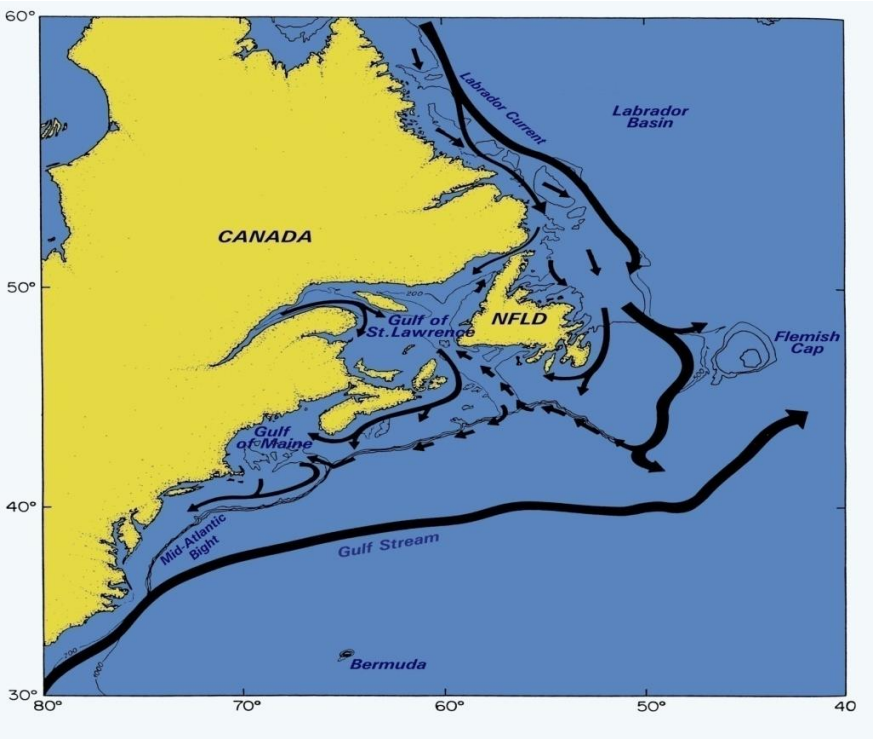
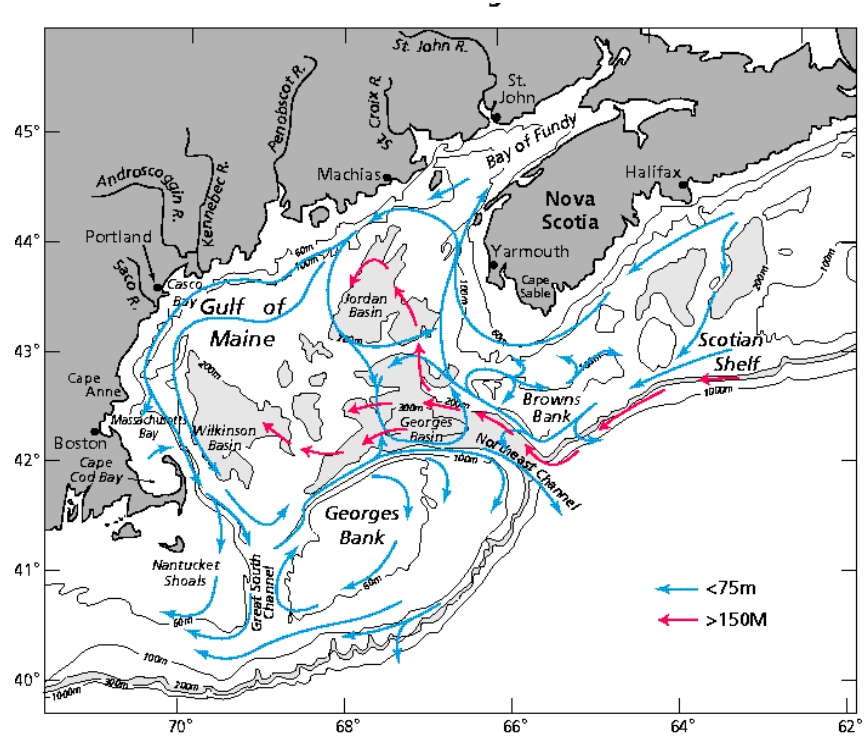
U.S. Implementation of BASIN Shelf exchanges of mesozooplankton and the role of the western North Atlantic Gyre

J. Runge

Rutgers 2-4 June 2010

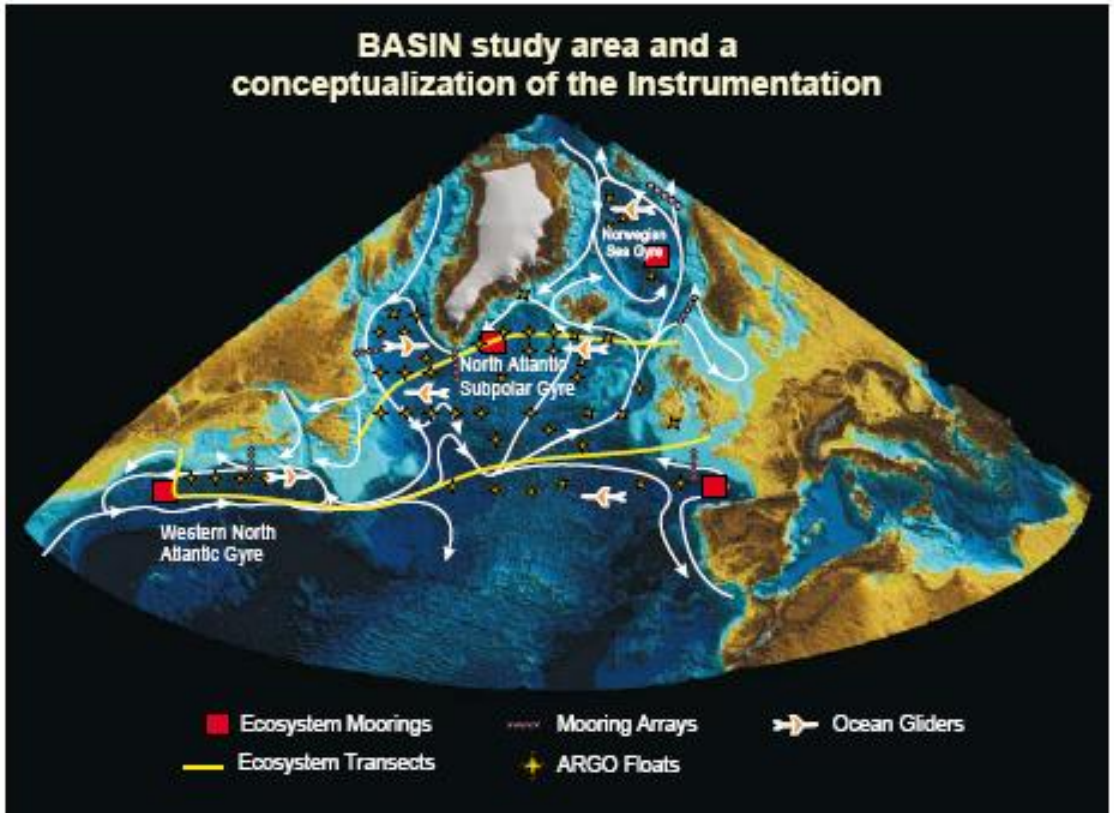
The Gulf of Maine/Scotian Shelf





- **Enhanced basin-scale coupled climate/ocean/ecosystem modeling systems linking basin- and shelf-scale processes and identification of the climate forcing processes that have the greatest influence on ocean and ecosystem variability.**

- **Estimates of local (shelf) versus remote (deep ocean) natural and anthropogenic impacts on ecosystem dynamics and exploited resources.**



Western North Atlantic Gyre Study?

-Seasonal primary and microzoop. prod. cycles
- Biogeochemical processes
- Calanus, micronekton population dynamics
- Cross shelf exchanges
    --to Scotian Shelf and Gulf of Maine
    -- to coastal shelf fisheries from GoM basins

Life histories of *Calanus* species in the North Atlantic and North Pacific Ocean and responses to climate forcing

Jeffrey Runge, Univ. Maine

David Kimmel, Univ.East Carolina

Andrew Leising, SW Fish. Sci. Center, NOAA

Frédéric Maps, Univ. Maine

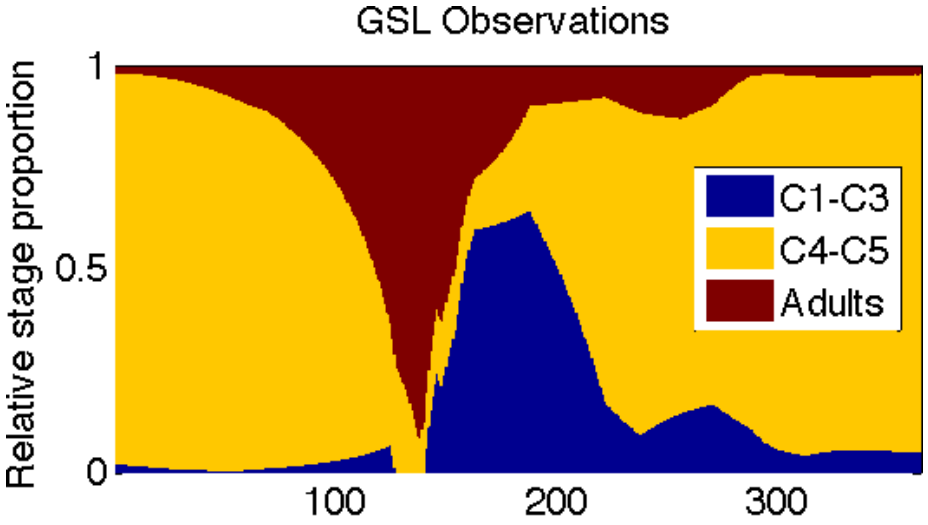
Andrew Pershing, Univ.Maine

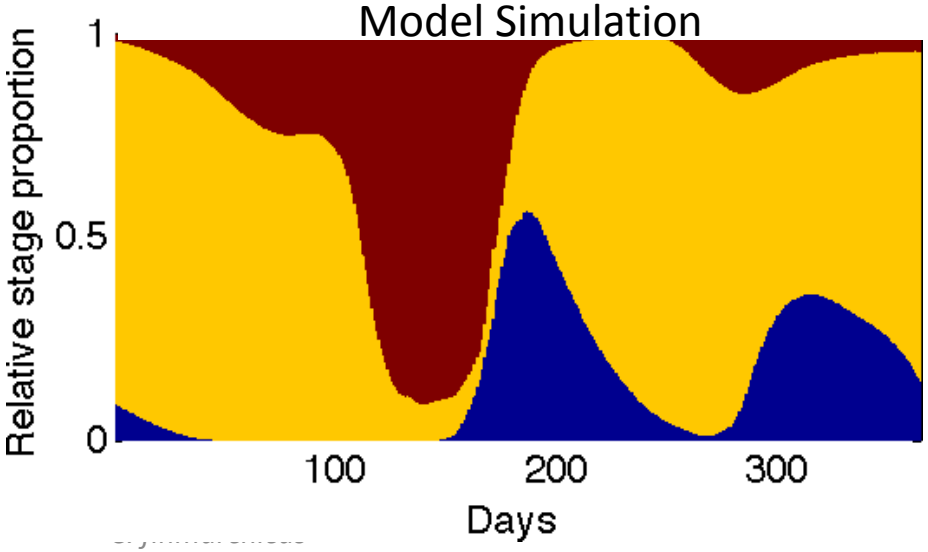
James Pierson, Univ.Maryland Center for Env. Sci.

U.S. GLOBEC Pan Regional Synthesis

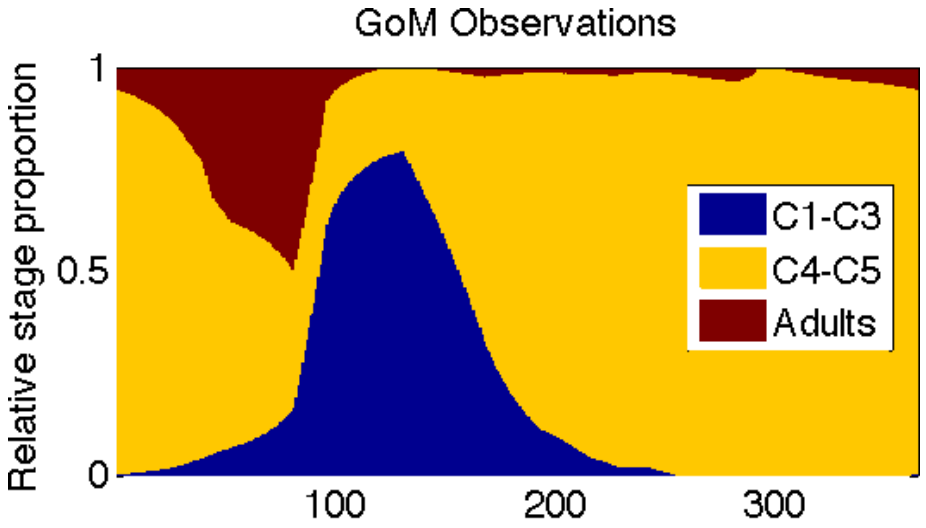
Observations vs IBM Model

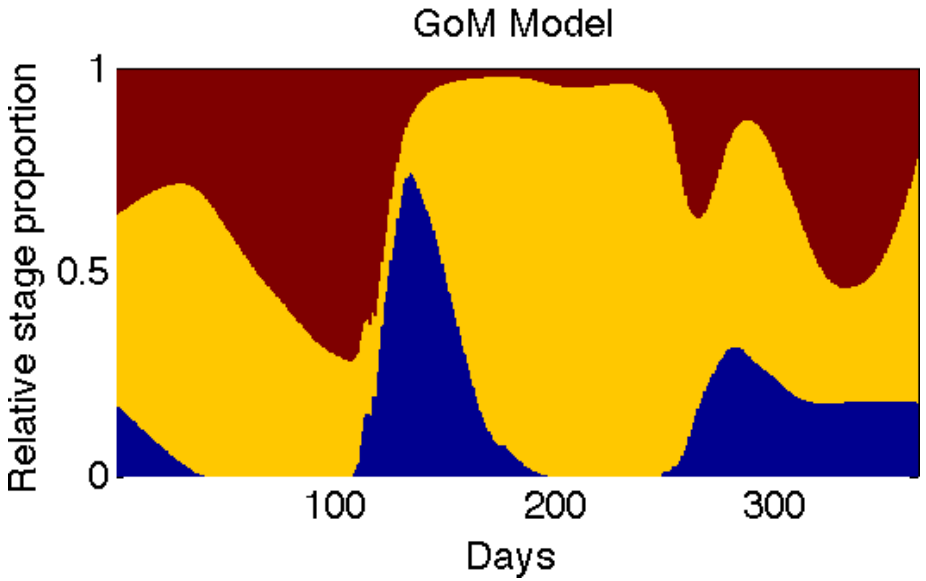
Gulf of St Lawrence



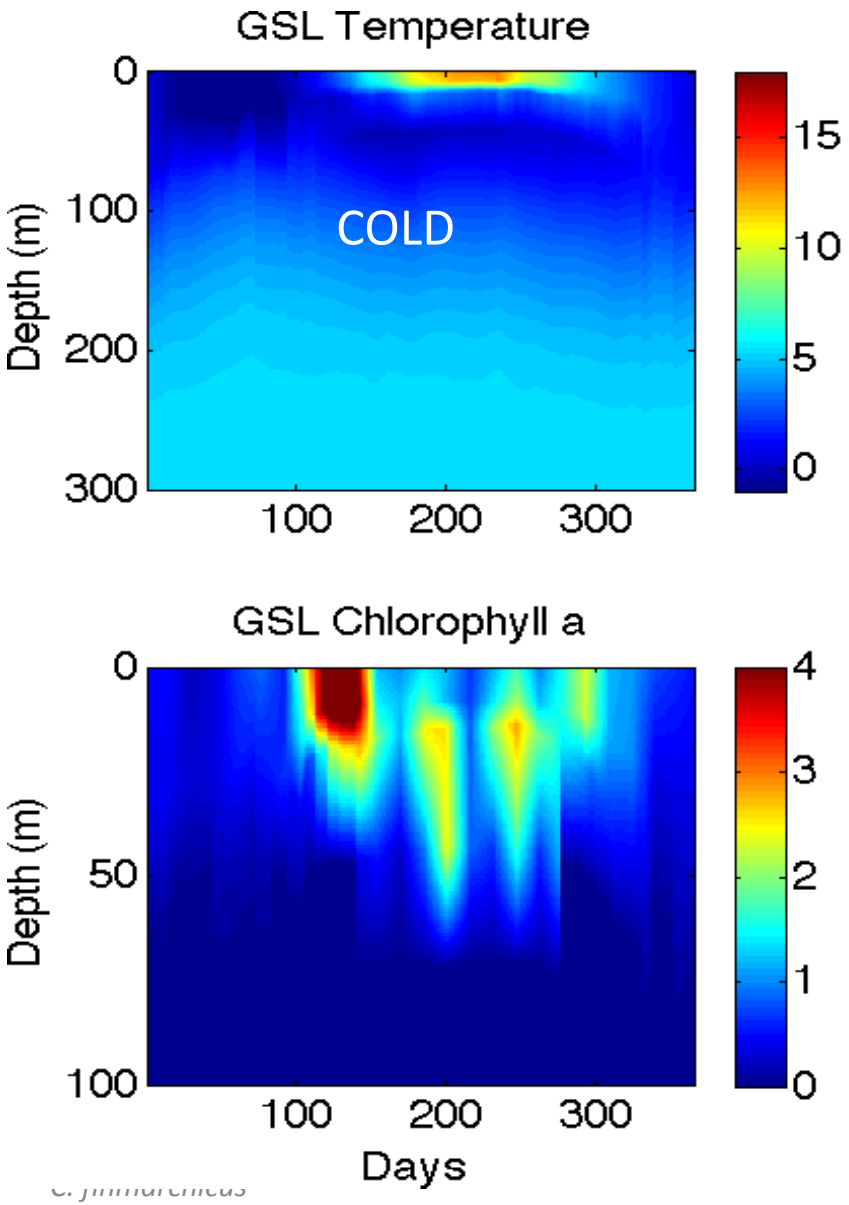


Gulf of Maine

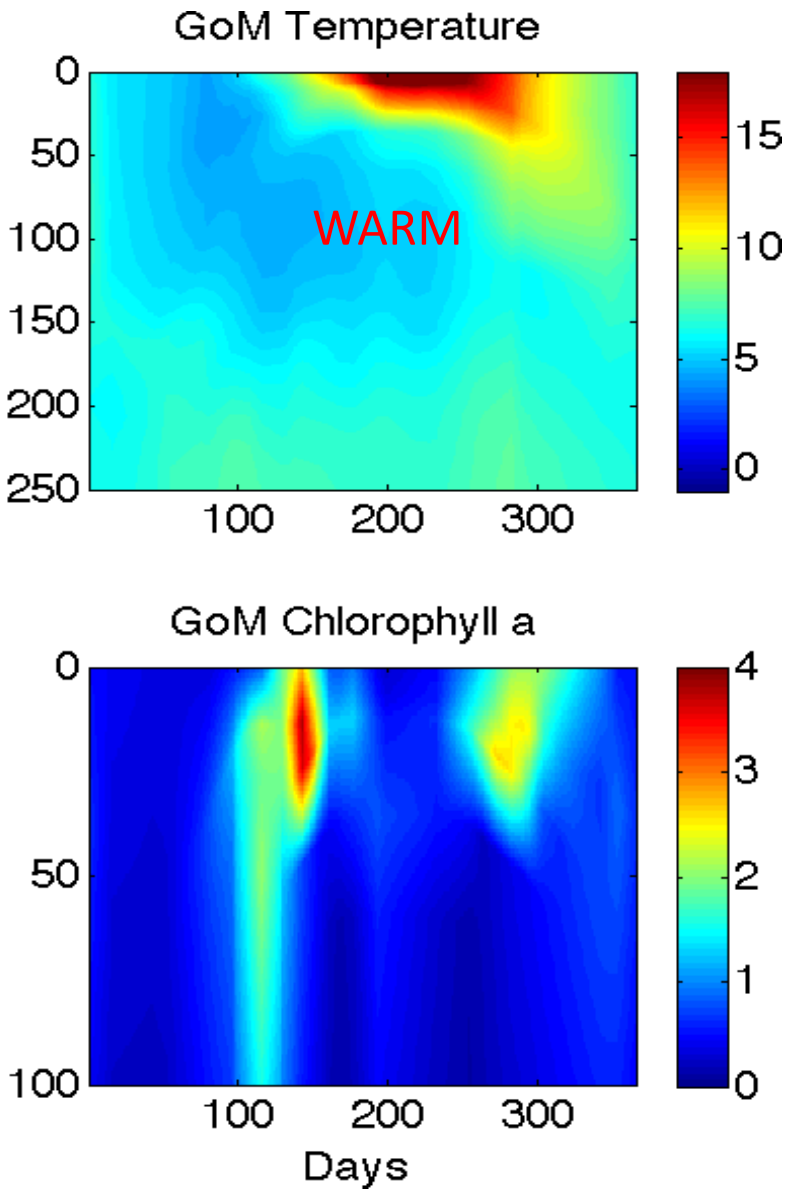




Gulf of St Lawrence

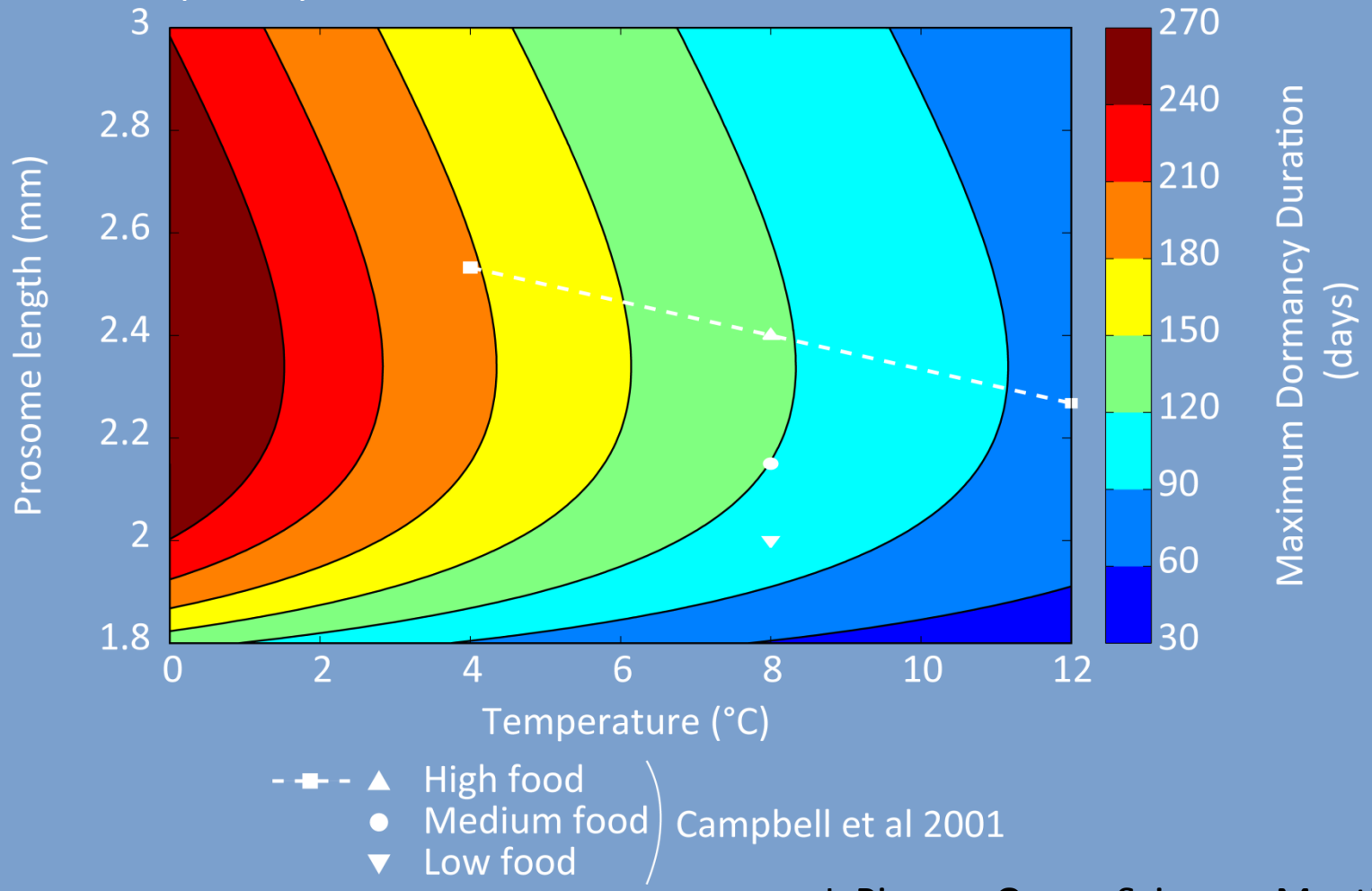


Gulf of Maine



Maximum potential dormancy duration is related to size and temperature

Empirically derived model from Saumweber et al 2006



J. Pierson Ocean Sciences Meeting 2010