Data Management Plan

1. Documentation of model results

The proposed project will generate several terabytes of model output. In accordance with the current NSF OCE Sample and Data Policy (nsf11060, URL: http://www.nsf.gov/pubs/2011/nsf11060/nsf11060.pdf), the investigators have contacted the Biological and Chemical Oceanography Data Management Office (BCO-DMO) to discuss recommended practices for documentation of model results. Supporting documentation will be contributed to the BCO-DMO along with the model results.

2. Model results generated

We have identified in Table 1 the key model variables that we intend to analyze as part of the proposed project. As the analysis progresses, we may find it necessary to add variables to this list.

3. Model results sharing

Soon after the completion of the model simulations, a subset (see Table 1) of the generated output will be contributed by N. Lovenduski to BCO-DMO. These data will be available online from the BCO-DMO data system (http://bco-dmo.org/data/), but will remain password protected until the graduate students working on the project have completed their analyses and submitted publications. Then, all model output will be made available to the public.

4. Resource references

The BCO-DMO was created in late 2006 to serve PIs funded by the NSF Geosciences Directorate (GEO) Division of Ocean Sciences (OCE) Biological and Chemical Oceanography Sections and (with augmented funding in 2010) Office of Polar Programs (OPP) Antarctic Sciences (ANT). BCO-DMO manages and serves oceanographic biogeochemical, ecological, and companion physical data and information developed in the course of scientific research and contributed by the originating investigators. The BCO-DMO data system facilitates data stewardship, dissemination, and storage on short and intermediate time-frames.

Table 1: Anticipated model output to be contributed to the Biological and Chemical Oceanography Data Management Office.

Variable	Simulation	Region	Depth
air-sea CO_2 flux	spin-up	global	surface
air-sea CO_2 flux	hindcast	<35°S	surface
air-sea CO_2 flux	21^{st} century	<35°S	surface
alkalinity	spin-up	<35°S	full depth
alkalinity	hindcast	<35°S	full depth
$CaCO_3$ export	hindcast	<35°S	euphotic zone
$CaCO_3$ export	21^{st} century	<35°S	euphotic zone
carbonate ion	hindcast	<35°S	full depth
carbonate ion	21^{st} century	<35°S	full depth
density	hindcast	<35°S	full depth
density	21^{st} century	<35°S	full depth
dissolved inorganic carbon	spin-up	global	surface
dissolved inorganic carbon	hindcast	<35°S	full depth
meridional overturning	hindcast	<35°S	full depth
meridional overturning	21^{st} century	<35°S	full depth
organic carbon export	hindcast	<35°S	euphotic zone
$pCO_2{}^{ocean}$	spin-up	global	surface
$pCO_2{}^{ocean}$	hindcast	<35°S	surface
$pCO_2{}^{ocean}$	21^{st} century	<35°S	surface
$pCO_2{}^{atmosphere}$	21^{st} century	<35°S	surface
salinity	hindcast	<35°S	surface
sea ice concentration	hindcast	<35°S	surface
sea ice concentration	21^{st} century	<35°S	surface
temperature	hindcast	<35°S	full depth
temperature	21^{st} century	<35°S	full depth
wind stress	hindcast	<35°S	surface
wind stress	21^{st} century	<35°S	surface