

Updates:

October 6, 2008 (S2, S6)

S2

Joseph Paimpillil and Kizekpat Balakrishnan (POSTER, CANCELLED)

Ground-water flux to inter-tidal regions and its impacts on coastal primary production

S6

Che Sun (ORAL, CANCELLED)

Upwelling of the subsurface Kuroshio water and its path on the East China Sea shelf (S6-5280)

Elena Vilyanskaya and Gennady Yurasov (POSTER -> ORAL)

The peculiarities of the coastal upwelling in Peter the Great Bay (S6-4982)

September 30 (FIS, W3)

FIS Paper Session

Edward J. Gregg and Andrew W. Trites (ORAL, CANCELLED)

Evaluating the effectiveness of fisheries restrictions intended to reduce competition with Steller sea lions

(*Eumetopias jubatus*) (FIS_P-5211)

Hyeok Chan Kwon and Chang-Ik Zhang (POSTER -> ORAL)

Maturation and spawning of black seabream, *Acanthopagrus schlegeli* in the Jeonnam marine ranching area of Korea (FIS_P-5185)

W3 Workshop

Shujiang Li, Jinping Zhao and Jie Su (ORAL, CANCELLED)

The warming evolution of the Intermediate Water in the Arctic (W3-5303)

Sei-Ichi Saitoh and Toru Hirawake (POSTER -> ORAL)

Preliminary results from the Oshoro-Marui IPY cruises in summer 2007 and 2008 (W3-5228)

Hongli Fu, Jinping Zhao and Jie Su (ORAL -> POSTER)

Study of polynya processes in the Bearing Sea using a high resolution dynamic-thermodynamic sea ice model (W3-5288)

Kenneth F. Drinkwater (POSTER -> ORAL)

The Ecosystem Studies of Subarctic and Arctic Regions (ESSAR) Consortium (W3-5114)

S1

Science Board Symposium

Beyond observations to achieving understanding and forecasting in a changing North Pacific: Forward to the FUTURE

Co-convenors: John E. Stein (SB), Michael J. Dagg (BIO), Gordon H. Kruse (FIS), Glen S. Jamieson (MEQ), Hiroya Sugisaki (MONITOR), Michael G. Foreman (POC), Bernard A. Megrey (TCODE), Harold P. Batchelder (CCCC), Michio J. Kishi (CCCC), Fangli Qiao (China), Sinjae Yoo (Korea) and Mikhail Stepanenko (Russia)

FUTURE (Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Marine Ecosystems), the new Science Program undertaken by PICES member countries, has the broad goals of: (1) understanding the responses of marine ecosystems in the North Pacific to climate change and human activities at basin-wide and regional scales; (2) providing forecasts of what might be expected based on a current understanding of how nature works; and (3) communicating this information effectively to its members and to society in general. Past advances in understanding marine ecosystems in the North Pacific have been largely based either on the direct analysis of observations, or on the development of conceptual and numerical models that help to describe the processes underlying the observations. Though these activities will continue to play an important role in FUTURE, the provision of forecasts and estimates of their associated uncertainties necessitates moving beyond observationally based understanding, so that ecosystem responses to natural and anthropogenic changes can be anticipated and communicated effectively to society. Presentations are invited to address the goals of FUTURE and the three key research questions that it identifies:

1. How do ecosystems respond to natural and anthropogenic forcing, and how might they change in the future?
2. What determines an ecosystem's intrinsic resilience and vulnerability to natural and anthropogenic forcing?
3. How do human activities affect coastal ecosystems and how are societies affected by changes in these ecosystems?

Presentations addressing other components of FUTURE such as: (1) communicating scientific information to governments, policy makers, and society at large and (2) forging partnerships with social scientists, are also welcome.

Monday, October 27, 2008 10:50 – 18:00

- 10:50 **Fangli Qiao, Zhenya Song, Changshui Xia and Yeli Yuan (Keynote)**
Wave-tide-circulation coupled model: To improve the forecasting ability for FUTURE
- 11:30 **Lawrence C. Hamilton (Invited)**
Ocean, fishery and society: Interconnections among systems in change (S1-5404)
- 11:55 **Eitaro Wada (Invited)**
Marine ecosystem studies of today and tomorrow with emphasis on the western North Pacific Ocean (S1-5220)
- 12:20 **Jeffrey J. Polovina, Melanie Abecassis, Evan A. Howell and Séverine Alvain**
Developing an understanding of future changes in the North Pacific Subtropical Gyre marine ecosystem (S1-5260)
- 12:40 **Lunch**
- 14:00 **J. Icarus Allen (Invited)**
On the simulation of the impacts of multiple climatic and anthropogenic drivers on marine ecosystems (S1-5136)
- 14:25 **Hiroaki Saito (Invited)**
A strategy for marine ecosystem studies in the first half of the 21st century (S1-5387)

- 14:50 **Emanuele Di Lorenzo, Jason Furtado and Niklas Schneider**
North Pacific decadal variability in the future (S1-5392)
- 15:10 **Shin-ichi Ito, Taizo Morioka, Yasuhiro Ueno, Satoshi Suyama, Masayasu Nakagami, Akihiro Shiomoto, Fumitake Shido and Michio J. Kishi**
Future projection of Pacific saury to climate change and its improvements by experimental and observational approaches (S1-5246)
- 15:30 **Harold (Hal) P. Batchelder, Michael Harte, David Ullman and William Peterson**
Bayesian decision support to improve flexibility and reduce uncertainty in ecological forecasting of coho salmon marine survival (S1-5378)
- 15:50 **Coffee / tea break**
- 16:10 **George Sugihara (Invited)**
Causality, prediction and nonlinearity in fisheries ... why adaptive fitting fails (S1-5492)
- 16:35 **Paul J. Harrison and Kedong Yin (Invited)**
Eutrophication impacts in Hong Kong waters are reduced by physical and chemical factors (S1-5150)
- 17:00 **Rong-shuo Cai, Qi-long Zhang and Ji-long Chen**
Spatial and temporal oscillations of SST and atmospheric circulation divergence in the offshore area of China and its adjacent ocean and their associations with the red tide (S1-5268)
- 17:20 **Joji Ishizaka**
Long-term change of primary production in the Yellow Sea and East China Sea (S1-5305)
- 17:40 **Song Sun, Chaolun Li, Fang Zhang and Yuanzi Huo**
A changing ecosystem: The Yellow Sea (S1-5295)

S1 Posters

- S1-5017 **Vladimir B. Darnitskiy and Maxim A. Ishchenko**
Some properties of oceanic waters off Japan
- S1-5145 **Lyudmila I. Mezentseva and Oleg V. Sokolov**
Change of weather components at the seashore of the Far East as a result of the changes in general circulation of atmosphere
- S1-5256 **Vadim V. Navrotsky**
On the role of ocean ecosystems in Global Climate Change
- S1-5285 **Sukgeun Jung, Dong-Woo Lee, Yeonghye Kim, Hyung-Kee Cha, Hak-Jin Hwang and Jeong-Yong Lee**
Contrasting recruitment of two gadoid species (*Gadus macrocephalus* vs. *Theragra chalcogramma*) to Korean coastal waters in relation to climate change
- S1-5354 **Vladimir Ponomarev, Elena Dmitrieva and Nina Savelieva**
Changing climate and teleconnections in the Asian Pacific

S2**MONITOR/TCODE/BIO Topic Session****Linking biology, chemistry, and physics in our observational systems - present status and FUTURE needs**

Co-Convenors: Hernan E. Garcia (U.S.A.), David L. Mackas (Canada), S. Allen Macklin (U.S.A.), Jeffrey M. Napp (U.S.A.), Young-Jae Ro (Korea) and Toru Suzuki (Japan)

Numerical models are becoming increasingly complex, attempting to integrate vertically and horizontally ecosystem forcing, processes and predictions across multiple trophic levels from bacteria to human populations. Data requirements for daily, seasonal, annual and decadal predictions differ according to single species, species assemblages or multi-trophic level interests. To add to the challenge, the types of sensors and frequency of measurements vary greatly across ecosystem components, particularly in the biological sector. This session encourages contributions that: (1) define and specify the types, frequency, duration and spatial resolution of observational data required for current numerical models; (2) review existing and emerging advanced technologies capable of supplying biomass and species or functional group information; (3) review existing and emerging data sources and technologies capable of integrating these data with physical and chemical information; and (4) showcase novel data assimilation techniques and formal organization of data or database frameworks that facilitate the operational use of observational data to predict the effects of anthropogenic and climate forcing on the major ecosystems of the North Pacific.

Thursday, October 30, 2008 09:00 – 17:30

- 09:00 *Introduction by convenors*
- 09:10 **Yasuhiro Yamanaka, Yoshie Naoki, Maki Noguchi Aita, Taketo Hashioka, Hiroshi Sumata, Naosuke Okada, Takeshi Okunishi and Shin-ichi Ito (Invited)**
Observational data for determining physiological parameters and validating model simulations: Suggestions by NEMURO developers (S2-5323)
- 09:40 **Francisco P. Chavez and Fei Chai (Invited)**
The realities of integrated measurement and modeling systems (S2-5439)
- 10:10 **S. Allen Macklin and Bernard A. Megrey**
The PICES Metadata Federation: Pacific-wide marine metadata discovery, management and delivery for FUTURE (S2-5269)
- 10:30 *Coffee / tea break*
- 10:50 **Young Jae Ro, Kwang Young Jung and Chung Ho Lee**
“Hebei Spirit” oil spill fate and trajectory modeling in the western coast of Korea, Yellow Sea (S2-5035)
- 11:10 **Jennifer Menkel and William T. Peterson**
Status of Krill (*Euphausia pacifica* and *Thysanoessa spinifera*) in the northern California Current EEZ: A review of sampling methods and data sets (S2-5374)
- 11:30 **Hiroya Sugisaki, Kiyotaka Hidaka, Tadafumi Ichikawa, Yutaka Hiroe and Yuuichi Hirota**
Introduction for long-term monitoring in the sardine spawning area: Seasonal and annual variations of plankton biomass and compositions (S2-5143)
- 11:50 **Yong Tang, Koji Iida, Tohru Mukai and Yasushi Nishimori**
Measurement of fish school abundances in shallow sea using omnidirectional multi-beam sonar (S2-5177)
- 12:10 **Zhen-dong Zhang, Shu-fen Wang and Ya-nan Zou**
DGGE technique and its application in marine environmental microbial diversity study (S2-5084)

- 12:30 **Lunch**
- 14:00 **Shin-ichi Ito, Yugo Shimizu and Shigeho Kakehi**
An application of a deeper-type underwater glider to observe temperature, salinity, DO and Chl-*a* distributions and its connection to an operational ocean forecasting model (S2-5247)
- 14:20 **James R. Christian**
Photosynthesis, photoacclimation, and ocean surface pCO₂ (S2-5168)
- 14:40 **Petr P. Tishchenko, Pavel Ya. Tishchenko and Alexey M. Koltunov**
Peculiarities in distribution parameters of the carbonate system of Amurskiy Bay (East/Japan Sea) during summer 2007 (S2-5311)
- 15:00 **Hao Ma, Mingduan Yin, Liqi Chen, Jianhua He, Wen Yu and Shi Zeng**
Upper ocean export of particulate organic carbon in the Bering Sea estimated from thorium-234 (S2-5001)
- 15:20 **Ziwei Yao, Zhongsheng Lin, Xindong Ma, Yanjie Wang and Dongmei Zhao**
Distribution maps of persistent organic substances in the coastal zone of China (S2-5226)
- 15:40 **Mikhail V. Simokon and Lidia T. Kovekovdova**
Assessment of trace metals contamination in surface sediments of Peter the Great Bay (Japan/East Sea) (S2-5218)
- 16:00 **Coffee / tea break**
- 16:20 **Georgiy Moiseenko, Vadim Burago, Igor Shevchenko and Yury Zuenko**
The application of empirical orthogonal functions in the ocean remote sensing (S2-5009)
- 16:40 **Sonia Batten, Bill Sydeman, Mike Henry, David Hyrenbach and Ken Morgan**
Ship of opportunity observations of mesoscale eddies in the Gulf of Alaska (S2-5147)
- 17:00 **Vladimir V. Bezotvetnykh, Evgeny A. Voytenko, Yury N. Morgunov and Dmitry S. Strobyskin**
Multifunction acoustic hardware and software system for support of works execution and studies in ocean shelf zones (S2-5008)
- 17:20 **Summary**

S2 Posters

- S2-5037 **Bin Liang, Yumin Yang, Hanpeng Jiang, Binxia Cao and Yaobing Wang**
DNA fingerprint via REP-PCR of *Escherichia coli* isolates from different point sources of fecal pollution in Jinzhou Bay of China
- S2-5039 **Hongbo Li and Yubo Liang**
The distribution character of Cyanobacteria *Synechococcus* sp. in the Northern Yellow Sea, China
- S2-5040 **Igor Burago, Georgiy Moiseenko, Olga Vasik and Igor Shevchenko**
From metadata federation to geospatial portal
- S2-5054 **Igor D. Rostov, Natalia I. Rudykh, Vladimir I. Rostov and Valentina V. Moroz**
Oceanographic atlas of the South China Sea
- S2-5056 **Evgeniya A. Tikhomirova**
Oceanographic regime of Peter the Great Bay (Sea of Japan)
- S2-5065 **Qilun Yan and Gengchen Han**
National coastal ecological system monitoring program–SOA
- S2-5081 **Dongmei Li, Sha Liu, Yanan Yu, Xingbo Wang, Tao Song, Xing Miao, Guanhua Chen and Yubo Liang**
Real-time PCR for quantification of the protistan parasite *Perkinsus olseni* in Manila Clam *Ruditapes philippinarum*
- S2-5129 **Anatoly Obzhirov, Renat Shakirov, Olga Vereschagina, Natalia Pestrikova, Anna Venikova, Olesia Yanovskaja and Elena Korovitskaja**
Methane investigation in water column and sediment in the Okhotsk Sea
- S2-5138 **Renat B. Shakirov, Anatoly Obzhirov, Jens Greinert and Urumu Tsunogai**
Methane venting, gas hydrates and mud volcanoes linked to the oil-gas accumulations in the Sea of Okhotsk and Sakhalin Island
- S2-5146 **Avianna F. Zhukovskaya, Nina N. Belcheva and Viktor P. Chelomin**
The role of high molecular weigh proteins in response to cadmium in scallop *Mizuhopecten yessoensis*
- S2-5182 Joseph Paimpillil and Kizekpat Balakrishnan (CANCELLED)**
Ground-water flux to inter-tidal regions and its impacts on coastal primary production
- S2-5195 **Valentina V. Slobodskova, Evgeniya E. Solodova and Viktor P. Chelomin**
DNA damage (Comet Assay) as a biomarker of Cd exposure in 1-year-old marine seed scallops *Mizuhopecten yessoensis*
- S2-5209 **In-Seong Han, Takeshi Matsuno, Tomoharu Senjyu, Young-Sang Suh and Ki-Tack Seong**
Behavior of a low salinity water mass during summer in the South Sea of Korea using *in-situ* observations
- S2-5210 **In-Seong Han, Young-Sang Suh, Lee-Hyun Jang and Ki-Tack Seong**
Ship of opportunity monitoring for short-term variability of the thermohaline front across the Jeju Strait
- S2-5242 **Sergey Kamenev and Alexander Tagiltsev**
High-resolution acoustic complex for marine environment monitoring
- S2-5255 **Xindong Ma, Zhongsheng Lin, Liangliang Chu and Ziwei Yao**
Distribution and sources of typical persistent organic pollutants in surface sediments from the southern Yellow Sea
- S2-5291 **Akira Nakadate, Hiroyuki Sugimoto and Naotaka Hiraishi**
Improvement of the ocean CO₂ flux analysis for the subtropical North Pacific Ocean

- S2-5294 **Daoming Guan, Huade Zhao and Ziwei Yao**
Distribution and flux of nitrous oxide in the Liaohe Estuary
- S2-5343 **Alexey V. Bulanov, Pavel A. Salyuk, Alexey A. Ilin and Sergey S. Golik**
Application of efficient optical methods for determination of some major chemical components in seawater and phytoplankton
- S2-5424 **Shu-Qi Deng, Xue-Kun Li, Xin-Liang Lin, Bao-Hui Li, Xu Wang and Man-Li Wang**
Automatic acquisition of air, ocean and ice temperature fields and ice thickness images in the Bohai Sea
- S2-5457 **Sarah Ann Thompson, William J. Sydeman, Franklin B. Schwing, John L. Largier and William T. Peterson**
The California Current Integrated Ecological Database (CCIED): Linking ocean observing with Integrated Ecosystem Assessments (IEA)
- S2- 5500 **Zhongqiang Li, Zhiguo Bu and Wenlin Cui**
Demonstration system of real-time monitoring eco-environment of the Bohai Sea

S3**MEQ Topic Session****Species succession and long-term data set analysis pertaining to harmful algal blooms**

Co-Convenors: Hak-Gyoon Kim (Korea) and Mark L. Wells (U.S.A.)

Increasing numbers of harmful algal bloom (HAB) events in many coastal locations are a result of significant changes in the dominant species compared to earlier periods. These changes may stem from introductions of new species or from range extensions, but they seem more likely to have arisen from changes in the environmental conditions that promote the dominance of a particular HAB species. Often, it has been concluded that anthropogenic influences on hydrology, land-use, nutrient inputs, *etc.* are the root cause of these changes, but there are examples of HAB incursions into regions that lack these pressures. An ecosystem approach focusing on decadal-scale changes in environmental conditions and planktonic species composition may provide some clarity on the causes of intensified HAB events. Talks on physical-scale to nutrient-scale factors that may affect species succession towards HAB species dominance are especially welcome.

Tuesday, October 28, 2008 09:00 – 12:35

- 09:00 **Introduction by convenors**
- 09:05 **William Sunda, D. Rance Hardison and Kyle Shertzer (Invited)**
Positive feedback and the development of ecosystem disruptive algal blooms (S3-5003)
- 09:30 **Jinhui Wang, Yanqing Wu, Zhien Li and Lingyun Xiang**
The succession of bloom caused species: A result of complexity and variability of Changjiang estuary ecosystem (S3-5274)
- 09:50 **Hak-Gyoon Kim, Heon-Meen Bae, Chang-Kyu Lee, Sam-Geun Lee, Yang-Soon Kang, Young-Tae Park, Wol-Ae Lim, Sook-Yang Kim, Chang-Su Jung, Jeong-Min Shim and Yoon Lee**
An overview on the species succession of HABs in Korean coastal waters for the last three decades (S3-5094)
- 10:10 **Kedong Yin**
Long-term trend in phytoplankton species composition in the Pearl River estuarine coastal waters during 1991-2004 (S3-5313)
- 10:30 **Coffee / tea break**
- 10:50 **Songhui Lu (Invited)**
Ecological study of a *Karenia mikimotoi* bloom in the East China Sea in 2005 (S3-5469)
- 11:15 **Tatiana Yu. Orlova, Inna V. Stonik and Olga G. Shevchenko (presented by T. Morozova)**
Long-term changes in the phytoplankton of the coastal waters off Vladivostok (Amurskii Bay, the Sea of Japan), 1992-2007 (S3-5055)
- 11:35 **Raphael Kudela, Vera L. Trainer, Grant Pitcher, Teresa Moita, P. Figueiras, Trevor Probyn and Theodore J. Smayda**
GEOHAB Core Research Project – Species succession of harmful algal blooms in upwelling systems (S3-5458)
- 11:55 **Renyan Liu and Yubo Liang**
The review of study on shellfish poisoning toxins in China (S3-5438)
- 12:15 **Feng-ao Lin, Xing-wang Lu, Hao Luo and Ming-hui Ma**
The historical and present situation of the red tide and its characteristics in the Bohai Sea of China (S3-5069)

S3 Posters

- S3-5071 **Olga I. Nedashkovskaya, Seyng Bum Kim, Makoto Suzuki and Anna M. Stenkova**
Taxonomic diversity and ecophysiology of bacteria of the phylum *Bacteroidetes*, isolated from five algal species inhabited the Sea of Japan
- S3-5101 **Yaqu Chen, Liyan Shi and Weimin Quan**
Ecological restoration of an artificial lagoon in the Hangzhou Bay, Shanghai
- S3-5384 **David G. Foley** (*also gives oral presentation in the HAB Section Meeting, October 26*)
Data integration to help identify and monitor harmful algal blooms along the west coast of North America
- S3-5451 **Mingyuan Zhu, Ruixiang Li and Zongling Wang** (*also gives oral presentation in the HAB Section Meeting, October 26*)
Study on growth of macro green algae *Enteromorpha prolifera*
- S3-5504 **Aijun Zhang, Hong-Liang Zhang and Zijun Xu**
Research on the characteristics of red tides in Qingdao

S4**FIS Topic Session****Institutions and ecosystem-based approaches for sustainable fisheries under fluctuating marine resources**

Co-Convenors: David L. Fluharty (U.S.A.), Xianshi Jin (China), Mitsutaku Makino (Japan), Vladimir I. Radchenko (Russia), Laura Richards (Canada) and Chang-Ik Zhang (Korea)

In PICES member 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 management actions based on sound science. This session will provide opportunities to address such questions as: (1) How do current fishery institutions address sustainable fisheries and what institutional changes may be necessary to fully implement an ecosystem-based approach to fisheries management? (2) What are the roles of fishers and government concerning sustainable fisheries under fluctuating resources? (3) How should fishery management strategies recognize and address changes in productivity prior to, during and after regime shifts? and (4) What kind of information and research activities are needed to support sustainable fisheries management in an ecosystem context, given regime shifts? This session encourages papers addressing institutions, management strategies, and research supporting sustainable fisheries management of fluctuating marine resources using ecosystem-based approaches. Lessons from other marine ecosystems are invited for comparison to the PICES region. A publication in a special issue of a primary journal or in the PICES Scientific Report Series is intended as an outcome of the session.

Wednesday, October 29, 2008 09:00 – 15:40

- 09:00 *Introduction by convenors*
- 09:05 **Keith R. Criddle (Invited)**
Management of linked nonstationary dynamic bioeconomic systems (S4-5465)
- 09:30 **Jake Rice**
The role of marine science in promoting policy coherence across marine management and conservation institutions (S4-5474)
- 09:50 **Takaomi Kaneko, Takashi Yamakawa and Ichiro Aoki**
Fisheries management by a non-cooperative income pooling system as a remedy for the “tragedy of the commons” (S4-5127)
- 10:10 **Inja Yeon, Chang-Ik Zhang, Jae Bong Lee, Hak-Jin Hwang, Jong-Bin Kim, Myoung-Ho Sohn, Mi-Young Song, Heeyong Kim and Yi-Un Kim**
Korean institutional and ecosystem-based approaches for sustainable fisheries under fluctuating marine resources (S4-5445)
- 10:30 *Coffee / tea break*
- 10:50 **Akihiko Yatsu (Invited)**
Fisheries management and ecosystem regime shifts: Lessons learned from the Kuroshio/Oyashio current system (S4-5169)
- 11:15 **Minling Pan and Shichao Li**
Fisheries policy designs in response to climate changes – A case study of the Hawaii-based longline swordfish fishery (S4-5119)
- 11:35 **Jie Zheng, Gordon H. Kruse and M.S.M. Siddeek**
Could the collapse of the Bristol Bay red king crab stock in the early 1980s have been avoided? – A case study for ecosystem-based management (S4-5052)

- 11:55 **John K. Keesing, Fred E. Wells and Tennille R. Irvine**
Long-term stability of coastal molluscan fisheries resources and biodiversity aided by effective spatial and temporal management intervention (S4-5478)
- 12:15 **Weimin Quan, Liyan Shi and Yaqu Chen**
Faunal utilization of created intertidal oyster (*Crassostrea rivularis*) reef in the Yangtze River estuary, China (S4-5100)
- 12:35 **Lunch**
- 14:00 **Masahide Kaeriyama, Hyunju Seo and Shigehiko Urawa**
Situation and perspective on production trends of Pacific salmon in the North Pacific (S4-5207)
- 14:20 **Vladimir I. Radchenko**
New principles of Pacific salmon fishery management on the Russian Far East (S4-5491)
- 14:40 **Hee Won Park and Chang-Ik Zhang**
Ecosystem-based fisheries resource assessment and management system in Jeonnam marine ranching in Korea (S4-5172)
- 15:00 **Chang-Ik Zhang, Anne B. Hollowed, Jennifer Boldt, Pat Livingston and Jim Ianelli**
An ecosystem-based risk assessment for the eastern Bering Sea trawl fishery (S4-5137)
- 15:20 **Chih-hao Hsieh, Christian N.K. Anderson, Stuart A. Sandin, Roger Hewitt, Anne B. Hollowed, John Beddington, Robert M. May and George Sugihara**
Fishing effects enhanced variability and sensitivity of exploited fish populations (S4-4997)

S4 Posters

- S4-5070 **Yongjun Tian, Hideaki Kidokoro and Tadanori Fujino**
Long-term variability of demersal fish community in the Japan Sea: Impacts of the climatic regime shifts and trawl fishing with recommendations for management
- S4-5173 **Jae Bong Lee, Hee Won Park and Chang-Ik Zhang**
Relative states of exploited Korean coastal marine ecosystems using multiple ecological indicators
- S4-5243 **Chieko Kato, Takashi Yamakawa and Ichiro Aoki**
Construction of spatial distribution model for an appropriate estimation of fisheries resources abundance in the East China Sea and the Yellow Sea
- S4-5397 **Young Il Seo, Joo Il Kim, Taeg Yun Oh, Sun Kil Lee and Seung Jong Lee**
Ecosystem approaches to fisheries resources rebuilding assessment for *Octopus minor* in Korea
- S4-5405 **Hyunju Seo, Hideaki Kudo, Sukyung Kang and Masahide Kaeriyama**
Spatiotemporal change in growth pattern of Japanese and Korean chum salmon

S5**MEQ/FIS Topic Session****Mariculture technology and husbandry for alternate and developing culture species**

Co-Convenors: Ingrid Burgetz (Canada), Shuanglin Dong (China), Toyomitsu Horii (Japan) and Hyun-Jeong Lim (Korea)

After considering the recommendations of the Study Group on *Marine Aquaculture and Ranching in the PICES region*, PICES representatives have agreed that they share a common interest in the development of a highly efficient, environmentally friendly and diverse aquaculture industry. The diversification of aquaculture operations through the culture of new species and the use of innovative grow out technologies is of world-wide interest to both industry investors and the agencies responsible for ecosystem protection. New species and technologies may offer economic opportunities while providing solutions to the perception that current aquaculture practices threaten natural habitat and wild stocks. In many Pacific Rim countries recent developments of effective and efficient fish feed, development of animal husbandry protocols to ensure fish health and welfare, use of biotelemetry procedures to evaluate grow out facilities from the perspective of the fish, and advances in reproductive physiology using state-of-the-art molecular techniques show promise for enabling the socio-economic acceptance of aquaculture operations while preventing or mitigating environmental impacts. A variety of tools presently exist that permit the modeling of environmental risk from these developments and the subsequent incorporation of risk into an ecosystem management scheme. We encourage presentations that highlight scientific developments in the field of mariculture, particularly those that support the diversification of the industry and enable sustainable development while serving to protect natural ecosystems and wild stocks.

Wednesday, October 29, 2008 09:00 – 15:30

- 09:00 **Introduction by convenors**
- 09:05 **Shigenori Suzuki, Maria Del Mar Ortega-Villaizan Romo, Takashi Ichikawa, Tadashi Andoh, Naoto Murakami, Taizou Morioka, Kyouhei Fukunaga, Takahiro Matsubara, Sachio Sekiya, Takuma Sugaya and Nobuhiko Taniguchi (Invited)**
Current situation in stock enhancement of barfin flounder *Verasper moseri* in Japan (S5-5350)
- 09:30 **Kwang Hoon Kim and Chang-Ik Zhang**
Growth of cultured and wild black seabream in the coastal water of Yeosu, Korea (S5-5197)
- 09:50 **Nikolina P. Kovatcheva, Roman M. Vasilyev, Ivan A. Zagorsky, Sergey V. Kholodkevitch and Aleksey V. Ivanov**
Monitoring of the physiological state of red king crab (*Paralithodes camtschaticus*) in artificial conditions (S5-5049)
- 10:10 **Valeria E. Terekhova and Natalya L. Bel'kova**
Struggle against skin ulceration disease of cultivated sea cucumber *Apostichopus japonicus* juveniles (S5-5179)
- 10:30 **Coffee / tea break**
- 10:50 **Moira Galbraith and David L. Mackas**
Distribution of planktonic larval sea lice (*Lepeophtheirus salmonis*) in the Broughton Archipelago, British Columbia, Canada (S5-5433)
- 11:10 **Xiutang Yuan, Yubo Liang, Mingjun Zhang, Dan Liu and Daoming Guan**
In situ study on self-pollutant loading in suspension aquaculture system of Japanese scallop *Patinopecten yessoensis* from Changhai sea area, North Yellow Sea, China (S5-5038)
- 11:30 **Katsuyuki Abo, Toshinori Takashi and Hisashi Yokoyama**
Environmental indicators and modeling studies for assessing sustainability of marine aquaculture (S5-5215)
- 11:50 **Larissa A. Gayko**
Marine climatology – New concept of agricultural meteorology studying interrelation between

environment factors and sea farming efficiency (S5-5030)

12:10

Lunch

14:00

Ingrid Burgetz, Jay Parsons and Steve MacDonald

Ecosystem-based approaches and environmental interactions of marine aquaculture: Opportunities and priorities from a Canadian perspective (S5-5456)

14:20

Kevin H. Amos

Interactions between marine aquaculture and marine ecosystems: Infectious aquatic pathogens and disease (S5-5437)

14:40

Open discussion on objectives and terms of reference for a proposed PICES Working Group on *Environmental Interactions of Marine Aquaculture*

S5 Posters

S5-5011

Chunjiang Guan, Qing Liu, Peng Li and Donzhi Zhao

Study on using *Sargassum thunbergii* to purify aquaculture water of sea cucumbers in mesocosm experiment

S5-5024

Galina S. Gavrilova

Application of the some mariculture methods in *Apostichopus japonicus* population restoration

S5-5031

Larissa A. Gayko

Influence of environmental factors in forecasting mollusks yield on marine farms (for Possyet Bay, Sea of Japan)

S5-5058

Shu-Xi Liu, Guo-fan Zhang, Xiao Liu and Wen-Xin Yin

Self-fertilization family establishment and its depression in bay scallop *Argopecten irradians* from different growing areas

S5-5064

Ludmila S. Dolmatova, Olga A. Zaika and Valeria V. Romashina

Cytokine production in coelomocytes of the holothurian *Eupentacta fraudatrix* and seastar *Asterias amurensis*

S5-5083

Yubo Liang, Dongmei Li, Sa Liu, Xingbo Wang, Tao Song, Xing Miao, Guanhua Chen and Guize Liu

Spatial distribution of *Perkinsus olseni* in the Manila clam *Ruditapes philippinarum* along Chinese coast

S5-5111

Donghui Xu and Guangxing Liu

Experiment on the rearing of larval Japanese flounder, *Paralichthys olivaceus* with *Schmackeria poplesia* (Copepoda: Calanoida)

S5-5485

Jeong Hee Nam, Yun Joon Park and Hyun Do Jeong

Characterization of the repeating sequence present in the specific genomic ORF region of iridovirus

S5-5486

Ju Heon Kim and Hyun Do Jeong

Molecular cDNA cloning and analysis of the organization and expression of immune genes from rock bream (*Oplegnathus fasciatus*) infected by Iridovirus

S5-5487

Ki Won Shin and Hyun Do Jeong

Megalocytivirus susceptible for freshwater Pearl gourami (*Trichogaster leeri*) have a risk of transmission to seawater rock bream (*Oplegnathus fasciatus*)

S5-5488

Kwang Il Kim, Ji Woong Jin and Hyun Do Jeong

Molecular characterization of Noroviruses in various samples from the southeastern coast of Korea

S5-5489

Young Jin Kim, Lyu Jin Jun and Hyun Do Jeong

Quantification of various tet genes in tetracycline resistant bacteria from microflora in fish

S6**POC Topic Session
Coastal upwelling processes and their ecological effects**

Co-Convenors: Tal Ezer (U.S.A.), Vyacheslav Lobanov (Russia) and Xingang Lü (China)

Upwelling is a key process in marine ecosystems linking physical oceanography, chemistry, and marine ecology. It brings rich nutrient water to the upper ocean so it has great impacts upon fisheries in these regions and on the ecological environment, and may also provide a suitable environment for harmful algal blooms. This session will focus on three aspects of upwelling: (1) observations, numerical modeling and mechanism analysis of upwelling and related processes; (2) the quantitative evaluation of upwelling on marine ecology (biological production, diversity, *etc.*); and (3) changes in upwelling systems as a result of climate change. The session should be helpful for the ecosystem-based management of the marine environment.

Wednesday, October 29, 2008 09:00 – 15:30

- 09:00 *Introduction by convenors*
- 09:05 **Jianping Gan, Anson Cheung, L. Li, L. Liang, X. Guo and D. Wang (Invited)**
Alongshore variability of upwelling induced by variable shelf topography and river plume in the northeastern South China Sea (S6-5156)
- 09:30 **Pifu Cong, Dongzhi Zhao, Limei Qu and Changan Liu**
Analysis of coastal upwelling and its ecological impacts in the China Sea using remote sensing (S6-5047)
- 09:50 **Xingang Lü, Fangli Qiao and Changshui Xia**
Numerical simulation of the summertime surface cold patches and upwelling in the Yellow Sea (S6-5296)
- 10:10 **Elena A. Schtraikhert, Sergey P. Zakharkov and Tatyana N. Gordeychuk**
Chlorophyll-*a* concentration at wind-induced upwelling regions in Peter the Great Bay in 2003-2007 (S6-5080)
- 10:30 *Coffee / tea break*
- 10:50 **Tal Ezer, Digna T. Rueda-Roa and Frank Muller-Karger (Invited)**
Unusual mechanisms for driving coastal upwelling and near-shore currents: Examples from the Caribbean Sea and biological consequences (S6-5004)
- 11:15 **John A. Barth, F. Chan, Stephen D. Pierce, R. Kipp Shearman, Anatoli Y. Erofeev, Laura Rubiano-Gomez and Justin Brodersen**
Interannual variability and modeling of upwelling-driven shelf hypoxia off the central Oregon coast (S6-5375)
- 11:35 **Michael G. Foreman, Wendy Callendar, Amy MacFadyen and Barbara Hickey**
Present and future upwelling off the entrance to Juan de Fuca Strait (S6-5088)
- 11:55 **Albert J. Hermann, Sarah Hinckley, Elizabeth L. Dobbins, Dale B. Haidvogel, Nicholas A. Bond, Phyllis J. Stabeno and Calvin Mordy**
Significance of curl-driven upwelling to production in the Coastal Gulf of Alaska (S6-5372)
- 12:15 **Zhongyong Gao and Liqi Chen**
The different water masses of the Bering Strait throughflow and their mixing on the way to the Arctic Ocean (S6-5198)
- 12:35 *Lunch*

- 14:00 **Steven J. Bograd, Isaac Schroeder, Nandita Sarkar, William J. Sydeman and Franklin B. Schwing (Invited)**
The phenology of coastal upwelling in the California Current: Interannual variability and ecosystem consequences (S6-5163)
- 14:25 **Elena Vilyanskaya and Gennady Yurasov (poster -> oral)**
The peculiarities of the coastal upwelling in Peter the Great Bay (S6-4982)
- 14:45 **Hee Dong Jeong, Yang Ho Choi and Chang Su Jeong**
Cold water appearance in the southwestern coast of Korea in summer (S6-5332)
- 15:05 **Vyacheslav Lobanov, Vladimir Zvalinsky, Pavel Tishchenko, Anatoly Salyuk, Svetlana Y. Ladychenko and Aleksandr F. Sergeev**
Coastal upwelling and its ecological effects in the northwestern Japan Sea (S6-5348)
- 15:25 **Closing remarks**

S6 Posters

- S6-4985 **Li-Feng Lu and John Z. Shi**
The dispersion, mixing, stratification and de-stratification within the plume of the Changjiang River estuary, East China Sea: Under the action of combined tidal constituent and steady winds in the flood and dry seasons
- S6-5010 **Huasheng Hong, Xin Liu and Bangqin Huang**
Seasonal and interannual variations of phytoplankton in the southern Taiwan Strait
- S6-5060 **Victor Kuzin, Elena Golubeva and Gennady Platov**
Simulation of the Bering Sea water propagation to the Arctic-North Atlantic
- S6-5072 **Fedor F. Khrapchenkov**
The upwelling effect on the north shelf area of Sakhalin Island based on hydrological measurements and satellite imaging data (2005-2007)
- S6-5073 **Fedor F. Khrapchenkov and Nadezda M. Dulova**
Seasonal variability of water currents and temperature in Peter the Great Bay of the Sea of Japan in 2004 - 2007
- S6-5091 **Svetlana Y. Ladychenko, Vyacheslav B. Lobanov and Olga O. Trusenkov**
Mesoscale eddy dynamics off Peter the Great Bay, northwestern Japan Sea
- S6-5133 **Georgy Shevchenko, Valery Chastikov and Elena Vilyanskaya**
Wind-induced autumn upwelling near western coast of Sakhalin Island
- S6-5204 **Xueen Chen and Yunwei Yan**
Numerical simulation of Lagrangian residual currents in the Changjiang Estuary, Hangzhou Bay and their adjacent sea
- S6-5206 **K. Muni Krishna**
Coastal upwelling activity along the Central East coast of India in a warming environment
- S6-5227 **Alexander Romanov, Alexander Tsoy and Georgy Shevchenko**
Eddies determination in the North Kuril area from satellite altimetry, SST and chlorophyll-*a* data
- S6-5315 **Zhiliang Liu**
Effects of tidal-induced upwelling on coastal circulations of the southern Yellow Sea: A model study

S7**CCCC/POC Topic Session****Marine system forecast models: Moving forward to the FUTURE**

Co-Convenors: Michael G. Foreman (Canada), Thomas C. Wainwright (U.S.A.), Hao Wei (China), Yasuhiro Yamanaka (Japan), Sinjae Yoo (Korea) and Yury I. Zuenko (Russia)

As marine system models mature, they are increasingly used to forecast future conditions, both for understanding potential effects of climate change and for projecting system responses to management activities. In particular, the PICES FUTURE Program is focused on forecasting and understanding the responses of North Pacific marine systems to climate change and human activities. This work will reach beyond the models currently used by the PICES community to include models that provide system forecasts, assess uncertainty, and link together multiple levels of system organization. Achieving meaningful forecasts that are useful for management of marine resources will require cross-disciplinary approaches that link processes ranging from atmospheric and ocean physics, through biology to socio-economic systems. This session will focus on multidisciplinary coupled models designed to forecast marine systems in the PICES region, including both strategic (long-term) and tactical (short-term) forecasts linking across two or more disciplines (such as physical oceanography, climate, ecosystem dynamics, marine resource management, or socio-economic systems). Presentations describing approaches to assessing and communicating the reliability (or uncertainty) of coupled marine system forecasts are particularly encouraged.

Friday, Oct. 31, 2008 09:00 – 17:30

- 09:00 **Introduction by convenors**
- 09:05 **Kenneth F. Drinkwater (Invited)**
Requirements for forecasting marine systems – A non-modeller's view (S7-5461)
- 09:30 **Caihong Fu, Yunne Shin and Angelica Peña**
Towards end-to-end modeling for investigating the effects of climate and fishing in the Strait of Georgia ecosystem, Canada (S7-5087)
- 09:50 **Maria Rebecca A. Campos**
Moving forward to the future: Bioeconomic modelling of fishery conservation policies in the Philippines (S7-4983)
- 10:10 **Liang Zhao, Hao Wei, Zhenyong Wang and Yuheng Wang**
Simulation on ecosystem evolution of Jiaozhou Bay for recent 40 years (S7-5023)
- 10:30 **Coffee / tea break**
- 10:50 **Hao Wei and Liang Zhao**
Ecosystem modeling studies in the coastal water of China (S7-4994)
- 11:10 **Xueen Chen and Jia Gao**
The hydrometeorology and the biological environment of Bohai (S7-5115)
- 11:30 **Albert J. Hermann and Bernard A. Megrey**
Examining the predictability limits of NPZ-fish dynamics in the Coastal Gulf of Alaska and the Bering Sea using a numerical model (S7-5371)
- 11:50 **Yury I. Zuenko, Natalia T. Dolganova and Victoria V. Nadtochy**
Forecasting of climate change influence on zooplankton in the Japan/East Sea (S7-5230)
- 12:10 **Hiroshi Sumata, Taketo Hashioka, Takashi T. Sakamoto and Yasuhiro Yamanaka**
Application of 3-D NEMURO to an eddy-permitting general circulation model for the global domain (S7-5167)

- 12:30 **Lunch**
- 14:00 **Sinjae Yoo, Ig-Chan Pang, Sung-Jun Pang and Jisoo Park**
Wind-driven coastal upwelling and offshore summer phytoplankton blooms on the East China Sea shelf (S7-5266)
- 14:20 **Shiliang Shan, Huaming Yu, Xueen Chen and Jinrui Chen**
Three-dimensional high-resolution numerical study of the tide and tidal current in the Jiaozhou Bay and Olympic sailing site (S7-5265)
- 14:40 **Liying Wan, Jiang Zhu, Laurent Bertino and Hui Wang**
Initial ensemble generation and validation for ocean data assimilation using HYCOM in the Pacific (S7-5092)
- 15:00 **Zhenya Song and Fangli Qiao**
The improvement of the simulated sea surface temperature seasonal cycle in the equatorial eastern Pacific by surface wave-induced vertical mixing (S7-5125)
- 15:20 **Qi Shu, Fangli Qiao, Zhenya Song, Changshui Xia and Yongzeng Yang**
The improvement of MOM4 by adding wave-induced mixing (S7-5290)
- 15:40 **Kentang Le, Peng Qi and Qinzhen Liu**
A project for Fine Technology of 4-D Assimilation of Temperature and Salinity (S7-5144)
- 16:00 **Coffee / tea break**
- 16:20 **Xunqiang Yin, Fangli Qiao, Yongzeng Yang and Changshui Xia**
Ensemble adjustment Kalman filter study for Argo data (S7-5283)
- 16:40 **Thomas C. Wainwright, Jim J. Colbert and Bernard A. Megrey**
Integrating ocean system models using a software framework (S7-5159)
- 17:00 **Discussion**

S7 Posters

- S7-5002 **Evgeniya A. Tikhomirova and Vladimir I. Dulepov**
Model for estimation of primary production
- S7-5013 **Svetlana P. Shkorba**
Probabilistic forecast for the ice cover evolution in the Sea of Japan
- S7-5170 **Yasumasa Miyazawa, Yoshikazu Sasai and Kazuo Nadaoka**
Toward a data-assimilation system for marginal seas in the SEA-WP region
- S7-5176 **Nadezda M. Vakulskaya**
Technology of a large-scale mathematical model of ice spatio-temporal dynamics for the Bering Sea
- S7-5205 **Maki Noguchi Aita, S. Lan Smith, Michio J. Kishi and Yasuhiro Yamanaka**
Effects of iron on spatial and temporal phytoplankton distribution using a global 3-D ecosystem model (Fe-NEMURO)
- S7-5293 **Xiuhua Yan**
A modeling study of phytoplankton dynamics in Xiamen Bay

S8

MEQ Topic Session Consequences of non-indigenous species introductions

Co-Convenors: Blake Feist (U.S.A.) and Mingyuan Zhu (China)

Non-indigenous species (NIS) are ubiquitous throughout the world's marine, coastal and estuarine waters. There is little doubt that human-mediated dispersal of NIS and subsequent establishment of NIS has altered biodiversity, species assemblages, food web dynamics, and trophic structure and interactions in marine ecosystems. These alterations have ecological, biological, evolutionary and economic consequences, especially in coastal and estuarine systems. It is ironic that mariculture and the global shipping trade have been identified as the most affected economically, given that these two activities are often identified as the primary vectors of marine NIS introductions. This session will address the impacts of marine NIS on the ecosystems in which they have invaded. Examples of impacts include, but are not limited to, biological, ecological, evolutionary, and economic. While abstracts addressing any type of economic impact will be considered, preference will be given to research projects focusing on ballast water and bio-fouling diagnostic and treatment technologies.

Tuesday, October 28, 2008 09:00 – 18:00

- 09:00 **Introduction by convenors**
- 09:10 **Edwin Grosholz (Invited)**
A new agenda for addressing the impacts and management of coastal invasions (S8-5326)
- 09:50 **Henry Lee II, Deborah Reusser, Walter Nelson and Janet Lamberson**
Changes in latitude, changes in attitude – Emerging biogeographic patterns of invasion in the Northeast Pacific (S8-5258)
- 10:10 **Vasily I. Radashevsky**
Unknown vector of organism transportation with ballast water between the Northwest Pacific and Southwest Atlantic (S8-5297)
- 10:30 **Coffee / tea break**
- 10:50 **Takeaki Hanyuda, Shinya Uwai, Judie Broom, Wendy Nelson and Hiroshi Kawai**
Origin and dynamics of two non-indigenous algal populations (*Undaria pinnatifida*, Phaeophyceae; and *Ulva pertusa*, Ulvophyceae) using molecular markers (S8-5493)
- 11:10 **Graham E. Gillespie, Thomas W. Therriault and Glen S. Jamieson**
Marine non-indigenous species on the Pacific coast of Canada: Distribution, origin and vectors (S8-5301)
- 11:30 **Soo-Jung Chang, Won-Duk Yoon and Yoon Lee**
Spatio-temporal variability in the abundance and size of *Nemopilema nomurai* (Scyphozoa: Rhizostomeae) in Korean waters (S8-5481)
- 11:50 **Jinhui Wang, Yanqing Wu, Yutao Qin and Yihong Li**
The threat of potential alien species in the East China Sea and a mitigation strategy (S8-5272)
- 12:10 **Lijun Wang**
Species introduced for marine aquaculture and their impacts in China (S8-5093)
- 12:30 **Lunch**
- 14:00 **Graham E. Gillespie and Thomas W. Therriault**
Biology and ecological impacts of the European green crab, *Carcinus maenas*, on the Pacific coast of Canada (S8-5300)

- 14:20 **Steven S. Rumrill**
Interactions with non-indigenous aquatic species pose an impediment to recovery of native Olympia oyster (*Ostrea conchaphila*) populations within Coos Bay, Oregon, USA (S8-5234)
- 14:40 **Thomas W. Therriault, Graham E. Gillespie and Glen S. Jamieson**
Looking for non-indigenous species in Canada: Preliminary results from a multi-year, multi-discipline program (S8-5282)
- 15:00 **Jinho Chae, Dong-Hyun Lim, Taeho Chang Hyungzin Ahn, Il-hoi Kim and Yoon Lee**
Monitoring non-indigenous species in southeastern and eastern Korean trade-ports (S8-5480)
- 15:20 **Judith Pederson, Victor Polidoro, James Morash, Justin G. Eskesen, Dylan Owens, Franz Hover and Chrys Chrysostomidis**
Advancing technologies to identify marine invaders in support of fisheries management (S8-5452)
- 15:40 **Paul Heimowitz**
Rapid response plans for aquatic invasive species (S8-5470)
- 16:00 *Coffee / tea break*
- 16:20 **Blake E. Feist, Kevin See, Carolina Parada and Jennifer Ruesink**
Predicting the northward range expansion of non-indigenous European green crab (*Carcinus maenas*) along the west coast of North America (S8-5494)
- 16:40 **Darlene Smith**
Introduction of a PICES project on marine non-indigenous species supported by the Ministry of Agriculture, Forestry and Fisheries of Japan
- 16:50 **Thomas W. Therriault**
Rapid Assessment Surveys: PICES WG-21's approach (S8-5471)
- 17:10 **Deborah Reusser and Henry Lee II**
Evolution of biogeography in the 21st Century – Development of a North Pacific non-indigenous species database (S8-5476)
- 17:30 **Open Discussion**

S8 Poster

- S8-5399 **Xuezheng Lin and Xiaohang Huang**
Introduced marine organisms in China from Japan and their impacts

S9 BIO Topic Session

End-to-end food webs: Impacts of a changing ocean

Co-sponsored by IMBER

Co-Convenors: George Hunt, Jr. (U.S.A.), Hiroaki Saito (Japan) and Sinjae Yoo (Korea)

A holistic end-to-end approach is needed to study the impacts of global change in marine food webs, including the influences on biogeochemistry and feedbacks to climate. This approach is encapsulated by the term “end-to-end food webs”, which is defined as “feeding interactions, nutrient flows and feedbacks in an end-to-end food web of primary producers, consumers and decomposers.” This food web approach retains the energy transfer and nutrient cycles of traditional food webs, but emphasizes the importance of understanding food web dynamics simultaneously at all levels and scales. To achieve an integrated understanding of end-to-end food web dynamics requires a merging of knowledge from many marine-related disciplines, including those concerned with global climate, marine food webs, marine ecosystems, marine biogeochemistry and biodiversity.

Tuesday, October 28, 2008 14:00 – 17:50

- 14:00 **Introduction by convenors**
- 14:05 **Angelica Peña (Invited)**
Modelling food web dynamics and biogeochemical cycles on the continental shelf: An example from the Pacific coast of Canada (S9-5426)
- 14:35 **Mitsuhide Sato, Shigenobu Takeda and Ken Furuya**
Temporal variation in the cellular labile iron pool of phytoplankton during an *in situ* iron enrichment experiment as measured by flow cytometry (S9-5312)
- 14:55 **Sarah-Jeanne Royer, Martine Lizotte, Maurice Levasseur, Michael Arychuk, Michael Scarratt, Keith Johnson, C.S Wong, Connie Lovejoy, Marie Robert, Sonia Michaud and Ronald P. Kiene**
DMSP microbial dynamics along a natural iron gradient in the Northeast Pacific (S9-5117)
- 15:15 **Hongbin Liu, Bingzhang Chen, Mianrun Chen, Xihan Chen, Loklun Shek, Hongmei Jing and Thomas Wong**
Planktonic microbial food web dynamics in Hong Kong coastal waters (S9-5390)
- 15:35 **JiHo Seo, Seok Hyun Youn, Jeong Kyu Yoo and Joong Ki Choi**
The variation in zooplankton abundance related to sea water temperature changes in Incheon coastal waters, Gyeonggi Bay from 2000 to 2007 (S9-5253)
- 15:55 **Coffee / tea break**
- 16:20 **Chang-Keun Kang (Invited)**
Food web structure in the continental shelf and slope waters of the Korean peninsula: Stable isotope approach and prospects for future research (S9-5342)
- 16:50 **Eun-Jin Yang, Sinjae Yoo, Jung-Ho Hyun, Jae-Hoon Noh, Hyung-Ku Kang, Dongseon Kim and Chang-Woong Shin**
Structure and dynamics of the planktonic food web during spring and summer in the Ulleung Basin, East Sea/Japan Sea (S9-5360)
- 17:10 **Jeffrey M. Napp, Christine T. Baier and Suzanne L. Strom**
Mesozooplankton grazing and egg production in the coastal Gulf of Alaska (S9-5400)
- 17:30 **Hiroaki Saito, Keiichiro Ide, Masatoshi Moku, Hiroya Sugisaki and Kazutaka Takahashi**
The end-to-end food web of the subarctic Pacific from the viewpoint of *Neocalanus* copepods (S9-5358)

- 09:00 **Orio Yamamura (Invited)**
 Inside and outside the food web: Factors affecting dynamics of walleye pollock (S9-5417)
- 09:30 **Hye Eun Lee, Won Duk Yoon and Suam Kim**
 Feeding biology of *Nemopilema nomurai* (Scyphozoa: Rhizostomeae) and its ecological implication (S9-5330)
- 09:50 **George L. Hunt, Jr., Kenneth O. Coyle and Jeffrey M. Napp**
 Does a warming climate aid pollock recruitment in the eastern Bering Sea? A new look at assumptions behind the Oscillating Control Hypothesis (S9-5368)
- 10:10 **Franz Mueter and Ken Coyle**
 From physics to humans: Climate effects on Bering Sea food webs and fisheries (S9-5443)
- 10:30 *Coffee / tea break*
- 10:50 **Chung-Youl Park and Woo-Seok Gwak**
 Stomach contents of Pacific cod (*Gadus macrocephalus*) in Korean coastal waters (S9-5338)
- 11:10 **Vjacheslav S. Labay and Yuri R. Kochnev**
 Long-term changes in the *Nuculana pernula* community of the southern Okhotsk Sea as an indicator of global benthic change (S9-5107)
- 11:30 **Olga Yu. Tyurneva, Valery I. Fadeev, Yuri M. Yakovlev and Vladimir V. Vertyankin**
 Changes in the movement and distribution of western gray whales between known feeding areas in 2002-2007 (S9-5099)
- 11:50 **Jung Hyun Lim, Zang Geun Kim, Kyung-Jun Song, Hyeok Chan Kwon, Seok Gwan Choi, Yong-Rock An and Chang-Ik Zhang**
 Feeding habits of minke whales in Korean waters (S9-5241)
- 12:10 **Hongsheng Bi, William T. Peterson, Jesse Lamb and Cheryl Morgan**
 Couplings between multi-scale physical processes and copepod communities along the Washington and Oregon coast (S9-5199)
- 12:30 *Lunch*
- 14:00 **William J. Sydeman, Nandita Sarkar, Isaac D. Schroeder, Kyra L. Mills, Jarrod A. Santora, Sarah Ann Thompson, Robert M. Suryan and Steven J. Bograd (Invited)**
 Seabirds as environmental indicators: Climate variability, phenology, prey availability and tests of the “integrator” hypothesis (S9-5447)
- 14:30 **Jaime Jahncke, Meredith L. Elliott, Benjamin L. Saenz, Jennifer E. Roth and Christine L. Abraham**
 Planktivorous seabird responses to variability in coastal upwelling in Central California (S9-5408)
- 14:50 **Jarrod A. Santora, William J. Sydeman and Steve Ralston**
 Do seabirds at sea in the California Current reflect krill distribution, abundance and patch structure? (S9-5160)
- 15:10 **Jennifer E. Roth, Russell W. Bradley, Peter Warzybok, Christine L. Abraham and Jaime Jahncke**
 Ocean processes driving the phenology and productivity of marine birds in the California Current System (S9-5418)
- 15:30 **Katarzyna Zmudczyńska, Lech Stempniewicz, Adrian Zwolicki, Lech Iliszko, Bronisław Wojtuń and Jan Matula**
 The influence of plankton- and fish-eating seabird colonies on the Arctic tundra ecosystem of Spitsbergen (S9-5116)

- 15:50 *Coffee / tea break*
- 16:10 **Hiroko Sasaki, Hiroshi Kiwada, Koji Matsuoka and Sei-Ichi Saitoh**
The relationship between cetacean distributions and oceanographic conditions in the western North Pacific (S9-5429)
- 16:30 **Rei Yamashita, Masa-aki Fukuwaka and Yutaka Watanuki**
Ingestion of plastic debris by seabirds in the North Pacific Ocean (S9-5340)
- 16:50 **Kazuaki Tadokoro, Takashige Sugimoto and Michio J. Kishi**
The effects of anthropogenic global warming on the marine ecosystem (S9-5345)
- 17:10 *Summary and wrap up*

S9 Posters

- S9-4990 **Guoping Zhu, Liuxiong Xu, Xiaojie Dai, Yingqi Zhou and Wei Liu**
Comparative study of the feeding habits of bigeye *T. obesus* and yellowfin tuna *T. albacares* in the east-central tropical Pacific Ocean
- S9-5112 **Xiuning Du and Guangxing Liu**
Species composition and abundance of phytoplankton in the Northern Yellow Sea in the winter of 2006
- S9-5131 **Sang Chul Yoon, Hyung Kee Cha, Sung Il Lee, Dae Soo Chang, Sergey Solomatov, Pavel Kalchugin and Jae Hyeong Yang**
Biomass, density, and community structure of fish collected by bottom trawl in the northwestern and southwestern East Sea during 2006-2007
- S9-5155 **Marta Gluchowska, Slawomir Kwasniewski, Katarzyna Wojczulanis-Jakubas, Dariusz Jakubas, Katarzyna Blachowiak-Samolyk and Lech Stempniewicz**
Still enough Arctic zooplankton for Little Auks on Spitsbergen, but for how long?
- S9-5238 **Kyung-Jun Song, Zang Geun Kim, Seok Gwan Choi, Yong-Rock An, Suk-Jae Kim and Moon-Kab Park**
Occurrence of cetaceans on the fast ferry route between Korea and Japan
- S9-5277 **Hyun Woo Kim, Seok-Gwan Choi and Zang Geun Kim**
Seabird distribution patterns in the East/Japan Sea in spring 2007
- S9-5344 **Yashu Bai**
Food web structure in the Xiamen Harbour marine ecosystem: Changes during the past 30 years
- S9-5362 **Kyum Joon Park, Seok Gwan Choi, Yong Rock An, Zang Geun Kim, Hyun Woo Kim, Ji Eun Park, Tae-Geon Park, Zhiquang Ma and Zhichuang Lu**
Abundance and distribution of minke whales (*Balanoptera acutorostrata*) in the Yellow Sea in 2008
- S9-5395 **Jung Hwa Choi, Wongyu Park, Jung Nyun Kim, Sung Tae Kim and Young Min Choi**
Understanding the relationship between zooplankton and shrimp biomass as driven by climate changes in the Yellow Sea, western part of Korean peninsula during 1968-2007
- S9-5435 **Peter Warzybok, Russell W. Bradley, Meredith L. Elliott, Benjamin L. Saenz, Nina J. Karnovsky and Jaime Jahneke**
How effective are Cassin's auklets as environmental monitors in Central California?

S11 FIS Topic Session

Effects of fisheries bycatch and discards on marine ecosystems and methods to mitigate the effects

Co-Convenors: Hui Chun An (Korea) and Patricia Livingston (U.S.A.)

Commercial fisheries using gears, such as bottom trawling, capture both target and non-target species. In some instances, bycatch mortality is sufficiently high to adversely affect the stock status and productivity of non-target species. To minimize unintended impacts on the environment, commercial fisheries should strive to increase their selectivity by reducing the bycatch of birds, mammals, turtles and other non-target species, as well as by reducing the catch and discard of undersized commercial species. This session will examine the magnitude of bycatch of non-target species, effects of bycatch mortality on the health of non-target stocks, and recent research on methodology to reduce bycatch and discards in the PICES region. Particular emphasis will be placed on studies that have resulted in changes in commercial fishing practices.

Thursday, October 30, 2008 14:00 – 17:20

- 14:00 *Introduction by convenors*
- 14:05 **Steven J. Kennelly (Invited)**
Reducing bycatch in the world's fisheries (S11-5462)
- 14:45 **Heui Chun An, Chang-Doo Park, Jong Keun Shin and Kyoung-Hoon Lee**
Bycatch reduction in the snow crab gillnet fishery of Korea (S11-5359)
- 15:05 **Kyung-Jun Song, Zang Geun Kim, Seok Gwan Choi, Yong-Rock An and Chang-Ik Zhang**
Fishing gears involved in entanglements of minke whales in the southwestern East/Japan Sea (S11-5221)
- 15:25 **Larisa P. Nikolenko**
How big are the losses of Greenland turbot (*Reinhardtius hippoglossoides*) and crabs (*Lithodes aequispina* and *Chionoecetes angulatus*) during deep-sea bottom net and long-line fishing in the Okhotsk Sea? (S11-5319)
- 15:45 **Evan A. Howell, Jeffrey J. Polovina, Donald R. Kobayashi, George H. Balazs, Denise M. Parker and Peter Dutton**
A new dimension to the problem of loggerhead turtle (*Caretta caretta*) bycatch in the Hawaii-based longline fishery (S11-5263)
- 16:05 *Coffee / tea break*
- 16:25 **Stephani G. Zador, Julia K. Parrish, André E. Punt, Jennifer L. Burke and Shannon M. Fitzgerald**
Determining spatial and temporal overlap of an endangered seabird with a large commercial trawl fishery (S11-5192)
- 16:45 **Patricia A. Livingston, Jennifer Boldt, Shannon M. Fitzgerald, William Karp and David Witherell**
Assessing and reducing the amounts and impacts of fisheries bycatch in Alaska marine ecosystems (S11-5257)
- 17:05 *Discussion*

S11 Poster

S11-5364 **Hyoung Chul Shin, Doonam Kim and Kyu Jin Seok**
To monitor and mitigate the incidental mortality and discards from fisheries; Lessons from the Southern Ocean, a test bed of ideal management

S12 MEQ Topic Session

Connecting the human and natural dimensions of marine ecosystems and marine management in the PICES context

Co-Convenors: David L. Fluharty (USA), Mitsutaku Makino (Japan), R. Ian Perry (Canada) and Chang-Ik Zhang (Korea)

A complete definition of marine ecosystems includes the human components. Consideration of ecosystem-based management, at least within the natural sciences, usually leaves out the human dimensions, or includes it only as fishing effort. For ecosystem-based management to succeed, however, humans need to be included. This session builds on the Science Board Symposium of 2003 titled “*Human dimensions of ecosystem variability*”. Human relationships and how humans interact with the ocean have been changing in nature and strength over time. Natural variability in marine systems can be large, but so are socio-economic pressures and considerations relating to marine environments. Determining appropriate socio-economic indicators to complement indicators of natural climate variability, *e.g.* for ecosystem-based management, is an ongoing challenge. This session will address these interactions between natural and socio-economic issues in the context of ecosystem-based management. Specifically, it will consider: (1) What are the criteria to determine relevant socio-economic indicators of human well-being related to marine issues for PICES member countries? (2) What are appropriate indicators to monitor changes in management objectives and human well-being relevant to changing ecosystem structure and production? (3) How might decisions that are made to enhance human well-being likely to impact (positively or negatively) the nature and functions of marine ecosystems? This session theme will continue to explore the many ways that humans interact with marine ecosystems and the scientific efforts to quantify and predict human impacts on the dynamics of such systems.

Thursday, October 30, 2008 09:00 – 13:2

- 09:00 **Introduction by convenors**
- 09:05 **Mitsutaku Makino and Hiroshi Horikawa**
Social-ecological conditions of fisheries and management by ITQs: A global review (S12-5460)
- 09:25 **Lawrence C. Hamilton (Invited)**
Ecosystem, fishery and social changes in western Alaska (S12-5406)
- 09:50 **Chang Seung and Chang-Ik Zhang**
Socio-economic indicators used in ecosystem-based assessment for the eastern Bering Sea trawl fishery (S12-5259)
- 10:10 **Peter S. Ross, T. Child and N. Turner**
Caught in the crossfire: Environmental contaminants in Pacific food webs and implications for coastal First Nations (S12-5466)
- 10:30 **Coffee / tea break**
- 10:50 **David L. Fluharty**
Developing and using social science information in marine management processes in the United States (S12-5479)
- 11:10 **Hee Won Park, Chang-Ik Zhang and Jae Bong Lee**
A comparative study on the structure and function of Korean marine ranching ecosystems (S12-5174)
- 11:30 **Shang Chen, Jian Liu, Tao Xia and Qixiang Wang**
Change of ecosystem services of the Yellow River Delta Wetland, China (S12-5158)
- 11:50 **Olga N. Lukyanova and Ludmila V. Nigmatulina**
The value of ecosystem services of Peter the Great Bay (Japan/East Sea) (S12-5151)

- 12:10 **Samuel G. Pooley, Ian Perry and Mitsutaku Makino**
Socio-economic considerations of ecosystem approaches to fisheries management (S12-5490)
- 12:30 **Zhifeng Zhang**
Effects of dredging on internal release of phosphate from marine sediments in Dalian Bay (S12-5157)
- 12:50 **Discussion**

S12 Posters

- S12-5068 **Jingfeng Fan, Hongxia Ming, Lijun Wu, Yubo Liang and Jiping Chen**
Detection of human enteric viruses in shellfish in China
- S12-5097 **Peter M. Zhadan and Marina A. Vaschenko**
Does pollution change the reproductive strategy of the sea urchin?
- S12-5098 **Svetlana A. Ireykina, Olga N. Lukyanova and Andrey P. Chernyaev**
An integrated approach to pollution assessment of estuarine ecosystems of Peter the Great Bay (Japan/East Sea)
- S12-5153 **Natalia M. Aminina and Lidia T. Kovekovdova**
Brown algae metabolism in polluted environments
- S12-5164 **Zhen Wang, Xindong Ma, Zhongsheng Lin, Guangshui Na, Qiang Wang and Ziwei Yao**
Occurrence and congener specific distribution of polybrominated diphenyl ethers in sediments and mussels from the Bo Sea, China
- S12-5224 **Andrey P. Chernyaev**
Persistent organic pollutants in Amursky Bay (Japan/East Sea): Risk assessment
- S12-5235 **Galina V. Moysevchenko and Alla A. Ogorodnikova**
Nature-conservative measures to decrease the negative impacts of waterside construction on marine biological resources in the Japan/East Sea
- S12-5236 **Alla A. Ogorodnikova**
Evaluation of the coastal ecosystem services of Peter the Great Bay
- S12-5239 **Guangshui Na, Qiang Wang, Zhen Wang, Hongxia Li, Shilan Zhao, Tong Chen, Zhongsheng Lin and Ziwei Yao**
Pharmaceuticals and Personal Care Products (PPCPs) in some river and sewage water of Dalian, China
- S12-5302 **Li Zheng, Xuezheng Lin, Zhisong Cui, Frank S.C. Lee and Xiaoru Wang**
Phylogenetic analysis of indigenous marine bacteria with the ability to degrade oil pollutants in Bohai Bay
- S12-5304 **Liping Jiao, Liqi Chen, Yuanhui Zhang, Gene J. Zheng, Tu Binh Minh and Paul K.S. Lam**
Polycyclic aromatic hydrocarbons in remote lake and coastal sediments from Svalbard, Norway: Levels, sources and fluxes
- S12-5324 **Qixiang Wang, Shang Chen and Xuexi Tang**
Preliminary assessment of ecosystem services of the Yellow Sea
- S12-5353 **Petr V. Lushvin**
The impact of anthropogenic activity (regime of hydroelectric power stations and technological explosions) on behaviour and reproduction of fish and crustaceans
- S12-5386 **Galina Borisenko and Galina Moysevchenko**
Level assessment of natural and artificial radionuclides in Cosimino Bay's bottom sediments (Nakhodka Bay, Japan Sea)

- S12-5501 **Zhang Hongliang, Leng Yu, Xu Zijun and Li Jiye**
Research on the generating and vanishing process of *Enteromorpha* bloom and the environmental controlling factors
- S12-5502 **Zhou Yan-Rong Zhang Wei Tang Wei Zhao Bei and Yang Dong-Fang**
Analysis of nutrients and organic pollution in Shuangdao Bay
- S12-5503 **Ji-Ye Li, Xiu-Qin Sun, Feng-Rong Zheng and Lin-Hua Hao**
Screen and effect analysis of immunostimulants for sea cucumber, *Apostichopus japonicus*
- S12-5505 **Wang Xinping, Sun Peiyan, Zhou Qing, Li Mei, Cao Lixin and Zhao Yuhui**
Compounds concentration analysis of oil and its application in oil spill identification

BIO Contributed Paper Session

Co-Convenors: Michael J. Dagg (U.S.A.) and Michio J. Kishi (Japan)

Oral and poster presentations on biological aspects of the PICES XVII theme (FUTURE) are welcome, as well as papers on all aspects of biological oceanography in the North Pacific and its marginal seas (except those related to the BIO-sponsored Topic Sessions S2 and S9. Early career scientists are especially encouraged to submit papers to this session.

Friday, October 31, 2008 09:00 – 17:20

- 09:00 **Meibing Jin, Clara Deal, Jia Wang and Peter McRoy**
Response of lower trophic level productivity to long-term climate changes in the southeastern Bering Sea (BIO_P-5118)
- 09:20 **Hui Liu and William T. Peterson**
A phase shift in the Northern California Current (NCC) ecosystem? (BIO_P-5201)
- 09:40 **Kohji Iida, Onishi Yuriko and Tohru Mukai**
Regional characteristics of diel vertical migration of the sound scattering layer in the North Pacific (BIO_P-5086)
- 10:00 **C. Tracy Shaw, Leah R. Feinberg, Hongsheng Bi and William T. Peterson**
Upwelling conditions and cohort analysis of the euphausiid *Euphausia pacifica* off Newport, OR, USA (BIO_P-5089)
- 10:20 **Zhongming Lu, Jianping Gan, Anson Cheung, Minhan Dai, Hongbin Liu and Paul J. Harrison**
Biological response to wind-driven upwelling and river plume in the northeastern South China Sea (BIO_P-5450)
- 10:40 **Coffee / tea break**
- 11:00 **Atsushi Tsuda and Shinji Shimode**
Distribution and life history of a subtropical copepod, *Neocalanus gracilis*: Implication for the northward intrusion by subarctic species (BIO_P-5046)
- 11:20 **Soo-Jung Chang, Won-Duk Yoon and Suam Kim**
Molecular phylogeography of *Nemopilema nomurai* (Class: Scyphozoa) in Korean waters (BIO_P-5329)
- 11:40 **Jing Dong**
Possible origin of *Nemopilema nomurai* in the northern part of the China Sea, and causes of population fluctuations (BIO_P-5442)
- 12:00 **David L. Mackas**
Scale-dependent spatial correlation of zooplankton time series: Biomass, phenology, and species composition (BIO_P-5434)
- 12:20 **Sergey P. Zakharkov, Tatyana N. Gordeychuk and Elena A. Shtraikhert**
Variability of satellite primary production in the Sea of Japan from 2003 to 2007 (BIO_P-5240)
- 12:40 **Lunch**

- 14:00 **Pavel A. Salyuk, Oleg A. Bukin, Andrey N. Pavlov, Konstantin A. Shmirko and Denis A. Akmaykin**
Estimation of phytoplankton community response to Asian dust forcing in the northwestern Pacific (BIO_P-5339)
- 14:20 **Suguru Okamoto, Toru Hirawake and Sei-Ichi Saitoh**
Interannual variability of the spring, column-integrated chlorophyll-*a* content in the Kuroshio Extension region (BIO_P-5189)
- 14:40 **Qiang Hao, Xiuren Ning, Chenggang Liu and Fengfeng Le**
Primary production in the northern South China Sea – Satellite and *in situ* observations (BIO_P-5473)
- 15:00 **Pavel Ya. Tishchenko, Vyacheslav B. Lobanov, Alexey M. Koltunov, Anna A. Maryash, Tatyana A. Mikhailik, Galina Yu. Pavlova, Sergey G. Sagalaev, Alexander F. Sergeev, Elena M. Shkirknikova, Mariya G. Shvetsova, Petr P. Tishchenko and Vladimir I. Zvalinsky**
Physical and biological mechanisms of Amurskiy Bay re-oxygenation after deep hypoxia events (BIO_P-5249)
- 15:20 **Meng Zhou, Di Wu, Yiwu Zhu, Stephen D. Pierce, John A. Barth and Timothy Cowles**
Zooplankton productivity, trophic dynamics and size spectra in the Oregon shelf areas (BIO_P-5106)
- 15:40 *Coffee / tea break*
- 16:00 **Jian Hu, Zhao-Li Xu and De-Di Zhu**
Seasonal changes in the ecological characteristics of pelagic molluscs in the Changjiang Estuary (BIO_P-5020)
- 16:20 **Juyun Lee, Toshiya Katano and Myung-Soo Han**
Cell cycle of *Heterosigma akashiwo* with special reference to vertical migration behavior (BIO_P-5333)
- 16:40 **Oleg N. Katugin, Michael A. Zuev and Gennadyi A. Shevtsov**
Distribution patterns, morphology and taxonomy of the gonatid squid *Gonatus tinro* and *Gonatopsis okutanii* in the Sea of Okhotsk and northwestern Pacific Ocean (BIO_P-5298)
- 17:00 **Hyunjung Kang, Yeonghye Kim, Seongyeon Kim and Dongwoo Lee**
Reproductive ecology of common octopus, *Octopus vulgaris* in the South Sea, Korea (BIO_P-5320)

BIO Contributed Paper Session Posters

- BIO_P-4984 **Alexander V. Zavolokin, Elena A. Zavolokina, Igor I. Glebov, Alexander M. Slabinskiy and Alexander Ya. Efimkin**
Food supply of Pacific salmon (*Oncorhynchus* spp.) in the western Bering Sea in 2002-2006
- BIO_P-4995 **Jia-Jie Chen, Zhao-Li Xu and De-di Zhu**
Seasonal abundance and distribution of pelagic euphausiids in the Changjiang Estuary, China
- BIO_P-4998 **Keiichi Fukushi and Taro Minato**
The potential usefulness of recovered jellyfish as fertilizer
- BIO_P-5007 **Shigenobu Takeda and Y. Kondo**
Organic complexation of iron in the Pacific Ocean
- BIO_P-5021 **Xiao-Dong Zhou and Zhao-Li Xu**
Ecological characteristics of the pelagic decapods in the Changjiang Estuary
- BIO_P-5025 **Hirofumi Ueno, William R. Crawford and Hiroji Onishi**
Impact of Alaskan Stream eddies on chlorophyll distribution in the western and central subarctic North Pacific
- BIO_P-5067 **Toru Kobari, Ai Ueda and Yuichiro Nishibe**
Development and growth of ontogenetically migrating copepods during the spring phytoplankton bloom in the Oyashio region
- BIO_P-5130 **Wen-Tseng Lo, Meng-Chen Ke and Hao-Hsien Chang**
Effects of temperature and salinity changes on asexual reproduction of *Aurelia aurita* (Cnidaria, Scyphozoa)
- BIO_P-5141 **Chaewoo Ma, Wongyu Park and Jung Hwa Choi**
Long-term variations of sea surface temperature and zooplankton biomass driven by climate changes in the Yellow Sea, western part of Korean peninsula during 1968-2007
- BIO_P-5148 **Sonia Batten, Dave Mackas and Doug Moore**
Changing size with latitude in *Neocalanus plumchrus* and *N. flemingeri*
- BIO_P-5161 **Elena Smirnova and Natalia P. Fadeeva**
Seasonal dynamics of meiofauna community and zonation patterns in (un)disturbed sandy beaches of the Sea of Japan
- BIO_P-5162 **Natalia P. Fadeeva and Valery I. Fadeev**
Indicator role of sublittoral meiofauna in monitoring the status of marine environments
- BIO_P-5219 **Yuji Okazaki and Kazuaki Tadokoro**
Spatial and seasonal variability of euphausiid distribution and community structure in the Oyashio and the Kuroshio-Oyashio transition region
- BIO_P-5223 **Nadezhda E. Struppul, Elena R. Colomeetch and Natalia A. Snopkova**
Petroleum biodegradation in the presence of marine microorganisms, *Pseudoalteromonas citrea*, *Pseudoalteromonas elyakovii* and *Oceanisphaera litoralis*
- BIO_P-5284 **Takumi Nonomura, Jun Nishikawa, Atsushi Tsuda, Ichiro Yasuda and Shuhei Nishida**
Practical identification of three sympatric calanoid copepods, *Calanus sinicus*, *C. jashnovi* and *C. pacificus*, in the western North Pacific
- BIO_P-5325 **Miju Kim, Dong-Jin Kang, Kyung-Ryul Kim, Noriko Nakayama, Toshitaka Gamo, Eun Hee Kim and Jae Seong Lee**
Diurnal variation in the concentration and stable isotope composition of dissolved oxygen (O₂) in Lake Shihwa, Korea

- BIO_P-5349 **Masaya Toyokawa and Jing Dong**
Salinity tolerance of planula and polyp stages of Nomura's jellyfish, and their possible natural habitat
- BIO_P-5499 **Jimin Zhang and Wenzhai Ma**
Nutrient distribution and eutrophication assessment for the adjacent waters of the Yellow River Estuary

FIS Contributed Paper Session

Convenor: Gordon H. Kruse (U.S.A.)

Papers addressing general topics in fishery science and fisheries oceanography in the North Pacific and its marginal seas are invited (except S4, S5 and S11 topics).

Updated Sep. 30

Friday, October 31, 2000 10:00 – 17:20

- 09:00 **Anastasia M. Khrustaleva**
Integrated method for sockeye salmon stock differentiation in the West Pacific and the Sea of Okhotsk (FIS_P-5233)
- 09:20 **Moongeun Yoon, Syuiti Abe and Deuk-Hee Jin**
Population genetic structure of chum salmon in the Pacific Rim inferred from mitochondrial and microsatellite DNA analyses (FIS_P-5109)
- 09:40 **In Joon Hwang and Hea Ja Baek**
Assessment of ovarian maturation in *Chasmichthys dolichognathus* after exposure to single polycyclic aromatic hydrocarbons, benzo[a]pyrene (FIS_P-5335)
- 10:00 **Guoping Zhu, Xuefang Wang, Liuxiong Xu, Xuchang Ye and Chunlei Wang**
Comparison on the biological characteristics of skipjack tuna *Katsuwonus pelamis* between the log school and free school caught by purse seine from the Western and Central Pacific Ocean (FIS_P-5231)
- 10:20 **Alexei M. Orlov, Dmitry V. Pelenev, Vadim F. Savinykh, Natalia V. Klovach and Andrei V. Vinnikov**
Pacific lamprey: Some ecological and biological features during their sea life and relationships with host species (FIS_P-5000)
- 10:40 **Coffee / tea break**
- 11:00 **Hiroshige Tanaka, Chiyuki Sassa, Seiji Ohshimo and Ichiro Aoki**
Feeding habits and diel feeding patterns of two dominant myctophid fishes in the continental shelf region off western Kyushu, Japan (FIS_P-5299)
- 11:20 **Lei Guo, Robert Foy, Kate Wynne and Lawrence Schaufler**
Combining stomach content and fatty acid analyses to assess forage fish diets (FIS_P-5322)
- 11:40 **Jung Nyun Kim, Heeyong Kim and Kwang Ho Choi**
Migration and coastal recruitment of jack mackerel *Trachurus japonicus* in Korean waters (FIS_P-5248)
- 12:00 **Jake Schweigert, Joanna Hirner and Sean Cox**
Predicting Pacific sardine (*Sardinops sagax*) migration into Canadian waters (FIS_P-5261)
- 12:20 **Jong Hee Lee, Jae Bong Lee and Chang-Ik Zhang**
Long-term fluctuation of commercial fished species and their marine environment in Korean waters (FIS_P-5191)
- 12:40 **Lunch**
- 14:00 **Anatoliy Ya. Velikanov**
Long-term variability of pelagic fish species composition near the eastern Sakhalin (Sea of Okhotsk): Distribution, fluctuations in abundance, fishery (FIS_P-5045)

- 14:20 **Alexander I. Glubokov and Alexei M. Orlov**
Poachers (Agonidae) of the Russian part of the Bering Sea: Spatial distribution and biology (FIS_P-4999)
- 14:40 **Jung Jin Kim and Suam Kim**
Recruitment mechanisms of common squid (*Todarodes Pacificus*) in the Yellow Sea (FIS_P-5327)
- 15:00 **Takeshi Okunishi, Shin-ichi Ito, Naoki Yoshie, Taketo Hashioka, Hiroshi Sumata and Yasuhiro Yamanaka**
The impact of density-dependent processes on growth of Japanese sardine (*Sardinops melanostictus*) (FIS_P-5310)
- 15:20 **William Peterson, Edmundo Casillas, Hui Liu and Cheryl Morgan**
Forecasting returns of coho and chinook salmon in the northern California Current: A role for high-frequency long-term observations (FIS_P-5373)
- 15:40 **You-Jung Kwon, Doo-Hae An, Chang-Ik Zhang, Dae-Yeon Moon and Jae Bong Lee**
An ecological risk assessment of the effect of the tuna longline fishery in the Western and Central Pacific Ocean (FIS_P-5186)
- 16:00 *Coffee / tea break*
- 16:20 **Arata Fukaya, Katsuya Saitoh and Sei-Ichi Saitoh**
Estimation of number of Pacific saury fishing vessels using nighttime visible images (FIS_P-5346)
- 16:40 **Hyeok Chan Kwon and Chang-Ik Zhang (moved from Poster Session)**
Maturation and spawning of black seabream, *Acanthopagrus schlegeli* in the Jeonnam marine ranching area of Korea (FIS_P-5185)
- 17:00 **Bernard A. Megrey and Chang-Ik Zhang**
Estimating biomass and management parameters from length composition data: A stock assessment method for data-deficient situations (FIS_P-5271)

FIS Contributed Paper Session Posters

- FIS_P-4989 **Guoping Zhu, Liuxiong Xu, Yingqi Zhou and Xiaojie Dai**
Age, growth and mortality of bigeye tuna *Thunnus obesus* (Scombridae) in the eastern and central tropical Pacific Ocean
- FIS_P-5016 **Chiyuki Sassa, Keisuke Yamamoto, Youichi Tsukamoto and Muneharu Tokimura**
Distribution and biomass of *Benthoosema pterotum* (Pisces: Myctophidae) in the shelf region of the East China Sea: Mechanisms of population maintenance
- FIS_P-5079 **Nadezhda L. Aseeva**
Changes in populations of flounders at West Kamchatka as the result of fisheries
- FIS_P-5149 **Victor F. Bugaev, B.B. Vronsky, L.O. Zavarina and Zh.Kh. Zorbidi**
Correlation analysis of interannual variations of length, weight and condition factor of salmon from the Kamchatka River
- FIS_P-5187 **You-Jung Kwon, Sun-Do Hwang, Yeong-Seung Kim and Dae-Yeon Moon**
Recent stock status of fishes on Emperor seamounts in the Pacific Ocean
- FIS_P-5188 **You-Jung Kwon, Doo-Hae An, Soon-Song Kim, Dae-Yeon Moon and Seon-Jea Hwang**
Determinants of bigeye and yellowfin tuna catch rates in the tuna longline fishery
- FIS_P-5193 **Yukimasa Ishida and Akihiro Yamada**
Salmon distribution in the northern Japan during the Jomon Period
- FIS_P-5202 **Elena Dulepova and Evgeny Ovsyannikov**
Productivity of walleye pollock (*Theragra chalcogramma*) in the eastern Okhotsk Sea in 2006-2008
- FIS_P-5203 **Goh Onitsuka, Naoki Hirose, Kazutaka Miyahara, Taro Ota, Jun Hatayama, Yasushi Mitsunaga and Tsuneo Goto**
Lagrangian simulation of diamond squid (*Thysanoteuthis rhombus*) in the southwestern Japan Sea from 2003 to 2005
- FIS_P-5222 **Nobushige Shimizu, Seiji Oshimo, Ryuji Yukami and Ichiro Aoki**
Growth of larvae and juvenile Japanese anchovy *Engraulis japonicus* off the coast of western Kyusyu, Japan
- FIS_P-5232 **Anastasia M. Khrustaleva, Yury V. Fedotov and Elena N. Kuznetsova**
Application of a spectral method of scale-structure analysis for salmon stock differentiation in the Pacific Rim
- FIS_P-5262 **Andrei S. Krovnin and George P. Moury**
Changes in the spatio-temporal structure of climatic variations in the North Pacific and North Atlantic during the last 20 years and their relation to fluctuations in fish stocks
- FIS_P-5270 **Bernard A. Megrey and Jae Bong Lee**
On the utility of self-organizing maps (SOM) and k-means clustering to characterize and compare marine ecosystems
- FIS_P-5275 **Jin Koo Kim, William Watson, John R. Hyde, Nancy C.H. Lo, Jin Yeong Kim and Sung Kim**
Identification of *Ammodytes larvae* using mtDNA COI with morphological descriptions
- FIS_P-5278 **Jin Koo Kim, Kyeong Dong Park, Dae Soo Chang and Joo Il Kim**
Age and growth of *Scartelaos gigas* (Gobiidae) from a mud flat in Korea
- FIS_P-5279 **Jeong Bae Kim, Jung Hwa Ryu, Sang Yong Lee and Jin Koo Kim**
Effect of eelgrass on fish species composition and growth of young sea bass

- FIS_P-5281 **Jung Hwa Ryu, Jin Koo Kim and Jung Youn Park**
Genetic relationship among six horsehead species, *Branchiostegus* (Pisces, Perciformes), and an osteological comparison
- FIS_P-5286 **Sukgeun Jung, Dong-woo Lee, Young Shil Kang, Young-Sang Suh, Jin-yeong Kim and Yeong Gong**
Regime shifts indicated in fishery catch statistics (1968-2007) from Korean coastal waters
- FIS_P-5306 **Yasunori Sakurai, Mio Osato and Jun Yamamoto**
Does the extent of ice cover affect the fate of walleye pollock?
- FIS_P-5307 **Yeong Gong, Young-Sang Suh, In-Seong Han, Ki-Tack Seong, Woo-Jin Go and Suk-Geun Jung**
Year-to-year and inter-decadal fluctuations in abundance of pelagic fish populations in relation to climate-induced oceanic conditions
- FIS_P-5328 **Sukgeun Jung, Jae Bong Lee and Gyun Heo**
Relationship between ship tonnage and catch per haul examined to improve the stock assessment of chub mackerel, *Scomber japonicus*, in Korean sea waters
- FIS_P-5331 **Woo-Seok Gwak**
Population structure of Pacific cod *Gadus macrocephalus* in Korean waters inferred from mtDNA and msDNA markers
- FIS_P-5336 **Tai Jin Kim, Byung Ki Kim, Chung Youl Park, Byung Eon Choi, Hyung Woon Ju, Hwan Sung Ji, Sang Yong Shin, So Gwang Lee and Woo Seok Gwak**
Characteristics of Pacific cod (*Gadus macrocephalus*) during spawning in Jinhae Bay, Korea
- FIS_P-5351 **Petr V. Lushvin**
The impact of seismic activity on development of populations and fishery
- FIS_P-5396 **Jin Yeong Kim, Jae Bong Lee, Suam Kim, Young Min Choi and Ulf Dieckmann**
Changes in patterns of maturation and growth of sardine in Korean waters in relation to fluctuations in abundance and temperature
- FIS_P-5446 **Hak-Jin Hwang, Inja Yeon, Yang-Jae Im, Myoung-Ho Sohn, Mi-Young Song, Jong-Bin Kim and Heeyong Kim**
Spatio-temporal distribution of snailfish, *Liparis tankae* (Gilbert and Burke) in the West Sea of Korea

POC Contributed Paper Session

Co-convenors: Michael G. Foreman (Canada) and Ichiro Yasuda (Japan)

Papers are invited on all aspects of physical oceanography and climate in the North Pacific and its marginal seas. Papers on coastal upwelling should be directed to the Topic Session S6.

Tuesday, Oct. 28, 2008 09:00 – 18:00

- 09:00 **Lina Ceballos, Emanuele Di Lorenzo and Niklas Schneider**
North Pacific Gyre Oscillation synchronizes climate fluctuations in the eastern and western North Pacific (POC_P-5398)
- 09:20 **Sang-Wook Yeh, Young-Gyu Park, Hong-Sik Min, Cheol-Ho Kim and Jae-Hak Lee**
Changes in the Pacific Decadal Oscillation from observations (POC_P-5431)
- 09:40 **Masahiro Yagi and Ichiro Yasuda**
Turbulent mixing at the Bussol' Strait in the Kuril Islands using density inversions (POC_P-5363)
- 10:00 **Xianyao Chen, Qin Wang, Xiuhong Wang and Fangli Qiao**
Lagrangian hydrographic features of the Mixed Water Region in the North Pacific derived from Argo data (POC_P-5096)
- 10:20 **Elena I. Ustinova and Yury D. Sorokin**
Changes in the relationships between large-scale climatic indices and regional conditions in the Far-Eastern Seas (POC_P-5078)
- 10:40 *Coffee / tea break*
- 11:00 **Fan Wang, Jiajia Hao and Yongli Chen**
Distributions and seasonal variations of the thermocline in the China Seas and northwestern Pacific Ocean (POC_P-5441)
- 11:20 **Tsuneo Ono and Akira Kusaka**
Advanced timing of spring mixed layer development in recent years in the Oyashio region (POC_P-5036)
- 11:40 **Liqi Chen, Rik Wanninkhof, Wei-Jun Cai, Zhongyong Gao, Yuanhui Zhang, Suqing Xu, Kavin Sullivan and Yongchen Wang**
Comparison of air-sea fluxes of CO₂ in the Southern Ocean and the Western Arctic Ocean (POC_P-5309)
- 12:00 **Vladimir I. Ponomarev, Boris A. Burov and Alexander Yu. Lazaryuk**
Seasonal heat transfer in the bottom sediment–sea water column of Amurskii Bay (POC_P-5166)
- 12:20 **Chuanyu Liu and Fan Wang**
An N-shape thermal front in the western South Yellow Sea in winter (POC_P-5217)
- 12:40 *Lunch*
- 14:00 **Yun-Bae Kim, Kyung-Il Chang and Kuh Kim**
Eddy variability from direct current measurements in the southwestern East/Japan Sea (POC_P-5337)
- 14:20 **Muyin Wang, James E. Overland and Nicholas A. Bond**
Selection of climate models for regional ecosystem projections (POC_P-5200)

- 14:40 **Dmitry D. Kaplunenko, Olga O. Trusenkova and Vyacheslav B. Lobanov**
SSH variability in the northern Japan/East Sea from altimetry data (POC_P-5317)
- 15:00 **Xiao-Mei Yan, L. Zhang and Che Sun**
Analysis of the Kuroshio inflow at the East Taiwan Channel (POC_P-5292)
- 15:20 **Yejin Jung, Jong Hee Lee, Chang-Ik Zhang and Jae Bong Lee**
Decadal changes in temperature and salinity in Korean waters (POC_P-5190)
- 15:40 *Coffee / tea break*
- 16:00 **Georgy Shevchenko and Valery Chastikov**
Seasonal changes of the East Sakhalin Current from CTD data analysis (POC_P-5134)
- 16:20 **Tingting Zu and Jianping Gan**
Coupled estuarine-coastal circulation in the Pearl River Estuary: Response to the wind and tidal forcing (POC_P-5444)
- 16:40 **Hitoshi Kaneko, Ichiro Yasuda, Tohru Ikeya, Jun Nishioka, Takeshi Nakatsuka and Sachihiko Itoh**
Nutrient distribution around the Bussol' Strait (POC_P-5341)
- 17:00 **Kwang Young Jung, Young Jae Ro and Chung Ho Lee**
Impact of dam water release based on a numerical model of the Kangjin Bay, South Sea, Korea (POC_P-5132)
- 17:20 **Jing Lu, Fangli Qiao, Yonggang Wang, Changshui Xia and Feng Shan**
A numerical study of the sediment transport process from the Yellow River to the Bohai Sea and Yellow Sea (POC_P-5289)
- 17:40 **Andrey G. Andreev**
Interannual variations of the water transport through the Tsushima Strait and its impact on the chemical parameters and chlorophyll-*a* in the Japan/East Sea (POC_P-5449)

POC Contributed Paper Session Posters

- POC_P-5018 **Vladimir B. Darnitskiy and Maxim A. Ishchenko**
Cyclic thermohaline changes in the topographical eddy system above Erimo Seamount
- POC_P-5026 **Antonina M. Polyakova**
Atmospheric activity types over the Northern Pacific
- POC_P-5027 **Antonina M. Polyakova**
Especially dangerous wave heights in the Northern Pacific
- POC_P-5028 **Antonina M. Polyakova**
Extreme distribution of floating ice in the NW Pacific
- POC_P-5029 **Antonina M. Polyakova**
Destructive tsunamis near the coast of Primorye
- POC_P-5032 **Vladimir V. Plotnikov**
Change in seasonal cycles of ice formation in the Far East Seas of Russia in the second half of the 20th and beginning of the 21st centuries
- POC_P-5033 **Valentina V. Moroz and K.T. Bogdanov**
The Kuril-Kamchatka and Oyashio Currents system water structure and circulation variability
- POC_P-5034 **Valentina V. Moroz**
Oyashio and Kuroshio Currents water characteristic variability in the area of their interaction and formation zones
- POC_P-5053 **Anastasiya A. Abrosimova, Igor A. Zhabin, Luiza N. Propp and Vyacheslav A. Dubina**
Hydrographic and hydrochemical conditions near the Amur River mouth
- POC_P-5062 **Larissa S. Muktepavel and Tatyana A. Shatilina**
Mechanisms determining the formation of extremely low-ice winters in the Okhotsk Sea
- POC_P-5063 **Elena.V. Dmitrieva and Vladimir. I. Ponomarev**
Sea surface temperature aggregation from different sources to study multiple scale variability in the Japan/East Sea
- POC_P-5074 **Olga I. Kursova and Ahat A. Nabiullin**
Bibliometric analysis of oceanographic research: A case of Kuroshio literature, a half-century bibliographic survey
- POC_P-5076 **Gennady I. Yurasov**
Climatic characteristics of water masses, fronts, and currents in the Japan/East Sea
- POC_P-5077 **Ahat A. Nabiullin**
North Pacific oceanography: Past, present and the future. A half-century bibliometric survey
- POC_P-5095 **Talgat R. Kilmатов**
Calculation of entropy flux through the World Ocean surface
- POC_P-5103 **Tatyana A. Shatilina and G.I. Anzhina**
Features of atmospheric circulation and climate in the Far East in the beginning of the 21st century
- POC_P-5122 **Alexander N. Man'ko and Vera A. Petrova**
Temporal variability of heat exchange between the ocean and atmosphere in the North Pacific
- POC_P-5124 **Du Van Toan**
Tidal energy of waves in the South China Sea
- POC_P-5126 **Eugene V. Samko and N.V. Bulatov**
Structure and dynamics of eddies in the southern Okhotsk Sea

- POC_P-5180 **Nadezda M. Dulova and Vadim V. Novotryasov**
Free oscillations of the Japan/East Sea in Posyet Bay
- POC_P-5214 **Zheng Xian Yang**
Monitoring and assessing atmospheric deposition of pollutants to the Bohai Sea
- POC_P-5216 **Jinwen Zhang, Wenjing Fan, Jinkun Yang, Ruguang Yin, Wenxi Xiang, Yongshou Cheng, Dongsheng Zhang, Jingxin Luo and Guanghao Wei**
Harmonic analysis of and predictive methods for some marine hydrometeorological elements
- POC_P-5244 **Natalia Rudykh and Vladimir Ponomarev**
Cluster analyses of temperature and salinity in the Japan/East Sea pycnocline
- POC_P-5287 **D.N. Vasilevsky and L.N. Vasilevskaya**
Features of Far-Eastern monsoons in summer from temperature observations
- POC_P-5308 **Du Van Toan, Nguyen Hong Lan, Nguyen Huu Cuong, Nguyen Ngoc Tien, Do Huy Cuong, Nguyen Kim Cat and Vu Hai Dang**
Surface heat fluxes in the Tonkin Gulf
- POC_P-5314 **Masatoshi Sato and Tokihiro Kono**
The 1000 km-scale variability of the dynamic height revealed by Argo CTD data at 40°N in the North Pacific
- POC_P-5334 **Oleg A. Bukin, Andrey N. Pavlov, Konstantin A. Shmirko, Pavel A. Salyuk and Sergey Yu. Stolyarchuk**
Aerosols and ozone dynamics in the atmosphere over Peter the Great Bay
- POC_P-5355 **Alexander Yu. Lazaryuk and Vladimir Ponomarev**
Matching of Mark-IIIC CTD data
- POC_P-5357 **Petr V. Lushvin**
Spectral characteristics seismogenic clouds
- POC_P-5370 **Emi Shiraishi, Risako Sakai, Tokihiro Kono and Sachiko Oguma**
Density inversion in the Soya Current on the Hokkaido coast in the Okhotsk Sea
- POC_P-5391 **Tomowo Watanabe, Makoto Okazaki and Hideki Akiyama**
Long-term changes of the wintertime coastal water temperature around Japan in the 20th century
- POC_P-5436 **Nobuo Tsurushima, Masahiro Suzumura, Namiha Yamada and Koh Harada**
Dissolution rate change of calcite in seawater due to acidification by CO₂
- POC_P-5498 **Xing Wang, Maochong Shi, Zhenhui Gao and Lunyu Wu**
The oceanic general circulation and transport in the Bohai Sea

W1 MEQ Workshop and laboratory demonstration

Review of selected harmful algae in the PICES region: IV. *Karenia* and *Prorocentrum*

Co-Convenors: Vera L. Trainer (U.S.A.) and Ming-Yuan Zhu (China)

This workshop is the fourth of an annual series in which harmful algal bloom (HAB) species that impact all or most countries in the North Pacific are discussed in detail. In 2008, we will focus on two fish-killing species *Karenia* and *Prorocentrum*. *Karenia mikimotoi* is known to kill both wild and cultured fish in China, Korea and Japan. Although this species is absent, to date, in the eastern Pacific, other species from the genus *Karenia* are known to kill fish in the southeastern U.S. *Prorocentrum* is a “red tide” species that forms dense, colored blooms in China, Korea and Japan, resulting in economic loss to fisheries due to reduced consumer confidence. *Prorocentrum* blooms are relatively rare in the eastern Pacific, but have been documented occasionally in areas of the U.S. and Canada. The integration of information from each country will advance our understanding of these organisms. Topics will include modes of toxicity, distribution, impact (differences between toxic and nontoxic strains), as well as physiology and ecology in each of the member countries. In particular, we would like to identify additional studies needed specifically to understand the difference in occurrence and toxicity of these organisms in the eastern and western Pacific. The workshop will produce a list of recommendations to help guide collaborative HAB research priorities in PICES member countries over the next five years. The workshop will be preceded by a half-day laboratory demonstration on *Karenia* and *Prorocentrum* identification and detection methods.

Saturday, October 25, 2008 09:00 – 18:00

Laboratory demonstrations on detection techniques for algal toxins

- 09:00 **Introduction by convenors**
- 09:05 **Jacob Larsen**
Microscopic Observations and detailed analysis of *Karenia* and *Prorocentrum* taxonomy (W1-5477)
- 10:30 **Coffee/tea break**
- 10:50 **Jacob Larsen**
Microscopic observations and detailed analysis of *Karenia* and *Prorocentrum* taxonomy (W1-5477) (*continued*)
- W1 (MEQ) workshop**
- 14:00 **Jacob Larsen (Invited)**
Karenia and *Prorocentrum*: Review
- 14:30 **Yutao Qin, Jinhui Wang, Yanqing Wu, MingYuan Zhu and Lingyun Xiang**
Blooms of *Karenia mikimotoi* and *Prorocentrum* sp. in the East China Sea (W1-5273)
- 14:50 **Charles G. Trick**
A historical overview of *Karenia* and *Prorocentrum* occurrences in North American coastal waters (W1-5463)
- 15:10 **Tatiana V. Morozova, Tatiana Yu. Orlova, Marina S. Selina and Inna V. Stonik**
Species of the genera *Karenia* and *Prorocentrum* from the east coast of Russia (W1-5019)
- 15:30 **Douding Lu**
The species complex *Prorocentrum donghaiense* (“*dentatum*”) in East Asian waters (W1-5484)

- 15:50 **Mineo Yamaguchi, Shigeru Itakura and Ichiro Imai**
Ecophysiological characteristics of the harmful dinoflagellate *Karenia mikimotoi* in Japanese coastal waters (W1-5464)
- 16:10 *Coffee / tea break*
- 16:30 **Yang-Soon Kang, Youngtae Park, Kyung Suk Seo and Yoon Lee**
Karenia spp. and *Prorocentrum* spp. blooms in Korean coastal waters (W1-5496)
- 16:50 **Ruixiang Li, Mingyuan Zhu and Jianqiang Yang**
The formation of *Karenia mikimotoi* blooms in the Bohai Sea, China (W1-5483)
- 17:10 **Songhui Lu**
An ecological study of a *Karenia mikimotoi* bloom in the East China Sea in 2005 (W1-5482)
- 17:30 *Summary and wrap up*

W1 Workshop Posters

- W1-4991 **Yasuhiro Yamasaki, Masayuki Tameishi, Sou Nagasoe, Yohei Shimasaki, Yuji Oshima, Kenichi Yamaguchi, Tatsuya Oda and Tsuneo Honjo**
Allelopathic effects of the dinophyte *Prorocentrum minimum* on the growth of the bacillariophyte *Skeletonema costatum*
- W1-5495 **Jong-Gyu Park, Weol Ae Lim, Yang-Soon Kang, Kyung Suk Seo and Yoon Lee**
Pseudo-nitzschia in Korean coastal waters
- W1-5497 **Tae-Gyu Park, Yang-Soon Kang, Youngtae Park, Heon Meen Bae and Yoon Lee**
Fish killing dinoflagellate *Cochlodinium polykrikoides* (Dinophyceae) blooms in Korea in 2007

October 26, Sunday, HAB Section Oral Presentations

- 09:25 **Mingyuan Zhu, Ruixiang Li and Zongling Wang** (also a poster in S3-5451)
Study on growth of macro green algae *Enteromorpha prolifera*
- 14:20 **David G. Foley** (also a poster in S3-5384)
Data integration to help identify and monitor harmful algal blooms along the West Coast of North America
- 15:20 **Takafumi Yoshida and Hidemasa Yamamoto**
HAB-related Activities of NOWPAP CEARAC in the NOWPAP Region (HAB-5194)

W2 BIO Workshop

Oceanic ecodynamics comparison in the subarctic Pacific

Co-Convenors: Charles B. Miller (U.S.A.) and Atsushi Yamaguchi (Japan)

OECOS (Oceanic Ecodynamics COmparison in the Subarctic Pacific) is a PICES project, originally aiming to advance our understanding of the dynamics of lower trophic levels in the pelagic systems of the subarctic Pacific through a comparison of the east-west regions at a new level of detail. The first OECOS workshop was held in May 2005, at Oregon State University (U.S.A.), and participants from Japan (western Pacific region) and the U.S. and Canada (eastern Pacific region) discussed gaps in our knowledge about ecosystem dynamics of both eastern and western sectors of the subarctic Pacific, and new coordinated approaches for future research activities (PICES Scientific Report No. 32, 2006). In March-April 2007, the western group (OECOS WEST) conducted two cruises to the Oyashio region before and during massive spring phytoplankton blooms. In both cruises, high-frequency samplings were made of various biological components (bacteria, phytoplankton, micro-, meso- and macrozooplankton, and micronekton) and nutrients (including iron). To aid analysis of the origin and history of water masses at the study sites, frequent CTD casts and satellite monitoring of SST and water color were made. Drifting sediment traps were tracked to collect settling particles from the upper layers. At this workshop, recent achievements of OECOS WEST will be presented and discussed along with new OECOS WEST and EAST research prospects.

Sunday, October 26, 2008 09:00 – 18:00

- 09:00 ***Introduction by convenors***
- 09:10 **Atsushi Yamaguchi and Charles B. Miller**
OECOS Workshop, PICES XVII, Dalian, China: Physical, chemical and biological dynamics of the Oyashio spring bloom (W2-5454)
- 09:30 **Tokihiko Kono and Masatoshi Sato (Invited)**
Effect of water mass structure on the spring bloom in the Oyashio region revealed by sequential observations (W2-5361)
- 10:00 **Kenshi Kuma, Koji Sugie, Satoshi Fujita and Yuta Nakayama**
Temporal variability and bioavailability of iron and nutrient during spring phytoplankton bloom in the Oyashio region (W2-4988)
- 10:30 ***Coffee / tea break***
- 11:00 **Tomonori Isada, Ai Hattori, Koji Suzuki, Mitsuhide Sato and Ken Furuya**
Community structure, productivity and photosynthetic physiology of phytoplankton in the Oyashio region of the NW subarctic Pacific during spring 2007 (W2-5142)
- 11:30 **Takashi Ota, Toru Kobari, Mutsuo Ishinomiya, Yasushi Gomi and Yasumasa Oikawa**
Grazing activity of microzooplankton during a diatom bloom in the Oyashio region (W2-5356)
- 12:00 **Atsushi Yamaguchi, Yuka Onishi, Aya Omata, Mariko Kaneda, Momoka Kawai and Tsutomu Ikeda**
Vertical distribution and population structure of large grazing copepods during spring phytoplankton bloom in the Oyashio region (W2-5120)
- 12:30 ***Lunch***
- 14:00 **Toru Kobari, Yumi Inoue, Yosuke Nakamura, Hidemi Okamura, Takashi Ota, Yuichiro Nishibe and Mutsuo Ichinomiya**
Feeding impacts of ontogenetically migrating copepods on the spring phytoplankton bloom in the Oyashio region (W2-5066)

- 14:30 **Hye Seon Kim, Atsushi Yamaguchi and Tsutomu Ikeda**
Abundance, metabolic rate and body composition of the euphausiid *Euphausia pacifica* and *Thysanoessa inspinata* during spring phytoplankton bloom in the Oyashio region (W2-5048)
- 15:00 **Tadanori Fujino, Yusuke Ito, Hiroki Yasuma and Kazushi Miyashita**
Abundance and distribution of micronektonic, mesopelagic fish at the 2007 OECOS observation site (Northwest Pacific) (W2-5318)
- 15:30 **Michael Dagg, S. Strom and H. Liu**
Phytoplankton community structure in the HNLC subarctic Pacific Ocean is determined by *Neocalanus flemingeri* and *N. plumchrus* (W2-4996)
- 16:00 ***Coffee / tea break***
- 16:20 **Suzanne L. Strom, K.A. Fredrickson, F. Perez, M.B. Olson and E.L. Macri**
Lower trophic level responses to gradients in iron availability in the eastern subarctic Pacific (W2-5428)
- 16:50 **Charles B. Miller**
OECOS Workshop: Open issues in production ecology of the oceanic Gulf of Alaska (W2-5455)
- 17:10 ***Workshop Discussion***
- Findings of OECOS-WEST
 - Comparison between east and west
 - Remaining unsolved problems

W3 MONITOR/ESSAS Workshop

Status of marine ecosystems in the sub-Arctic and Arctic seas - Preliminary results of IPY field monitoring in 2007 and 2008

Co-Convenors: Ken Drinkwater (Norway), George Hunt, Jr. (U.S.A.), Sei-Ichi Saitoh (Japan), and Jin Ping Zhao (China)

The sub-Arctic and Arctic seas have distinct marine ecosystems that are affected by seasonal sea ice. During the summer, the water column is stratified by melt water from retreating sea ice, and phytoplankton are found near the sea surface, where the incoming sunlight is sufficient for photosynthesis. These summer conditions result in the highest primary production in the world's oceans and support high levels of fishery resources. Algae that live on the bottom of sea ice also play an important role in maintaining fishery resources by falling and decomposing on the sea floor in summer. Recently, global climate change has become a cause for concern. The greenhouse effect, produced by increasing anthropogenic CO₂ emissions, has induced increases in atmospheric and seawater temperatures. The effect of such increases on the cryosphere of the Arctic is already visible, and understanding its direct and indirect effects on the physical and chemical environments and the responses of marine ecosystems is critical. However, the knowledge of most aspects and responses of marine ecosystems to global climate change is still inadequate. PICES nations have conducted several field programs in these regions during the International Polar Year (IPY) 2007-2008. This workshop will discuss the features and mechanisms of the responses of marine ecosystems to global climate change in the Arctic and sub-Arctic seas, based on results from the IPY cruises in 2007 and 2008.

Updated Sept. 30

Friday, October 24, 2008 09:00 – 18:00

- 09:00 *Introduction by convenors*
- 09:10 **Robert R. Dickson (Invited)**
The integrated Arctic Ocean Observing System (iAOOS) (W3-5252)
- 09:40 **Ling Du, Jia Wang and Juncheng Zuo**
Sea level variation and its contributing factors in the Arctic Ocean and sub-Arctic region (W3-5251)
- 10:00 **Yong Cao and Jinping Zhao**
A study of the subsurface warm water and its formation mechanism in the Canada Basin (W3-5250)
- 10:20 **Jie Su, Dong Xu, Shujiang Li and Jinping Zhao**
Interannual variations of sea ice in the Pacific side of the Arctic and its relation with the Pacific Inflow (W3-5245)
- 10:40 *Coffee / tea break*
- 11:00 **Kohei Mizobata, Koji Shimada, Sei-ichi Saitoh, Toru Hirawake and Masahiro Hori (Invited)**
Japanese IPY activities in the western Arctic Ocean and the Bering Sea (W3-5050)
- 11:30 **Jinping Zhao and Jiuxin Shi**
Study of the extension of Pacific warm water under sea ice of the Chukchi Sea (W3-5316)
- 11:50 **Liqi Chen and Zhongyong Gao**
Differences of water masses in Bering Strait throughflow and mixing on their way to the Arctic Ocean (W3-5225)
- 12:05 Sei-Ichi Saitoh and Toru Hirawake (Moved from Poster Session)**
Preliminarily results from the Oshoro-Maruru IPY cruises in summer 2007 and 2008 (W3-5228)
- 12:20 **Jiuxin Shi, Jinping Zhao and Shujiang Li**
The double haloclines in the Canada Basin under the warming climate (W3-5321)
- 12:35 *Lunch*

- 14:00 **Lee W. Cooper and Jacqueline M. Grebmeier (Invited)**
Results from BEST, BSIERP and other IPY-relevant research in the northern Bering Sea (W3-5212)
- 14:30 **Nikolay S. Vanin**
The summer hydrography of the west Chukchi Sea shelf during opposite patterns of atmospheric circulation in 2007 and 2003 (W3-5012)
- 14:50 **Sei-Ichi Saitoh, I Nyoman Radiarta, Toru Hirawake, Yasunori Sakurai, Mamoru Yabe, Yoshihiko Kamei and Shogo Takagi**
Change in the biodiversity of the demersal fish community in the northern Bering and Chukchi Seas (W3-5229)
- 15:10 **Kenneth F. Drinkwater**
A frontal attack – Norwegian IPY studies of the Arctic Front in the Norwegian and Barents Seas (W3-5113)
- 15:30 *Coffee / tea break*
- 16:00 **Rolf Gradinger, Bodil Bluhm and Katrin Iken (Invited)**
The role of sea ice in the sub-Arctic Bering Sea ecosystem (W3-5427)
- 16:30 **Jun Nishioka, Takeshi Nakatsuka, Kenshi Kuma, Yutaka W. Watanabe, Tsuneo Ono and Kay I. Ohshima**
The importance of sea-ice formation in the Sea of Okhotsk for supplying iron to the western subarctic Pacific (W3-5105)
- 16:50 **Kenneth F. Drinkwater (Moved from Poster Session)**
The Ecosystem Studies of Subarctic and Arctic Regions (ESSAR) Consortium (W3-5114)
- 17:10 **Geneviève Desportes, Daniel Pike, Mario Acquarone, Igor Golyak, Jean François Gosselin, Thorvaldur Gunnlaugsson, Sverrir D. Halldórsson, Mads Peter Heide-Jørgensen, Jack Lawson, Christina Lockyer, Bjarni Mikkelsen, Droplaug Ólafsdóttir and Malene Simon**
From the Barents Sea to the St. Lawrence: A Trans North Atlantic Sightings Survey (T-NASS) (W3-5267)
- 17:30 **George L. Hunt, Jr.**
Hotspots in cold seas (W3-5367)
- 17:50 *Discussion and summary*

W3 Posters

- W3-5015 **Wen Yu, Liqi Chen, Jianping Cheng, Jianhua He, Zhongyong Gao and Heng Sun**
Western Arctic Ocean POC flux derived by the small volume 234Th method
- W3-5075 **Eduard A. Spivak, Nina I. Savelieva and Anatoliy N. Salyuk**
Winter oceanographic conditions in the coastal waters of the Laptev Sea (Buor-Khaya Bay) – Results of IPY field monitoring in 2007
- W3-5102 **Maxim V. Ivanov and A.S. Astakhov**
Mercury distribution in the sediments of the Chukchi Sea
- W3-5208 **Shinya Nagashima, Hideaki Kudo and Masahide Kaeriyama**
Spatial comparison of the feeding ecology of Pacific salmon in the North Pacific Ocean during summer of 2007 IPY (Preliminary results)

W4 CCCC/POC/FIS Workshop

Climate scenarios for ecosystem modeling (II)

Co-Convenors: Michael G. Foreman (Canada), Anne B. Hollowed (U.S.A.), Suam Kim (Korea) and Gordon McFarlane (Canada)

Members of the Climate Forcing and Marine Ecosystem Task Team (CFAME), the Working Group on Evaluations of Climate Change Projections (WG 20), and the FIS Committee will present the results of their research on developing and applying the output of regional and global climate scenarios to ecosystem and fish stock forecasts. These groups have been developing conceptual and empirical models of the mechanisms that link climate variation to the dynamics of marine ecosystems and their commercially important species. Their work has focused on comparisons among a diversity of North Pacific ecosystems with differing dominant physical processes. WG 20 is developing higher resolution regional coupled atmosphere-ocean models forced by IPCC global or regional models to provide forecasts of regional parameters (such as SST, sea ice cover, and river discharge) that are relevant to ecosystem processes. This workshop will provide an opportunity to discuss the results, present them to the PICES community, and describe their potential for the FUTURE Program.

Friday, October 24, 2008 09:00 – 18:00

- 09:00 **Introduction by convenors**
- 09:10 **Thomas A. Okey, Anne B. Hollowed, Michael J. Schirripa and Richard J. Beamish (Invited)**
The 2035 modelling challenge for forecasting climate impacts on marine biota and fisheries: A collaboration emerging from an international workshop (W4-5422)
- 09:40 **James E. Overland, Muyin Wang and Nicholas A. Bond**
Utility of climate models for regional ecosystem projections (W4-5453)
- 10:00 **Young Shil Kang and Sukgeun Jung**
Regional differences in responses of meso-zooplankton to long-term oceanographic changes in Korean sea waters (W4-5196)
- 10:20 **Yasuhiro Yamanaka et al.**
(WG 20 update): Recent results connecting climate change to fish resources using the high resolution model, COCO-NEMURO
- 10:35 **Coffee / tea break**
- 10:55 **Emanuele Di Lorenzo et al.**
(WG 20 update): North Pacific Decadal Variability in the FUTURE
- 11:10 **James Christian et al.**
(WG 20 update): Canadian Earth System Model scenarios for the North Pacific
- 11:25 **Qigeng Zhao, Qingquan Li, Jianglong Li and Fanghua Wu**
A simulation of acidification in the Pacific Ocean (W4-5432)
- 11:45 **Enrique Curchitser et al.**
(WG 20 update): Downscaling climate scenarios with a fully coupled global-to-regional model
- 12:00 **Michael G. Foreman, William J. Merryfield, Badal Pal and Eric Salathé**
An update of regional climate modelling along the British Columbia Shelf (W4-5152)
- 12:20 **Vadim Navrotsky**
(WG20 update): On the role of ocean and land living matter in Global Climate Change
- 12:35 **Lunch**

- 14:00 **Anne B. Hollowed, Teresa A'mar, Richard J. Beamish, Nicholas A. Bond, James E. Overland, Michael Schirripa and Tom Wilderbuer**
Fish population response to future climate drivers: A next step forward (W4-5365)
- 14:20 **Gordon H. Kruse, Jie Zheng and James E. Overland**
A scenario approach to forecast potential impacts of climate change on red king crabs in the Eastern Bering Sea (W4-5475)
- 14:40 **Sukyung Kang, Jae Bong Lee, Anne B. Hollowed, Nicholas A. Bond and Suam Kim**
Techniques for forecasting climate-induced variation in the distribution and abundance of mackerels in the northwestern Pacific (W4-5468)
- 15:00 **Michio J. Kishi, Yasunori Sakurai and Masahide Kaeriyama**
What affects on the growth and stock of chum salmon, walleye pollack, and common squid in the Northern Pacific (W4-5467)
- 15:20 *Coffee / tea break*
- 15:40 **Richard J. Beamish**
A tail of two sockeyes (W4-5041)
- 16:00 **Richard J. Beamish**
Evidence that the carrying capacity of local marine ecosystems can regulate the productivity of chinook salmon (W4-5042)
- 16:20 **Discussions** (led by Young-Shil Kang and James Overland):
- Finishing off CFAME (timeline, assignments)
 - Final report, publications, etc....
 - Needs from WG20

Saturday, October 25, 2008 09:00 – 10:30

- 09:00 **Discussions** (led by A. Hollowed)
10:30

W4 Posters

- W4-5061 **Yulia Rybiakova**
Pollen records from deep-sea core LV 32-33: changes of climate and vegetation of the Northwest Japan Sea and of his shores during Holocene.
- W4-5472 **Leonid Klyashtorin and Alexey Lyubushin**
Cyclic climate changes and salmon production in the North Pacific

W5 CCCC/ESSAS Workshop

Marine ecosystem model inter-comparisons

Co-Convenors: Masahiko Fujii (Japan), Shin-ichi Ito (Japan) and Bernard A. Megrey (U.S.A.)

Comparative analysis is a valuable scientific activity because the size and complexity of marine ecosystems precludes conducting controlled *in situ* experiments. It is also a powerful technique for understanding the important similarities and differences between and among ecosystems. Modelling is a central approach to comparative analyses of ecosystem structure, function and responses. It is important to understand whether inter-relationships among physical, chemical and biological variables vary geographically, and the extent to which any particular conclusions depend on the model used to derive them. The model inter-comparison project will use different models to develop forecasts of different ecosystems and will use different models to compare forecasts of the same location/species. The intention of the project is to develop ensemble model forecasts to compare predicted and observed responses of marine ecosystem types to global changes—similar to the widely-accepted approach used by the IPCC to evaluate alternative climate models. The project will implement the same model evaluation process with marine ecosystem models rather than climate prediction models. A major goal of the workshop is to begin planning the work of the project. Workshop activities will include: (1) nomination and discussion of potential models (and their data needs) to compare (the EurOceans Model Shopping Tool, http://www.eur-oceans.eu/WP3.1/shopping_tool/about.php, provides a large array of documented models from which to choose); (2) nominate location(s) for comparisons; (3) identify comparison protocols to compare model performance, given data needs against location data availability and compatibility; (4) identify the most appropriate indicator species on which to base comparisons, such as krill, as the “metric” for correct model behavior; and (5) plan “pseudo-controlled” experiments. Workshop participants should have at least one of the following characteristics: (1) be familiar with ecosystem models from beyond the PICES region; (2) be knowledgeable about running models; (3) be experts on the life histories of selected organisms and data associated with them; and (4) have a broad perspective on marine ecosystems.

Saturday, October 25, 2008 09:00 – 18:00

- 09:00 **Introduction by convenors**
- 09:10 **Fei Chai, Masahiko Fujii and Marjorie Friedrichs (Keynote)**
A regional ecosystem modeling intercomparison project (W5-5369)
- 09:55 **J. Icarus Allen (Invited)**
Some thoughts on assessing the skill of marine ecosystem models (W5-5085)
- 10:15 **William T. Peterson, Tracy Shaw, Jennifer Menkel and Leah Feinberg (Invited)**
An overview of the ecology and population dynamics of euphausiids around the Pacific Rim (W5-5459)
- 10:30 **Coffee / tea break**
- 11:00 **Harold (Hal) P. Batchelder (Invited)**
Copepods as indicator species for comparing pelagic marine ecosystem models (W5-5366)
- 11:20 **Toru Kobari, Tsutomu Ikeda, Michael Dagg and Atsushi Yamaguchi (Invited)**
Neocalanus copepods are useful for inter-comparison of marine ecosystem models in the PICES region (W5-5175)
- 11:40 Discussion and Strategy
- 12:30 **Lunch**
- 13:30 Break Out Groups: Models, Indicator Species, Protocol, Locations
- 15:00 **Coffee / tea break**

- 15:30 Breakout Group Reports
- 16:00 Discussion, Summary, Terms of Reference, and Recommendations