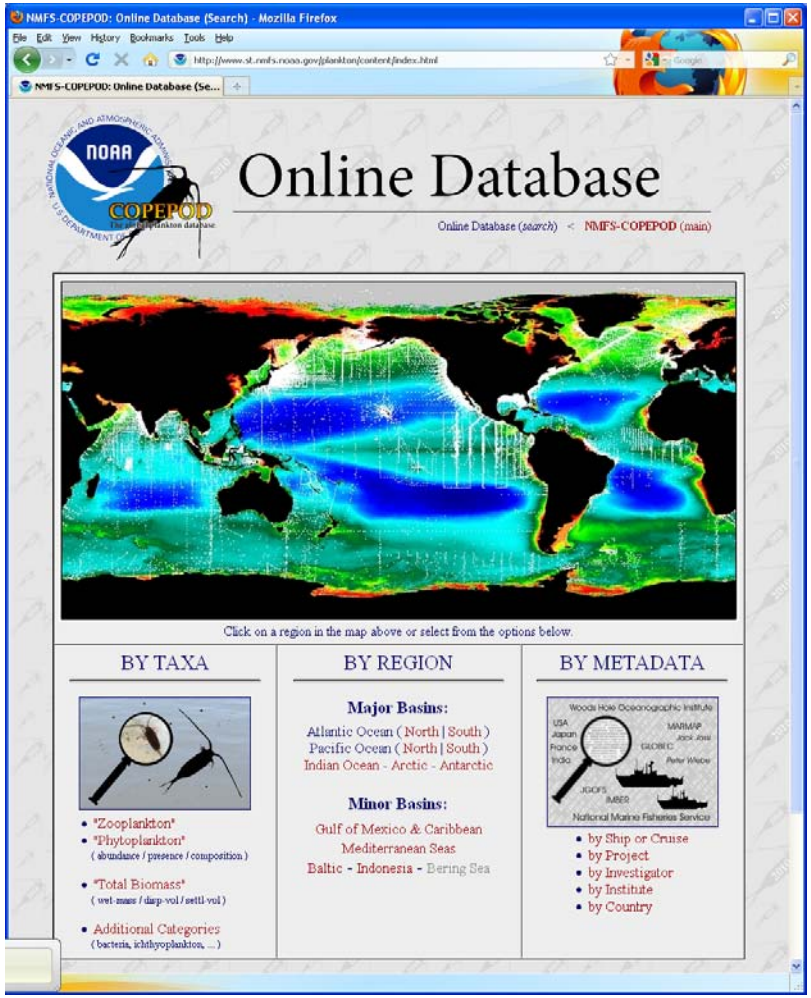
COPEPODITE

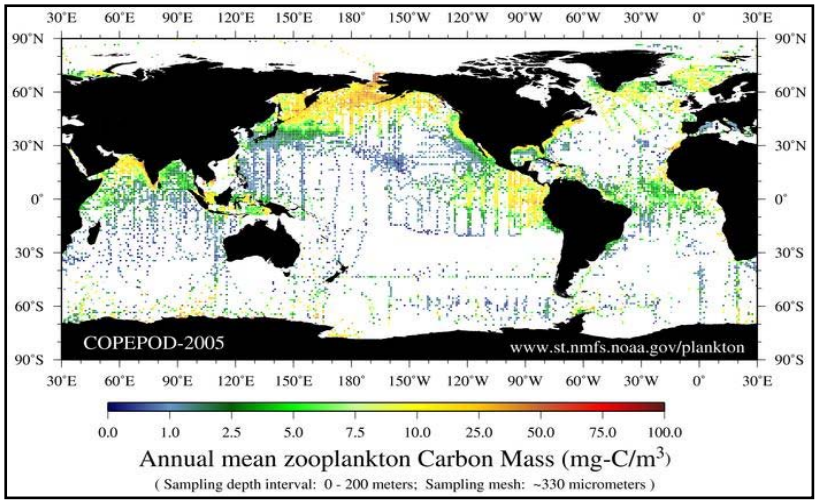
COPEPOD's **I**nteractive **T**ime-series **E**xplorer

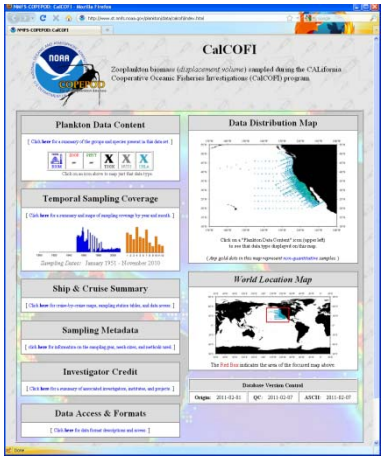
Todd D. O'Brien

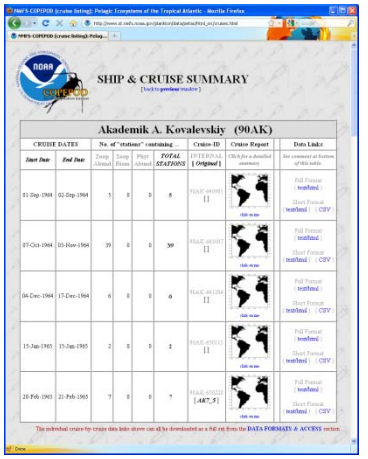
NOAA Fisheries (NMFS)

The **C**oastal & **O**ceanic **P**lankton **E**cology, **P**roduction, & **O**bservation **D**atabase

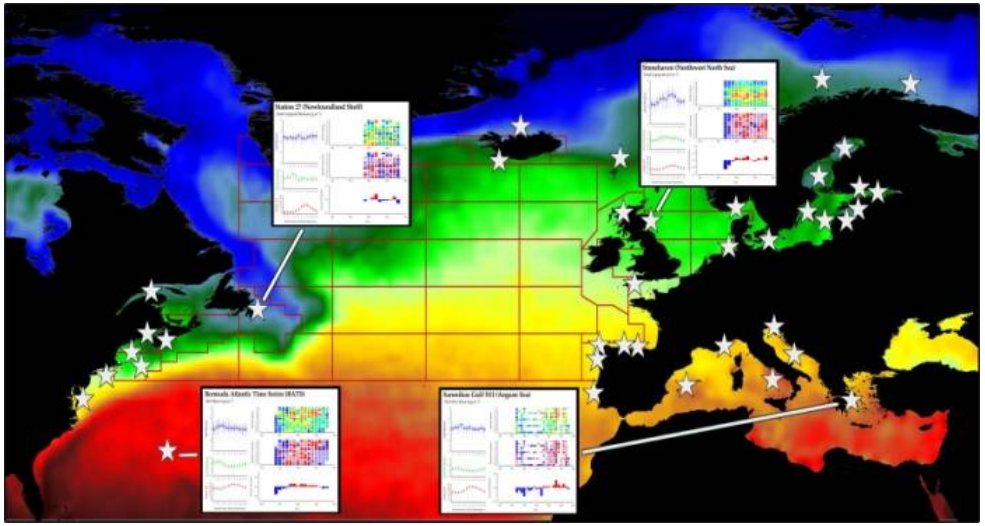


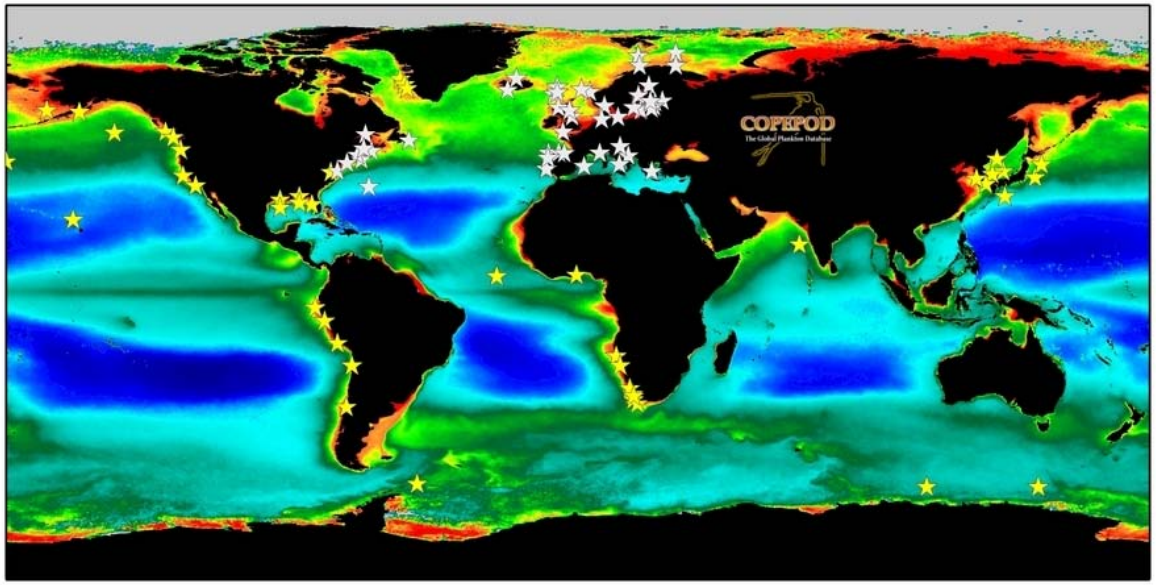




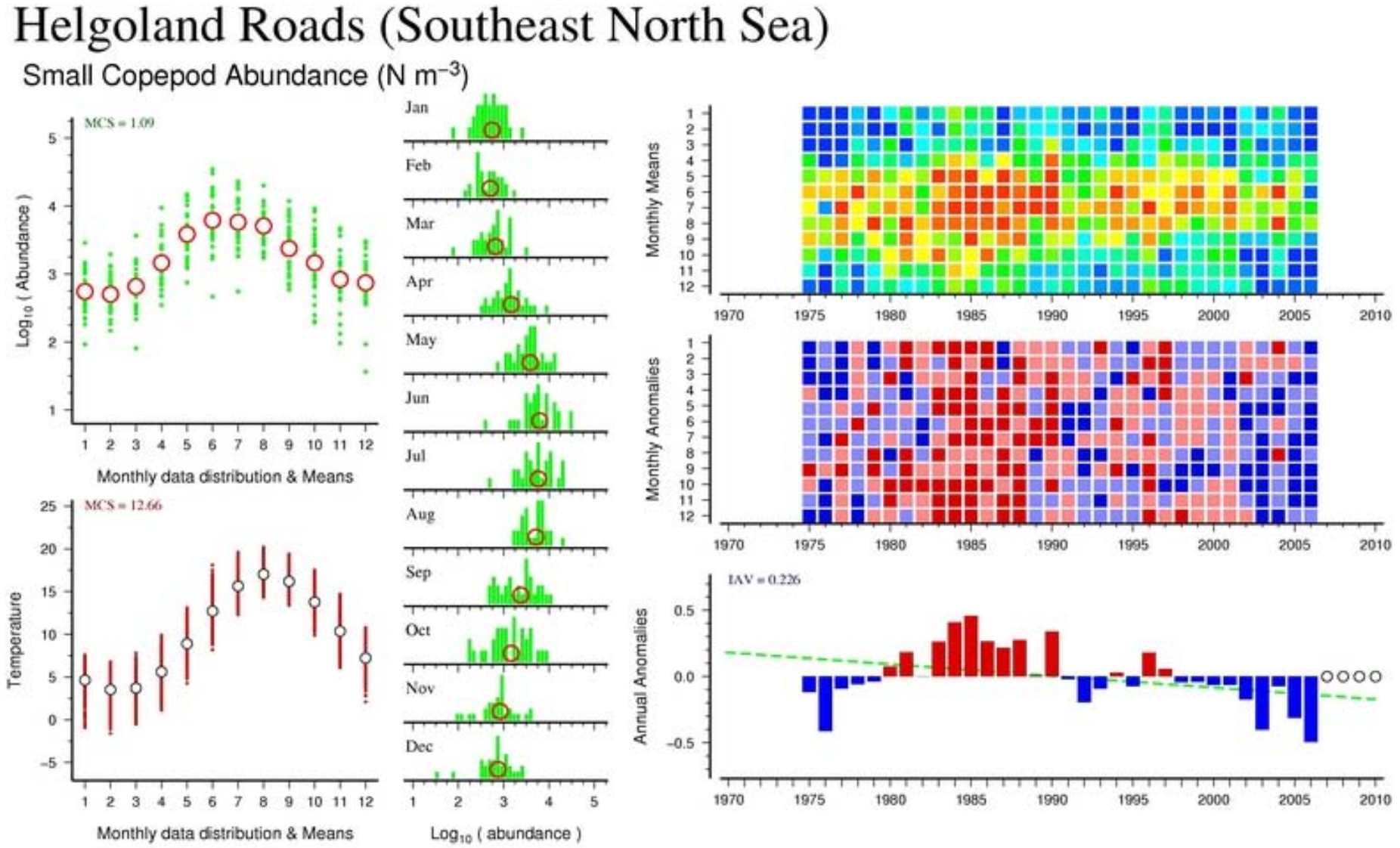


ICES-WGZE & SCOR-WG125
Time-series data support & visualization

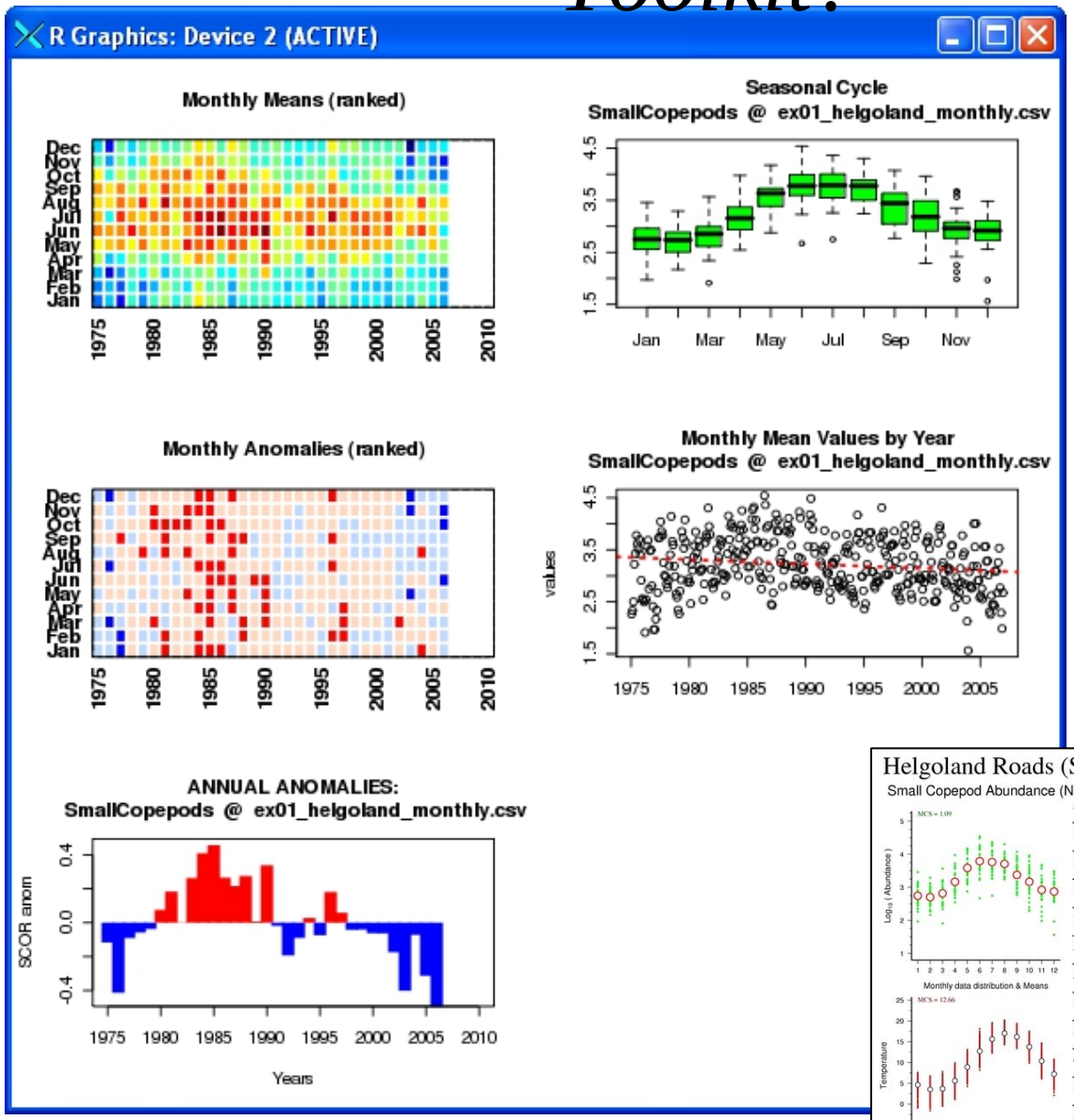


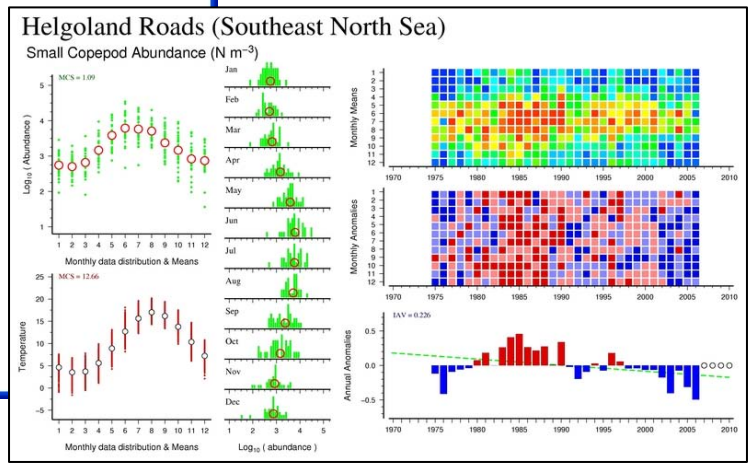


The WG125 Standard Plot



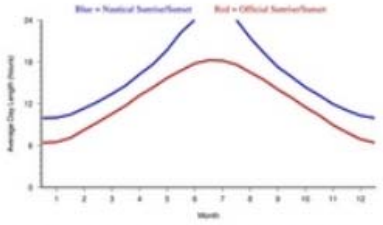
What happened to the WG125 "R Toolkit?



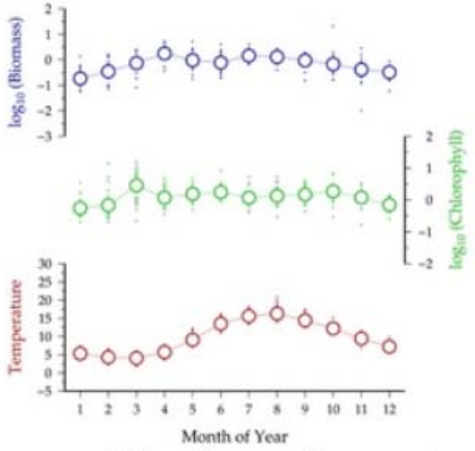


Location-derived Supporting Data

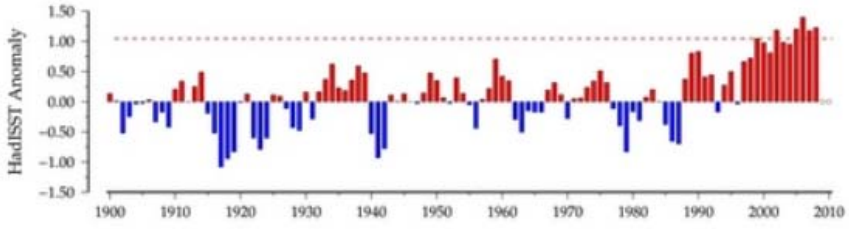
- Reynolds SST
- HadISST
- Model Products (e.g., Omstedt Salinity)
- Satellite-based fields (Chl-A, MLD, Wind)
- Local Day length
- Climate Indices

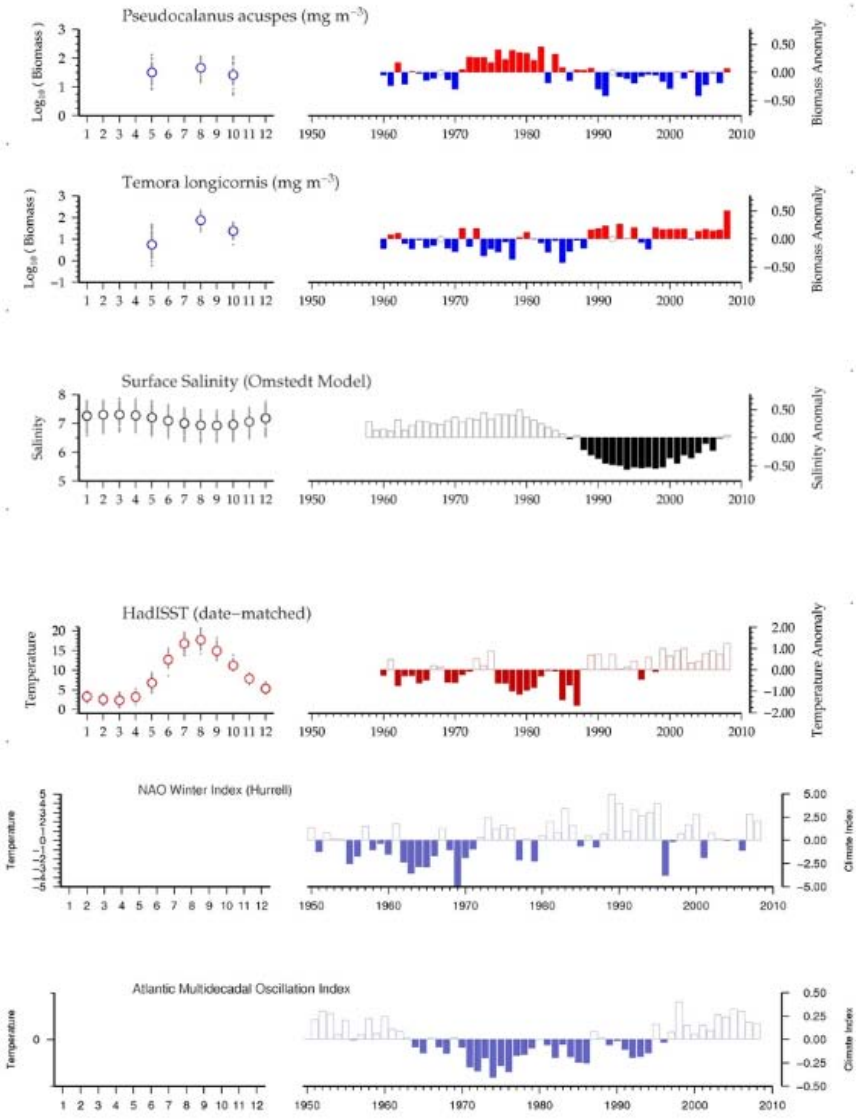


Seasonal day length at site.



Seasonal bio, chloro, and SST at site.





The challenge:

How to make these various "in-house" tools accessible to the outside user?

COPEPODITE

Interactive Time-series Explorer

Version "C1" will be available **April 1st** *at:*

http://copepodite.org

COPEPODITE

Interactive Time-series Explorer

- No software required (beyond a web browser + internet).
- User can upload their own time-series data using a simple yet very flexible spreadsheet “CSV” format.
- System will automatically generate supporting data for the user’s specified geographic point or region.
- User can select from a variety of visualizations and analyses (with new additions and options added in future).
- Results are reported in a stand-alone, interactive web interface. Zip download allows user to keep results locally.

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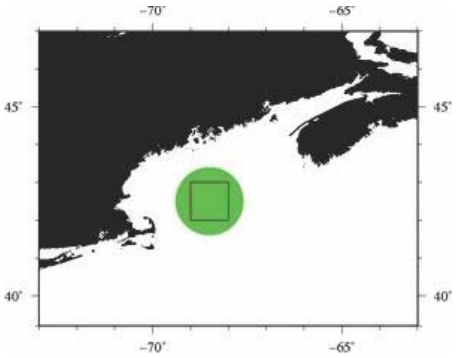
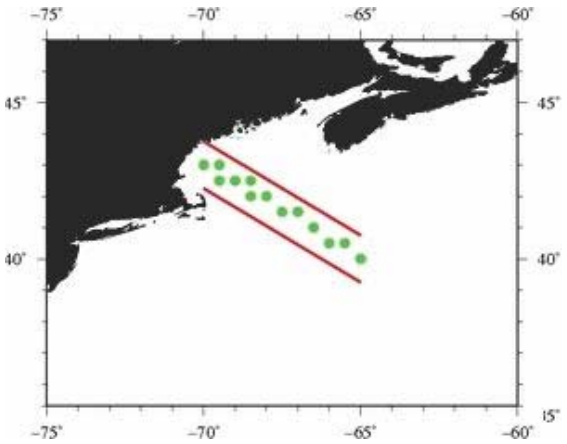
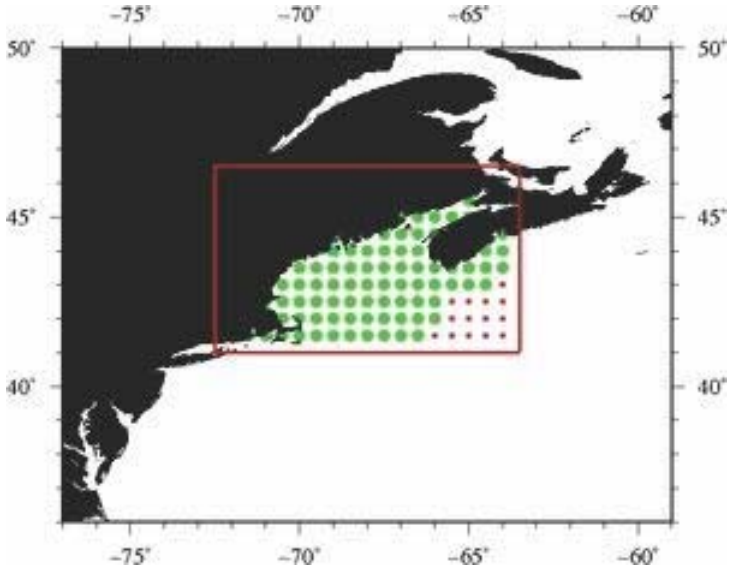
Interactive Time-series Explorer

- **Step 1:** Select your site's geographic point, transect, or area (with/without bathymetry set).







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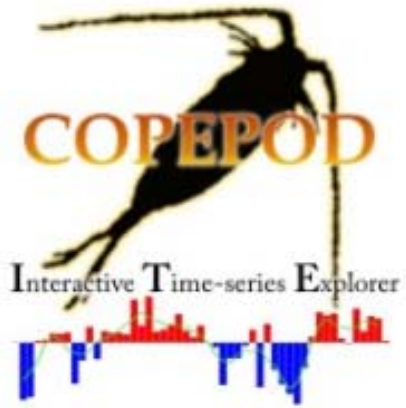
Interactive Time-series Explorer

- **Step 2:** Email address, Data File, Site Name.



Required Parameters:

- Email Address *: <enter email address>

  * *Your email address is needed so we can let you know when your data are ready.*

- Time-Series Data File*: Browse...

  * Make sure you read the INCOMING DATA FORMAT GUIDE before submitting this!

  (The "Format Guide" link above will open a new window, so you can safely do it now.)

- The name of your Site*: < My Monitoring Site >

  * *This will be printed at the top of your figure sets.*

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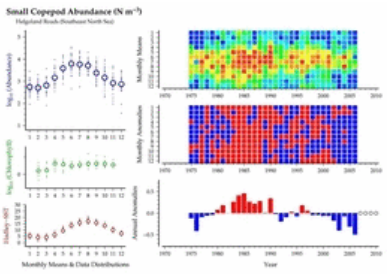
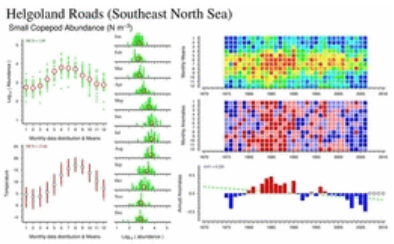
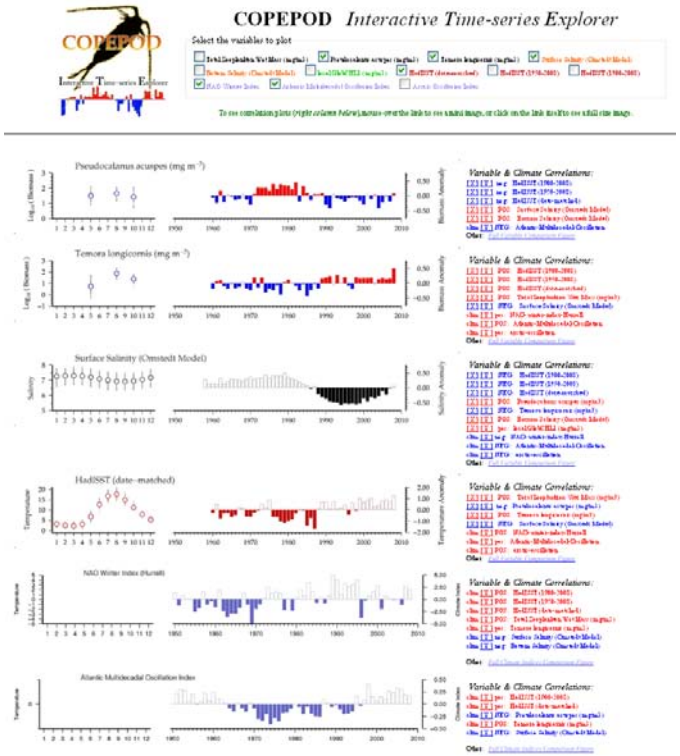
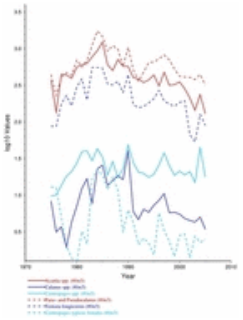
Interactive Time-series Explorer

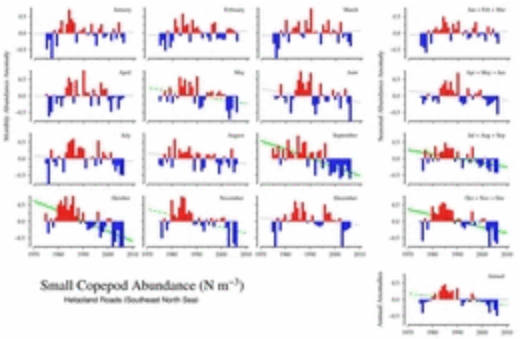
- **Step 3:** Select graphic/analysis modules.











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Interactive Time-series Explorer

- **Step 4:** Click “Submit”.

- You will receive an email with a 32-character UID link to a private web page showing your results.
- In addition to online viewing, there is a “zip” link which you can easily download and extract the results interface, images, and analysis output.
- The online result files are deleted after one week.

What about the "data upload format"?

- The format was designed and battle-tested on hundreds of WGZE and WG125 data sets.
- The top row is keyword column descriptions:
  - DATE-YMD, DATE-MDY, DATE-DMY, (Julian?)
  - BIOM, ABND, ABDT,
  - TEMP, PSAL, CHLA, LOTH, OTHR

ABND= *Total Copepods (#/m3)*

ABDT= *Calanus finmarchicus C5 (#/m2)*

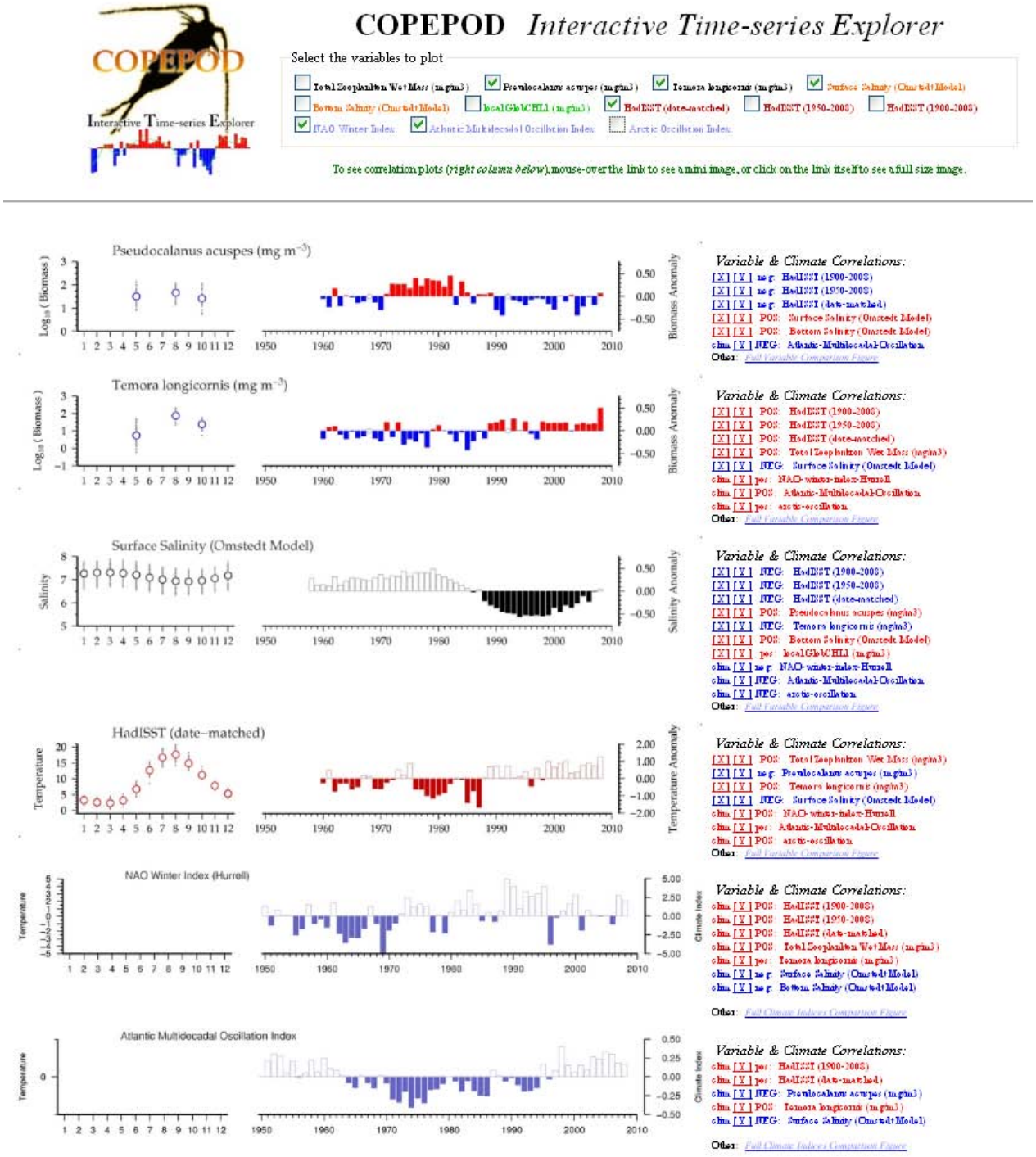
Flexible Date Handling & Automatic Synchronization

- The data in the “data columns” match to first “date column” (of dates) located to their left.

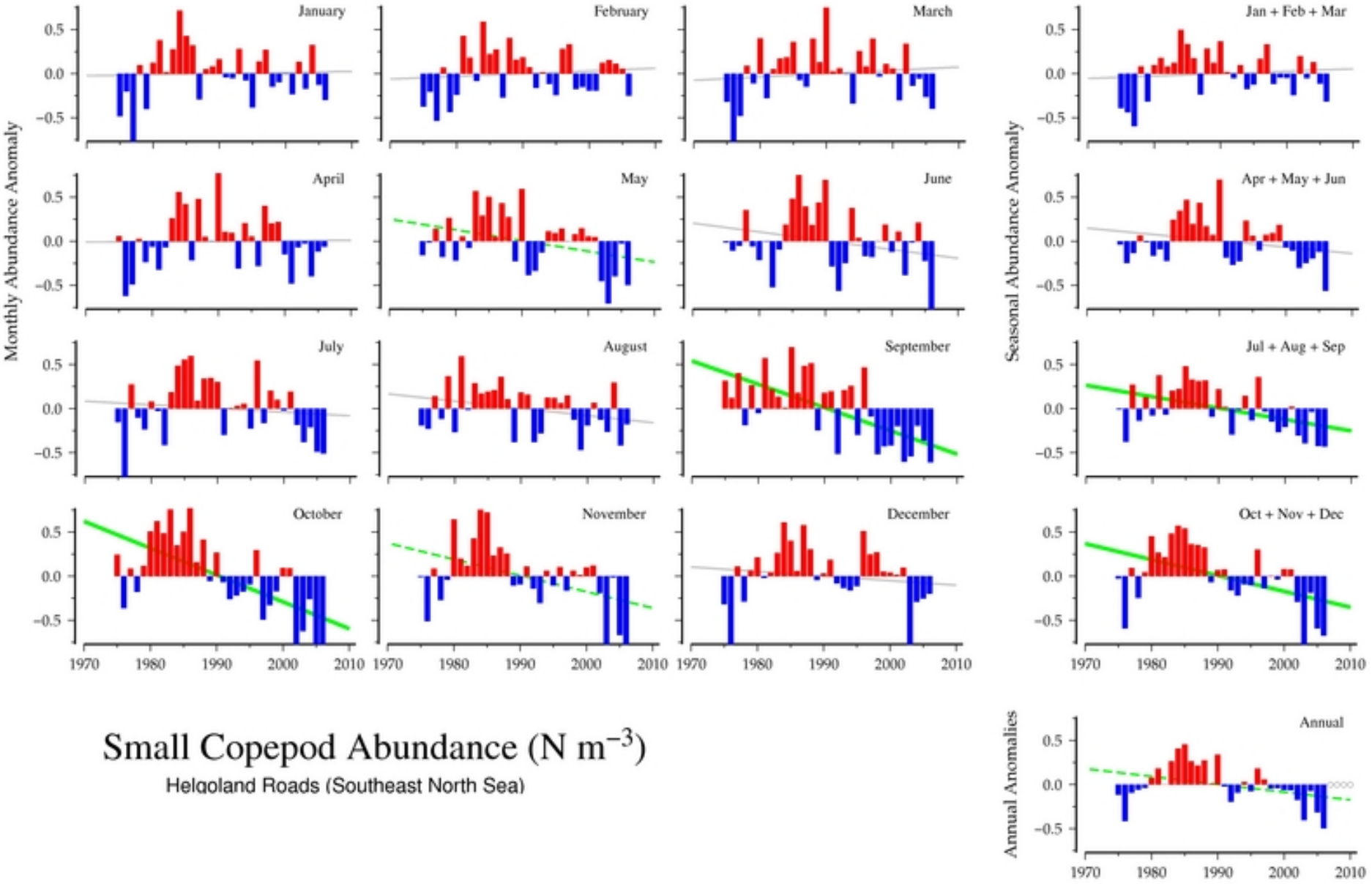
DATE 1	(date 1)	(date 1)	DATE 2	(date 2)	(date 2)	DATE 3	(date 3)
DATE-YMD	BIOM= Wet Mass	ABND= Total Zoo	DATE-DMY	TEMP= SST	PSAL= Salinity	DATE-MDY	CHLA= Chlorophyll-a
	123	43323		17.1	34.124		1.23
	34	23456		18.1	34.324		0.34
Monthly	122	642	Daily	18.4	34.324	Weekly	1.22
	158	34236		17.5	33.985		1.58
	1008	23435		14.5	34.102		1.00
	300	65456		12.1	34.354		3.00

- Version “C1” bins to months.
- Version “C2” will offer a weekly bin

Version "C1" Correlations



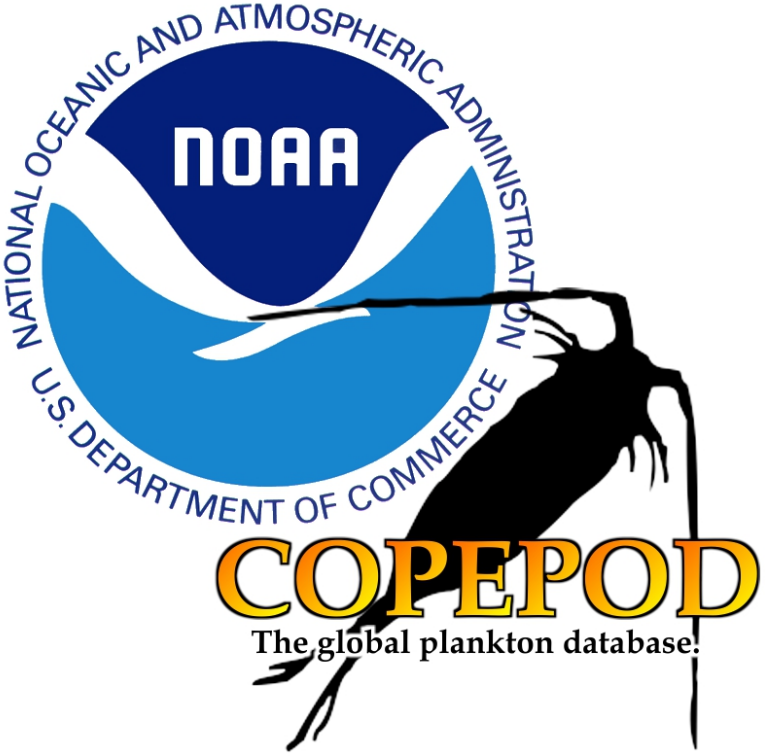
Data: Georgs Kornilovs
Solvita Strake



Small Copepod Abundance (N m^{-3})

Helgoland Roads (Southeast North Sea)

Data: Maarten Boersma, Jasmin Renz



COPEPOD Life History:

http://copepod.org

since March 2004

http://copepodite.org

April 1st, 2011

http://nauplius.org

Coming fall of 2011