, J.A. Thayer, C.B. Grimes, S.J. Bograd, W.J. Sydeman, F.B. Schwing and R. Hewitt**
Untangling the relationships between climate, prey, and top predators in an ocean ecosystem (S5-4454)
- 15:30 **Summary and wrap up**

S5 Posters

- S5-4042 **V.F. Bugaev**
The correlation between the abundance of sockeye salmon *Oncorhynchus nerka* of the Kamchatka River by periods of different state of stock abundance dynamics of Kamchatkan pink salmon *Oncorhynchus gorbuscha*
- S5-4043 **V.F. Bugaev, B.B. Vronsky, L.O. Zavarina and Zh. Kh. Zorbidi**
The analysis of the interactions between generations of the Kamchatka River salmon including sockeye, chinook, chum and coho
- S5-4188 **Sungtae Kim, Sukgeun Jung and Jinyoung Kim**
Distribution, feeding and growth of Japanese Spanish mackerel (*Scomberomorus niphonius*) in the southern Korean sea
- S5-4207 **Kimberly Rand**
Longitudinal growth differences in Atka mackerel (*Pleurogrammus monoptyerygius*): Using a bioenergetic model to identify underlying mechanisms
- S5-4212 **Paige Drobny, Brenda Norcross and Nate Bickford**
Age, growth and movement of the squid species *Berryteuthis magister* in the Eastern Bering Sea
- S5-4217 **Feng-ao Lin and Jingfeng Fan**
The analysis of reasons for mass-death of culturing pufferfish (*Fugu rubripes*) caused by 0# light oil spilled on the sea

- S5-4256 **Zhaohui Zhang, Shufeng Ye and Mingyuan Zhu**
Ecosystem services valuation of coastal aquaculture
- S5-4279 **Kenji Konishi, Tsutomu Tamura and Koji Matsuoka**
Recent feeding habits of sei whale *Balaenoptera borealis* in pelagic waters of the western North Pacific based on data collected from 2002 to 2006
- S5-4319 **Sung Il Lee, Hyung Kee Cha, Sang Chul Yoon, Young Seop Kim, Dae Soo Chang and Jae Hyeong Yang**
Age and growth of *Arctoscopus japonicus* in the East/Japan Sea
- S5-4368 **Shusaku Kobayashi, Takaomi Arai, Kentaro Honda, Yuji Noda and Kazushi Miyashita**
Brown trout (*Salmo trutta*) movements between a stream and the sea in Hokkaido, northern Japan
- S5-4372 **Jarrod A. Santora, Christian S. Reiss and Richard R. Veit**
Annual spatial variability of krill influences seabird foraging behavior near Elephant Island, Antarctica
- S5-4395 **Richard D. Brodeur and Cheryl A. Morgan**
The Columbia River plume as an ecotone and habitat for juvenile chinook salmon
- S5-4411 **L. Godbout, M. Trudel, J. Irvine, C. Wood, K. Larsen, K. McKeegan, M. Grove and A. Schmitt**
A stable isotope method to discriminate the origin of nerkids (*Oncorhynchus nerka*) in BC lakes
- S5-4427 **Sandi Neidetcher and Elizabeth A. Logerwell**
Spatial and temporal patterns in Pacific cod reproductive maturity in the Bering Sea
- S5-4490 **Oleg A. Ivanov and Vitaly V. Sukhanov**
Species structure of epipelagic nekton of the Okhotsk Sea