

Title: Environmental links to pelagic fish life-cycle, distribution, and abundance: determining governing factors

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Abstract

The role of environmental variables, and the extent to which they influence the distribution and abundance of various fish populations has been the focus of numerous studies elsewhere. The distribution and abundance of fish populations is affected by multitude of environmental variables directly and indirectly which is manifested immediately, in the form of change in distribution as a result of rapid reaction to change in the environment, or in the long-term, in the form of consistent long-term change in reproductive output through the direct impact of the environment on processes affecting recruitment, and on adults physiological optima. This work presents summary of the results from the BCC project that attempts to look at the influence of environmental variables on the distribution and abundance of pelagic fish populations. There are three different ways where influence of the environment on distribution of fish populations has been studied: experimental studies in laboratories; coupled biogeochemical-hydrodynamic models; the third and most commonly used approach is the correlative statistical modelling approach. The third approach, the use of correlative statistical models, is adopted in this project considering the readily available environmental data (mostly from satellite remote sensing) that matches the corresponding biological data (density data along cruise track from pelagic hydro-acoustic surveys and catch rate data from stations sampled during bottom trawl surveys). Preliminary results from this work is presented.