

PICES and ICES on the River Elbe

by Stewart (Skip) McKinnell and Jürgen Alheit



Hamburg University might be considered by some as an unusual venue for a workshop focusing on North Pacific marine ecosystem variability, but its location highlights a continuing interest in conducting comparative studies of Northern Hemisphere oceans and climate. A search for the ultimate cause(s) of variable fish abundance demands an attention to the full range of spatial scales of the potential forces. The climate scale is large so ICES and PICES co-sponsored a workshop on “*Reaction of Northern Hemisphere ecosystems to climate events: A comparison*”. It was convened during a cool but sunny week (May 2–6, 2011) by Jürgen Alheit and Christian Möllmann from ICES, and Sukgeun Jung and Yoshiro Watanabe from PICES. The focus of this workshop was an examination of time series from the northwestern North Pacific, within the context of an over-arching objective to conduct a meta-analysis of ecosystem trends and their potential drivers over the Northern Hemisphere. It followed an earlier workshop which had focused on northeastern Atlantic ecosystems.



Saskia Otto (Hamburg U. Ph.D. student) with Motomitsu Takahashi (Japan) and Sukgeun Jung (Korea) in analysis.

Yongjun Tian (Japan), Yury Zuenko (Russia), Sukgeun Jung (Korea), Motomitsu Takahashi (Japan), and Skip McKinnell (PICES) gave presentations about regional data sets from the Pacific during the first day and a half. In keeping with the workshop format, the serious work began by assembling multivariate data sets of long-term time series of physical, chemical and biological variables.

The normal challenges confronted the group as they strove to achieve a balance among the physical, chemical and biological variables. As the data originated in Japan, Republic of Korea and the Russian Federation, each with time series of variable durations, with missing years, different sampling methodologies and ecological emphasis, much of the first few days was spent trying to overcome these difficulties. Lack of balance will, for example, cause ecosystem shifts to be identified some time after they occurred when fishery statistics of long-lived animals have a significant influence on the results.

The analytical approach was to compare and contrast the results of several multivariate statistical methods with the intent to yield further insight into how ecosystems change state. For example, the rates and magnitudes of change may not be the same in the different systems, reflecting region-specific differences in the forcing factors and ecosystem responses to them. There was a general consensus among the methods and among various subdivisions of the data that a change occurred in the climate and marine ecosystems in parts of the northwestern North Pacific between the winter of 1988/89 and that of 1992/93. The inability to specify one particular year was because different methods and data combinations produced slightly different results.



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