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NORTH PACIFIC ANADROMOUS FISH COMMISSION

Science Plan 2006-2010

**Committee on Scientific Research and Statistics,
Chairman Loh-Lee Low**

Prepared by the Science Sub-Committee:

Chairman Vladimir Karpenko (Russia)

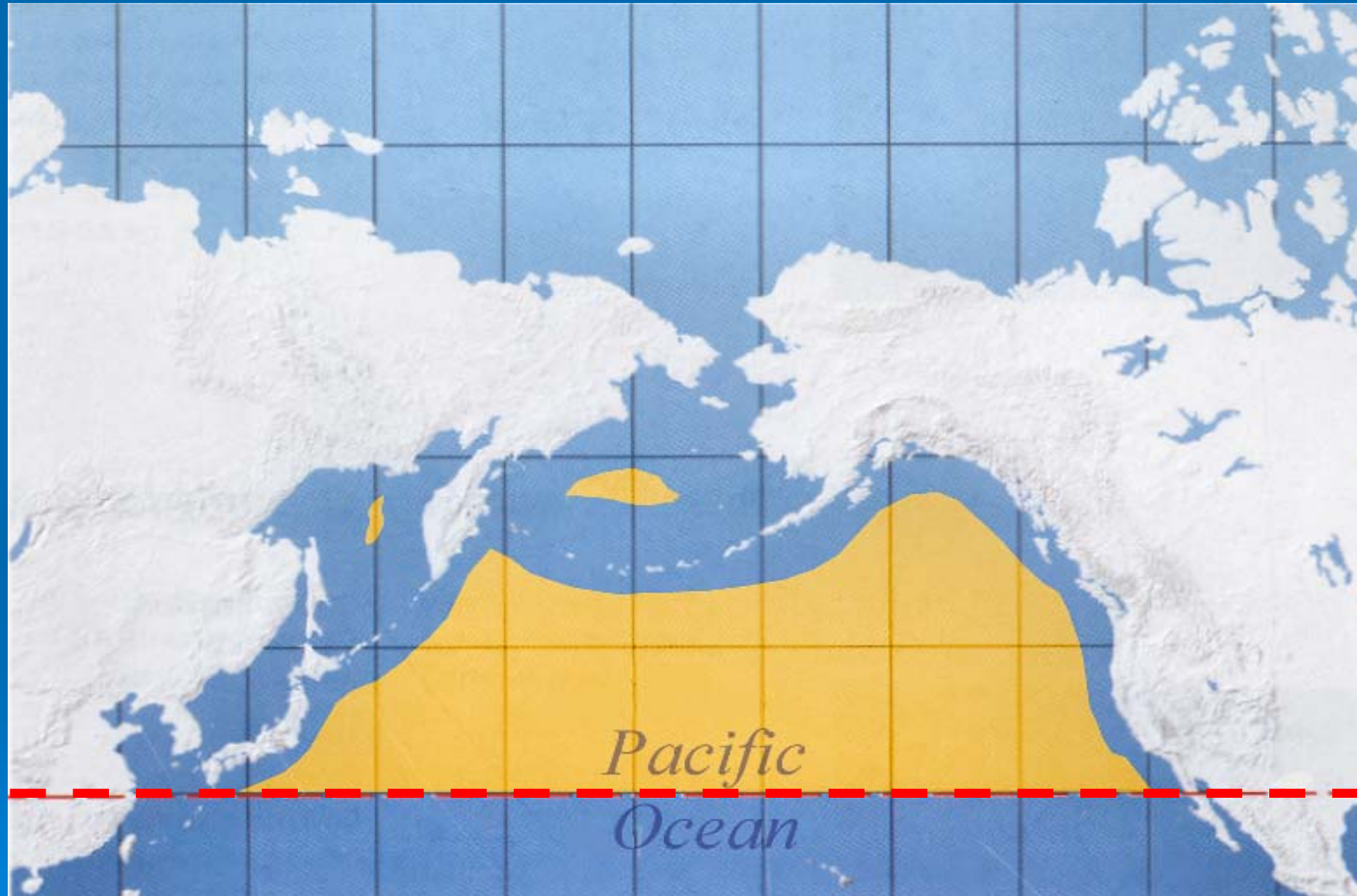
Richard Beamish (Canada)

Shigehiko Urawa (Japan)

Sukyung Kang (Korea)

Katherine Myers (USA)

Map showing the area (shaded in yellow) where directed fishing for salmon is prohibited by the Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean, i.e., north of 33° North latitude (above the dashed line), beyond 200-mile zones



33°

Review of previous NPAFC Science Plans

- *The 1993-2000 Science Plan*
- *Annual cooperative Science Plans*

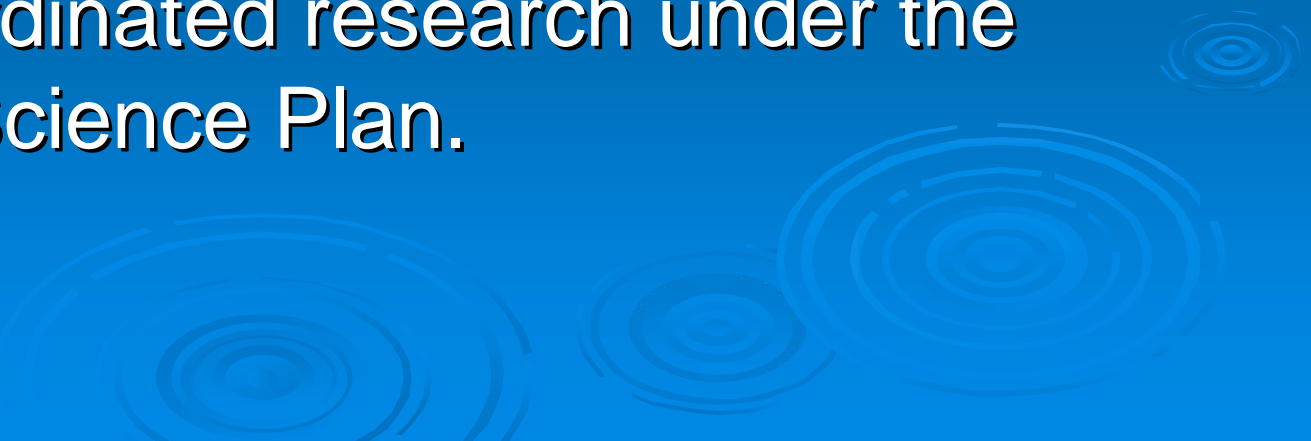
The 2001-2005 Science Plan

Major scientific achievements and advances in cooperative research under the 2001-2005 Science Plan included:

- 1) the first integrated pelagic ecosystem monitoring of anadromous stocks over large areas of the Bering Sea and adjacent North Pacific waters in late summer and fall;*
- 2) the first applications of DNA stock identification techniques to determine stock composition of salmon migrating in the Convention area;*
- 3) the first electronic data storage tag and hydroacoustic data showing vertical migratory behavior of anadromous stocks in the open ocean;*
- 4) the first international calibration of pelagic trawls to standardize abundance and biomass estimates of anadromous stocks in the Convention area;*
- 5) the first international coordination of otolith mark patterns among member countries;*
- 6) a greater scientific understanding of the marine ecosystem processes leading to variation in abundance and biomass of anadromous stocks.*

The 2006-2010 Science Plan

NPAFC and PICES organized and held a joint symposium, "The status of Pacific salmon and their role in North Pacific marine ecosystems," in fall 2005. The results and recommendations from this symposium will be used to develop specific proposals for NPAFC-coordinated research under the 2006-2010 Science Plan.




A conceptual model of the Gulf of Alaska marine ecosystem and causative factors that may influence salmon production and biodiversity




Source: Gulf of Alaska Ecosystem Monitoring and Research (GEM)
http://www.evostc.state.ak.us/gem/concept_large.htm

Problems:

- *1. What are the current status and trends in marine production of anadromous stocks, and the effects of structure and diversity on population performance and viability in marine ecosystems of the North Pacific?*
 - *2. How will climate and climate change affect anadromous stocks, ecologically related species, and their North Pacific marine ecosystems?*
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Research Theme 1: Status and Trends in Marine Production

- *Component 1: Status and Trends of Juvenile Anadromous Stocks*
 - *Component 2: Status and Trends of Immature Anadromous Stocks*
 - *Component 3: Status and Trends of Maturing Anadromous Stocks*
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Research Theme 2: Effects of Climate and Climate Change

- *Component 1: The Bering Sea Ecosystem (BASIS)*
- *Component 2: The Western Subarctic Gyre and Gulf of Alaska Ecosystems*

The 2006-2010 Science Plan will include:

- Collection and synthesis of existing data and metadata:
 - to generate and test specific hypotheses,
 - integrated ecological monitoring research (research vessels, remote sensing), conceptual and quantitative modeling,
 - process-oriented field and laboratory studies, and retrospective analyses.
- Scientific results from cooperative studies using these approaches will progressively fill in major gaps in scientific knowledge with respect to the two research themes, components, and issues.
- Workshops and symposia will be used, as in the past, for synthesis of results and to identify new questions and research priorities.
- Research results the 2006-2010 Science Plan will be published.