**Theme for PICES XIV (Vladivostok, Russia)**
**Mechanisms of climate and human impacts on ecosystems in marginal seas and shelf regions**

There are many examples of statistical correlations that demonstrate relations between climate or human impacts and ecosystems. While retrospection may be informative in revealing patterns it rarely leads to mechanistic understanding required for eventual prediction. This session instead will focus on physical and biological mechanisms in the marginal seas and shelf regions. Many coastal species have life histories/cycles that rely on specific geographic features and they may be particularly vulnerable to the effects of human activities and climate variability. In order to predict the impacts of climate and human activities we need to understand the mechanisms responsible for shifts in ecosystem structure and function. We will consider "wind to whales" in this session. This theme will provide opportunities to address questions such as: How widespread is bottom-up control of fluxes? At what spatial and temporal scales: 1) are trophodynamic demands and food supply in balance?, 2) are signals amplified in food webs? and 3) are physical processes most important in impacting marine populations? The human impacts that could be considered include, fishing and fisheries enhancement, changes in biodiversity, petroleum development, eutrophication, mariculture, non-point source pollution, and others.