


PICES

North Pacific Marine Science Organization (PICES)

Second Annual Meeting

Program

 October 25-30, 1993

Seattle, Washington, U.S.A.

MEETINGS & SOCIAL GATHERINGS

25th Oct., 93 (Monday)

Registration (08:00 -)

Opening Session (09:00 - 11:00)

1. Address of welcome by Dr. D. James Baker, Under Secretary of Commerce for Oceans and Atmosphere
2. Remarks by Chairman
3. Remarks by representatives of contracting parties
4. Announcements
5. Keynote lecture by Prof. J.M. Wallace: Climate variability over the North Pacific

Governing Council * (11:00 - 12:30)

Wine and Cheese Party (17:30 - 19:00)

26th Oct., 93 (Tuesday)

Finance & Administration Committee * (13:00 - 17:30)

Physical Oceanography and Climate Committee / Working Group 1 combined meeting
(Meany Tower Hotel / 19:00 - 22:00)

Fishery Science Committee meeting (Meany Tower Hotel / 19:00 - 22:00)

Marine Environmental Quality Committee meeting * (Meany Tower Hotel / 19:00 - 22:00)

27th Oct., 93 (Wednesday)

Governing Council * (13:00 - 17:30)

Dinner gathering at the Seattle Aquarium (18:30 - 21:00)

28th Oct., 93 (Thursday)

Closing Scientific Session (11:00 - 12:00)

Summarizers' impressions of the scientific topic and paper sessions

Scientific Committees (13:00 - 18:00)

Physical Oceanography and Climate Committee

Biological Oceanography Committee

Marine Environmental Quality Committee

Fishery Science Committee

29th Oct., 93 (Friday)

Science Board * (09:30 - 12:00 & 13:00 - 18:00)

30th Oct., 93 (Saturday)

Governing Council * (09:00 - 13:00)

* denotes closed sessions

♣ All meetings and gatherings at the Sand Point location unless otherwise stated

♣ Room assignment will be posted outside the Secretariat office.

SCIENTIFIC PROGRAM SESSIONS

25th Oct., 93 (Monday) - 09:00

Keynote lecture by Prof. J.M. Wallace. Climate variability over the North Pacific

25th Oct., 93 (Monday) - 13:00 - 17:30

LONG-TERM MONITORING FROM PLATFORMS OF OPPORTUNITY (Science Board: Topic 5)

Convener: Dr. Charles B. Miller (U.S.A.)

Charles B. Miller. An introductory review of the platforms of opportunity concept

Paul E. Smith. On a use for long-term observations on platforms of opportunity for simple population models of fish

Douglas R. McLain. Ship of opportunity observations for enhancement of oceanic weather and current charting

William L. Stubblefield. NOAA ships as well-instrumented platforms of opportunity

Peter Wiebe. Drilling platforms as opportunities for time-series of oceanographic observations in coastal locations

Howard I. McElderry. Fishing vessel observer programs in British Columbia

Janet M. Wall. United States Fisheries Observer Program in the Northeast Pacific Ocean

Dudley B. Chelton & P. Ted Strub. Active satellite techniques applied in cloudy northern seas

Roy Mendelssohn & Claude Roy. The importance of easy access to long-term oceanographic datasets when examining trends and changes in variability

26th Oct., 93 (Tuesday) - AM

OCEAN CIRCULATION AND CLIMATE VARIABILITY IN THE SUBARCTIC PACIFIC (09:00 - 12:25)

(Physical Oceanography and Climate Committee: Topic 1)

Conveners: Prof. Paul H. LeBlond (Canada), Dr. James D. Overland (U.S.A.) and Prof. Stephen C. Riser (U.S.A.)

Yutaka Nagata. Possible formation mechanisms of the North Pacific Intermediate Water in the western North Pacific

Lynne D. Talley & Yutaka Nagata. On North Pacific Intermediate Water Formation

Mark J. Warner, John L. Bullister, Richard H. Gammon & David Wisegarver.

Distributions of anthropogenic chlorofluorocarbons F-1 and F-12 in the North Pacific Ocean: 1985-1989

S.V. Gladyshev. The role of the Okhotsk Sea and East-Kamchatka Current in the North Pacific Intermediate Water

PAPERS FOR THE MARINE ENVIRONMENTAL QUALITY COMMITTEE (09:00 - 12:00)

Bradley G. Stevens, Jan A. Haaga & Brian H. Himelbloom. Effects of seafood waste dumping on the microbial and megafaunal communities of an Alaskan Bay

Jing Zhang. Biogeochemistry of large Chinese estuaries

Takeshi Umezu. Oceanic distribution of 110m-Ag, 108m-Ag and 60-Co estimated with squid hepatopancreas

Marina A. Vaschenko & P.M. Zhadan. Disturbance of gametogenesis of sea urchins and scallops as an index of ecological situation in polluted coastal waters

John T. Landahl, Bruce McCain, Sin-Lam Chan, Donald W. Brown, Susan M. Pierce & Usha Varanasi. Trends in organic chemical contaminants in sediments and fish on the west coast of North America from 1984-1989: results from the National Benthic Surveillance Program

⌘Presentation time, room assignment and changes due to cancellation and absence will be posted outside the Secretariat office every morning.

Stephen C. Riser. The Okhotsk Sea as a ventilation site for the Intermediate Waters of the North Pacific Ocean

V.I. Il'ychev & A.S. Vasiliev. Studies of processes for the Intermediate Water mass of low salinity to be generated in the northern Pacific

Toshihiro Kono & Yasuhiro Kawasaki. Formation process of Oyashio water

Talgat R. Kilmatov & Vladimir A. Kuzmin. The horizontal structure of the North Pacific Intermediate Water of lowered salinity

K. Rogachev, P. Tishchenko & A. Bychkov. Climate-related physical and biochemical processes in the Pacific Western Subarctic

Feng-Hua Wang. Numerical stimulation of dilution and diffusion of soluble pollutants in Jinzhou Bay

26th Oct., 93 (Tuesday) - PM

PAPERS FOR THE PHYSICAL OCEANOGRAPHY AND CLIMATE COMMITTEE (13:30 - 17:00)

H. Onishi & K. Ohtani. Zonal transport estimation from geotrophic flow in the North Pacific Subarctic Gyre

Thomas C. Royer. Time series measurements in the northern North Pacific

Ronald K. Reed. Variability of circulation in the western Subarctic Gyre, 1990-1992

Man-Li Wu, Ming-Yu Zhou & J. Sunsking. Frest water balance in the northern Pacific

C.C. Ebbesmeyer & W. Tangborn. Columbia River Reservoir operations related to northeast Pacific Sea surface salinity trends, 1930-1990

Liu-Sen Xie & William W. Hsieh. Global upwelling -- interannual variability and climate change

Greg Holloway & Michael Eby. Dynamics of circulation in the North Pacific

C.S. Wong. Processes in the subarctic Pacific Ocean affecting the uptake and transport of CO₂

A.V. Verkhunov & V.V. Sapozhnikov. Observation of the seasonal and interannual variability of the Bering Sea Intermediate Waters in 1990-1992

G.I. Yurasov & I.D. Rostov. Anomalous features of subarctic front structure

H.R. Shin, C.S. Kim & S.K. Byun. Anticyclonic warm eddy in the western part of the East Sea (Japan Sea)

Jian-Hua Qi & Fa-Gao Zhang. The numerical simulation of the three-dimensional baroclinic circulation on Yellow and Bohai Sea

PRIORITY CHEMICAL AND BIOLOGICAL CONTAMINANTS IN THE NORTH PACIFIC ECOSYSTEM (Marine Environmental Quality Committee: Topic 3) (13:00 - 16:55)
Convener: Dr. Usha Varanasi (U.S.A.)

Usha Varanasi. Introduction

Edward D. Goldberg. Pollutants and Contaminants in monitoring programs for the Asian Pacific Waters

Jia-Yi Zhou & Ming-Jiang Zhou. Priority Chemical and Biological Contaminants in the Marine Environment of China

D.C.G. Muir, C.A. Ford, M. Segstro, M. Simon, R.J. Norstrom & K. Langelier.

Comparisons of PCBs and other organochlorines in cetaceans from Canadian waters: spatial and temporal trends and data gaps

Masaaki Kinoshita. Result of monitoring of adjacent sea of Japan in 1992

James Carlton. Transoceanic transport of biological contaminants: ballast water, exotic species and the role of ICES

Masataka Watanabe. Nutrient enrichment and dynamic response of element cycle in the marine ecosystem

27th Oct., 93 (Wednesday) - AM

**HIGH RESOLUTION
PALEOECOLOGICAL STUDIES IN THE
SUBARCTIC PACIFIC (Biological
Oceanography Committee: Topic 2)
(09:00 - 11:30)**
Convener: Prof. Michael M. Mullin
(U.S.A.)

**Rosanne D'Arrigo, Gordon Jacoby &
Gregory Wiles.** High-resolution Tree-Ring
records from coastal Alaska and British
Columbia: associations with Northeast Pacific
climate

G. Holdsworth. Late 19th century
anthropogenic influence on the Northern
Hemisphere atmosphere

**Tim R. Baumgartner, Andy Soutar &
Vincente Ferreira.** Interdecadal variability of
coastal pelagic fish populations in the
California Current over the past two millennia
Sergey A. Gorbarenko. Paleooceanography
of the far Northwestern Pacific and the Bering,
Okhotsk and Japan Seas throughout the past
25,000 years

**PAPERS FOR THE FISHERY SCIENCE
COMMITTEE (09:00 - 12:00)**

N. Brent Hargreaves. Interannual and
decadal variation in abundance of Pacific hake
and Pacific mackerel in Barkley Sound, B.C.,
and effects on mortality of juvenile salmon
**David W. Welch, Yukimasa Ishida &
Kazuya Nagasawa.** Oceanographic controls

on the distribution of Pacific salmon in the
sub-arctic North Pacific, and the potential
impact of 2x CO₂ climate change scenarios
**R. Ian Perry, N. Brent Hargreaves, and
Brenda J. Waddell.** Juvenile salmon and
plankton trophic interactions during early
summer migrations on the B.C. continental
shelf

**Keith A. Thomson, James Ingraham, Jr.,
Michael C. Healey, Paul H. LeBlond, Ian
D. Jardine, Cornelius Groot, Christopher
G. Healey, and Sonia M. Hanlon-
Thomson.** The influence of ocean currents
on sockeye salmon returning to the Fraser
River

R. J. Beamish. Response of Pacific salmon
and herring in the Strait of Georgia
Chuan-Lan Lin and Bing-Rong Xu. The
fluctuation of the fish species dominance in
the East China Sea and the oceanic climate
events

Qi-Sheng Tang and Xian-Shi Jin. Resource
species shifts in dominance and their causes in
the Yellow Sea ecosystem

**Chang-Ik Zhang, Suam Kim, and Myoung-
Ho Sohn.** Changes in fish abundance and
species dominance in the Yellow Sea

V. I. Radchenko. Long-term variability in the
Bering Sea surface geostrophic circulation and
its possible influence on the pelagic fish
community

**Scott G. Hinch, Michael C. Healey, Ron E.
Diewert, Keith A. Thomson, Michael A.
Henderson, Roy Hourston, and Francis
Juanes.** Potential effects of climate change on
adult Fraser River sockeye salmon

Bo Huang and Rui-Yu Liu. New technique
for marine ecosystem forecast and
management: Marine ecosystem modeling
with grey system theory

Steven R. Hare. Quantifying the temporal
and spatial aspects of climate change and its
potential impact on marine fish populations

27th Oct., 93 (Wednesday) - PM

**PAPERS FOR THE BIOLOGICAL
OCEANOGRAPHY COMMITTEE (13:30 -
16:40)**

- Sin-Jae Yoo.** Monitoring plan for lower trophic level productivity of the Yellow Sea large marine ecosystem
- V.P. Shuntov, E.P. Dulepova, V.I. Radchenko & O.S. Temnykh.** On the beginning of large reformation in communities of plankton and nekton of the Far Eastern seas
- Michael M. Mullin.** Reproduction of the Copepod, *Calanus pacificus*, off Southern California in the anomalous winter-spring of 1992, relative to 1989-91
- Xin-Hua Zhu, He-Zhou Wu, Feng-Shan Xu, Zhi-Jin Zhao & Mao-Zhong Ye.** Study on the heterogeneity of spatiotemporal patterns of nekton community structure in the coastal waters of Yellow Sea and Bohai Sea
- Robert C. Francis & Steven R. Hare.** A case for historical science in large marine ecosystem research: teasing order out of chaos
- R.C. Hobbs, C.T. Tynan & J.A. Lerczak.** Biological and environmental habitat factors for marine mammal species caught in the North Pacific driftnet fisheries for squid
- V.V. Navrotsky & T.A. Zadonskaya.** Eddies, fine structure and zooplankton abundance in the North Pacific subarctic front zone
- David W. Welch, Yukimasa Ishida, Nancy D. Davis, Kazuaki Tadokoro & Peggy H. Ostrom.** Inter-annual trophic phasing in the central North Pacific Ocean: evolutionary evidence for high seas competition in Pacific salmon

**SHIFTS IN FISH ABUNDANCE AND
SPECIES DOMINANCE IN COASTAL
SEAS (Fisheries Oceanography
Committee: Topic 4) (13:00 - 17:30)
Conveners: Prof. Qi-Sheng Tang
(China) and Dr. Alec D. MacCall
(U.S.A.)**

- Daniel Lluch.** Fisheries and the regime problem
- Kenneth Sherman.** Variability and sustainability of biomass yields in large marine ecosystems
- Anne B. Hollowed.** Decadal scale shifts in ocean conditions and their impact on the abundance of northeast Pacific fish stocks
- Clifford L. K. Robinson, and Daniel M. Ware.** Trends in fish catch and ocean climate in southern British Columbia during the 20th century
- Richard H. Parrish.** Recent and expected changes in the abundance and geographical centers of abundance of the dominant epipelagic fishes of the subtropical north Pacific
- Jeffrey J. Polovina.** Physical and biological consequences of a climate event in the central north Pacific
- Takashige Sugimoto.** Effect of climatic and oceanic events on long-term variations in pelagic fish populations focusing on Japanese sardine
- Hiroyuki Matsuda, Tokio Wada, Yasuhiro Takeuchi, and Yashiharo Matsumiya.** Effects of environmental fluctuation and interspecific competition on the species replacement pattern of pelagic fishes
- Shigeo Funakoshi, Hideaki Nakata, and Motohiko Nakamura.** Interactions between sardine and anchovy populations with special reference to the decadal changes in their life cycles: A case study in the Enshu-nada Sea, Japan
- V. V. Kuznetsov.** Significance of abiotic and biotic factors in shifts in species dominance in coastal pelagic ichthyocenoses in northwest Pacific
- A. S. Vasiliev.** Adaptive learning systems for forecasting marine biota state and phase transition (on the example of sauries in the western Pacific)
- Jeremy S. Collie and Paul D. Spencer.** Modeling shifts in fish stock abundance in the eastern north Pacific

28th Oct., 93 (Thursday) - 09:00 - 11:00

PAPERS FOR THE LONG-TERM MONITORING FROM PLATFORMS OF OPPORTUNITY SESSION (Science Board)
Convener: Dr. Charles B. Miller (U.S.A.)

- A. Harashima, R. Tsuda, Y. Tanaka, T. Kimoto, S. Tanaka, K. Furusawa, O. Kurokawa, Y. Takeuchi & Jae-Ryoung Oh.** A semi-continuous environmental monitoring and associated chemical and biological measurement using seawater intake of Japan-Korea Ferry
- Yuji Tanaka, Ryohei Tsuda & Akira Harashima.** *In situ* monitoring of chlorophyll-*a* and six spectra of phyto-plankton via laser-induced fluorescence through an optical fiber on Japan-Korea Ferry
- Robert Leben & George H. Born.** Monitoring of the Bering Sea and Gulf of Alaska using Topex and ERS-1 altimeter data
- A.V. Alekseev, O.A. Bukin & A. Yu. Mayor.** Laser monitoring for chlorophyll-A in the North Pacific
- C.S. Wong & F.A. Whitney.** Distribution of nitrate in the subarctic Pacific Ocean: results from trans-Pacific ships-of-opportunity and Station P time-series monitoring
- Chad A. Fox & Robert Leben.** Observations of circulation variability on the Bering Sea using Geosat altimetry data
- Fabian Wolk & Hidekatsu Yamazaki.** Three dimensional CDT-data visualization on a graphics workstation
- V.V. Navrotsky & A.A. Malyshev.** The North Pacific ecological monitoring: scientific bases, technical possibilities and organizational problems

28th Oct., 93 (Thursday) - 11:00 - 12:00

CLOSING SCIENTIFIC SESSION

Summarizers' impression of the scientific topic and paper sessions

Poster Session (throughout the duration of meeting)

Physical Oceanography and Climate Committee:

1. **Talgat R. Kilmатов.** The modeling of cross-structure of the Pacific subarctic frontal zone
2. **I.D. Rostov & E.V. Dmitrieva.** Oceanographic data base on the northern Pacific and marginal seas: contemporary conditions and prospects of development
3. **I.D. Rostov.** Fine structure of water masses in the north-western Pacific: statistical generalization
4. **I.D. Rostov, G.I. Yurasov, I.A. Zhabin, V.P. Tapinov & E.M. Boyko.** Intrusive layering and water mixing in frontal zones and eddy formation area of Kuril-Kamchatka region
5. **A.S. Vasiliev.** Proximate monitoring of dynamic structures in the northern Pacific
6. **S.V. Simonenko.** The statistical analysis and dynamic interpretation of temperature variations near the shelf boundary
7. **T.R. Kilmатов, V.A. Kuzmin, V.V. Dolgov & O.G. Yurasov.** On some peculiarities of crossfrontal structure of the Pacific subarctic frontal zone
8. **Xiao-Jun Yuan & Lynne D. Talley.** Characteristics and frontogenesis of the subarctic front in the North Pacific
9. **A.S. Krovnin.** Sea surface temperature anomaly fluctuations in the North Pacific
10. **Feng-Hua Wang.** Numerical simulation of storm surge in the North part of the Liaodong Bay
11. **G.A. Cannon, D.J. Pashinski & T.J. Stanley.** Variability of intermediate water over the Juan de Fuca Ridge
12. **J.L. Bullister, D.P. Wisegarver & F.A. Menzia.** The NOAA-PMEL Repeat Hydrography Program in the Pacific
13. **I.A. Zhabin, G.I. Yurasov & V.P. Tapinov.** Trans-Pacific Section at 50°N: properties distribution and water mass fine structure

14. **V.P. Shevtsov, A.S. Salomatina & I.G. Malkina.** Mezzo- and microscale hydrophysical processes influence on biological productivity and distribution of marine organisms

Marine Environmental Quality Committee:

1. **A.V. Tkalin & T.A. Belan.** Anthropogenic chemicals and man-made changes in the North Pacific ecosystems
2. **A.I. Agatova, N.M. Lapina & N.I. Torgunova.** Ecological aspects of the biochemical studies in the Bering and Okhotsk Seas
3. **J. Roderick Forbes.** Water properties associated with some harmful algal species in British Columbia coastal waters
4. **Alicia Matter.** Paralytic shellfish poisoning: Toxin accumulation in the marine food web, with emphasis on predatory snails and human exposure
5. **M.M. Krahn, T.K. Collier, W.L. Reichert, J.E. Stein, S.L. Chan & U. Varanasi.** Analytical techniques for assessing environmental contamination

Fishery Science Committee:

1. **Ichiro Aoki.** Distribution and abundance of the spawning Japanese sardine
2. **James Ferguson.** A role for robotics in fishery research
3. **E. P. Karedin.** Mesopelagic fish of the north Pacific
4. **Hiroya Miyake, Hideo Yoshida, and Yoshiyuki Ueda.** Abundance of 0-group walleye pollock and other demersal fishes off the Pacific coast of eastern Hokkaido, Japan
5. **Katherine W. Myers, and Robert V. Walker.** Ocean growth and abundance of Pacific salmon
6. **A. M. Orlov.** Composition and abundance of fishes in the bathypelagial of the Okhotsk and western Bering Seas
7. **Yury I. Zuenko.** Interannual variability in subsurface and bottom water strata in the northern Japan Sea and fish populations
8. **Kazuya Nagasawa, Nancy D. Davis & Kazuaki Tadokoro.** Catch of chum salmon (*Oncorhynchus keta*) and coho salmon (*Oncorhynchus kisutch*) south of the subarctic boundary

Long-term monitoring from platforms of opportunity session:

1. **E.D. Cokelet, J.M. Napp, H.B. Milburn, C. Moore & J.D. Schumacher.** The Peggy Bering Sea Buoy - real-time atmospheric and biophysical oceanic measurements in the SE Bering Sea Basin
2. **Patrick J. Gould, Peggy Ostrom, Keith Hobson & John Piatt.** Stable isotopes in marine research: $\delta^{15}\text{N}$ and $\delta^{13}\text{C}$ in marine birds of the North Pacific

LATE SUBMISSIONS TO THE FISHERY SCIENCE COMMITTEE:

1. **R.J. Beamish and D.R. Bouillon.** Pacific salmon production trends in relation to climate
2. **B.L. Leaman and M. Stocker.** Groundfish stock assessments for the west coast of Canada in 1992 and recommended yield options for 1993
3. **G. McFarlane and R.J. Beamish.** Climatic influence linking copepod production with strong year-classes in sablefish
4. **L.J. Richards and J.T. Schnute.** An experimental and statistical approach to the question: Is CUPE an index of abundance?
5. **L.J. Richards, J.T. Schnute, A.R. Kronlund and R.J. Beamish.** Statistical models for the analysis of ageing error
6. **J.W. Shweigert, V. Haist and C. Fort.** Stock assessments for British Columbia herring in 1992 and forecasts of the potential catch in 1993
7. **G. Thomas (ed.).** Shellfish stock assessments for the West Coast of Canada in 1991 as reviewed by the Pacific Stock Assessment Review Committee (PSARC)