Calanus finmarchicus connectivity in N. Atlantic: model results (Calanus North Atlantic project)

Website: https://www.bco-dmo.org/dataset/474418
Data Type: model results
Version: 14 January 2014
Version Date: 2014-01-14

Project
» U.S. GLOBEC Pan-Regional Synthesis: Climate Forcing of Calanus finmarchicus Populations of the North Atlantic (Calanus North Atlantic)

Program
» U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)

Contributors	Affiliation	Role
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Dataset Description

Connectivity among ten key *Calanus finmarchicus* population sites in the North Atlantic at t=10 years is modeled.

The model is explained in the 2012 annual report and related to the image shown in the data.

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Data Files

File
CfinNAtl.csv (Comma Separated Values (.csv), 364 bytes) MD5:0d2e61b4ab9fa7d554f7f25023d2dca5 Primary data file for dataset ID 474418

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Parameters

Parameter	Description	Units
brief_desc	The location of the self documenting netcdf files of model output.	
image	An image that illustrates the model results.	
lat	The latitude of the McGillicuddy lab. This has been included to display the figure on the map.	decimal degrees
lon	The longitude of the McGillicuddy lab. Negative values are West of the Prime Meridian.	decimal degrees

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Deployments

lab_McGillicuddy

Website	https://www.bco-dmo.org/deployment/474422
Platform	WHOI
Start Date	2008-09-01
End Date	2013-08-31
Description	Model results for the project "U.S. GLOBEC Pan-Regional Synthesis: Climate Forcing of Calanus finmarchicus Populations of the North Atlantic" were analyzed at the Woods Hole Oceanographic Institution.

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Project Information

U.S. GLOBEC Pan-Regional Synthesis: Climate Forcing of Calanus finmarchicus Populations of the North Atlantic (Calanus North Atlantic)

Coverage: North Atlantic

Our overall goal for this Collaborative project is to understand the processes that regulate the large-scale distribution and abundance of *Calanus finmarchicus*, a keystone species of the North Atlantic ecosystem. We hypothesize that three main population centers in the North Atlantic are quasi-distinct and self-sustaining. This hypothesis will be tested with combined physical-biological modeling and genetic analysis of *C. finmarchicus* populations. Our modeling approach is to assimilate observations of *C. finmarchicus* from the Continuous Plankton Recorder (CPR) into the North Atlantic Regional Ocean Modeling System using the adjoint method.

The first phase of the project will be to investigate the mean seasonal cycle based on monthly mean CPR data together with the climatological mean circulation. The inverse model solution will be diagnosed to quantify the interconnectivity between the three population centers. Molecular population genetic analysis will yield independent estimates of the rates of exchange between the gyres, which will be compared with model predictions. This assessment of the climatological mean seasonal cycle will set the stage for a study of interannual variability, with particular emphasis on changes in the mean state of the system in association with the North Atlantic Oscillation.

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Program Information

U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)

Website: http://www.usglobec.org/

Coverage: Global

U.S. GLOBEC (GLOBal ocean ECosystems dynamics) is a research program organized by oceanographers and fisheries scientists to address the question of how global climate change may affect the abundance and production of animals in the sea.

The U.S. GLOBEC Program currently had major research efforts underway in the Georges Bank / Northwest Atlantic Region, and the Northeast Pacific (with components in the California Current and in the Coastal Gulf of Alaska). U.S. GLOBEC was a major contributor to International GLOBEC efforts in the Southern Ocean and Western Antarctic Peninsula (WAP).

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-0815047

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