



Calanus data from the Scotian Shelf
and eastern Gulf of Maine regions:
Who, what, where, and when

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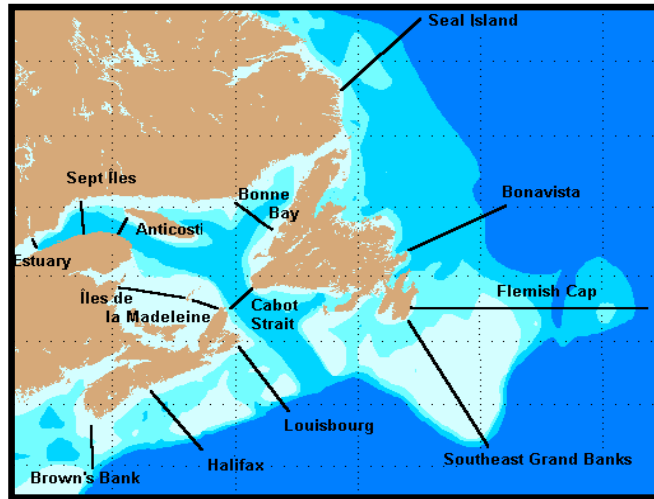
Who and What



- Distribution and abundance
- Egg production rates
- Lengths and weights
- Lipid content from images

Atlantic Zone Monitoring Program (AZMP) – since 1999

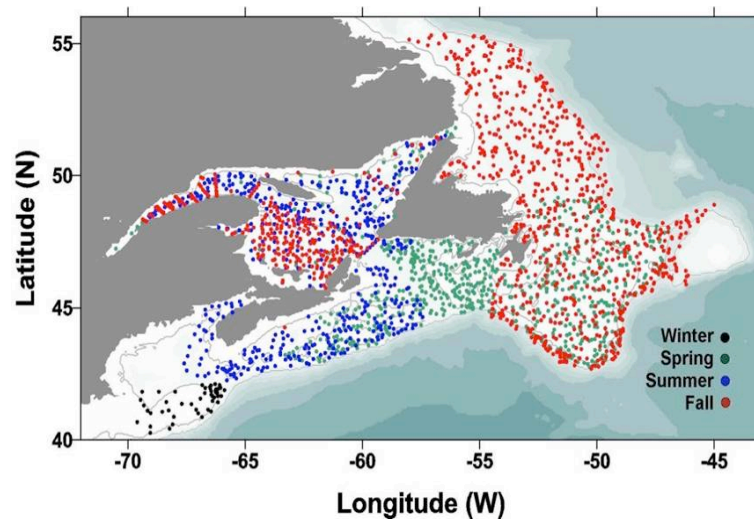
Transects – Spring and fall



Fixed stations – Every two weeks



Groundfish survey cruises
Selected stations



AZMP Protocol

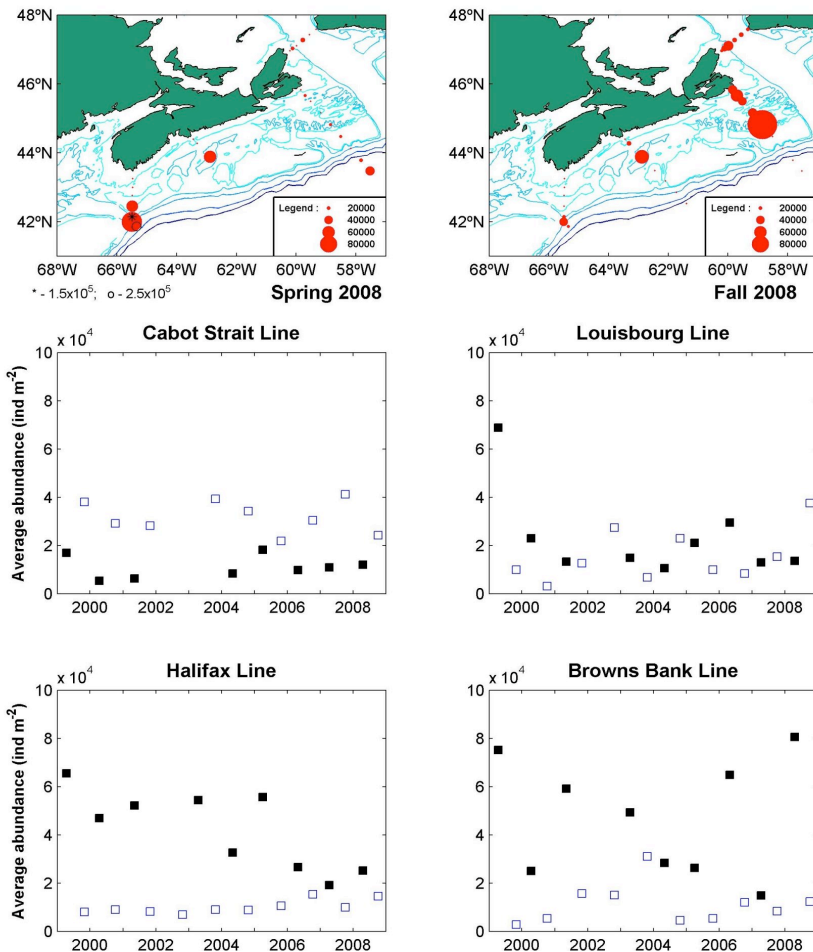
Vertical ring net
tows to bottom
or 1000 m;
202 μ m mesh

Other zooplankton data

- Continuous Plankton Recorder (1961-1976; 1991-present)
- Scotian Shelf Ichthyoplankton Survey (1978-1982)
- GLOBEC Canada and OPEN (data archiving in progress)

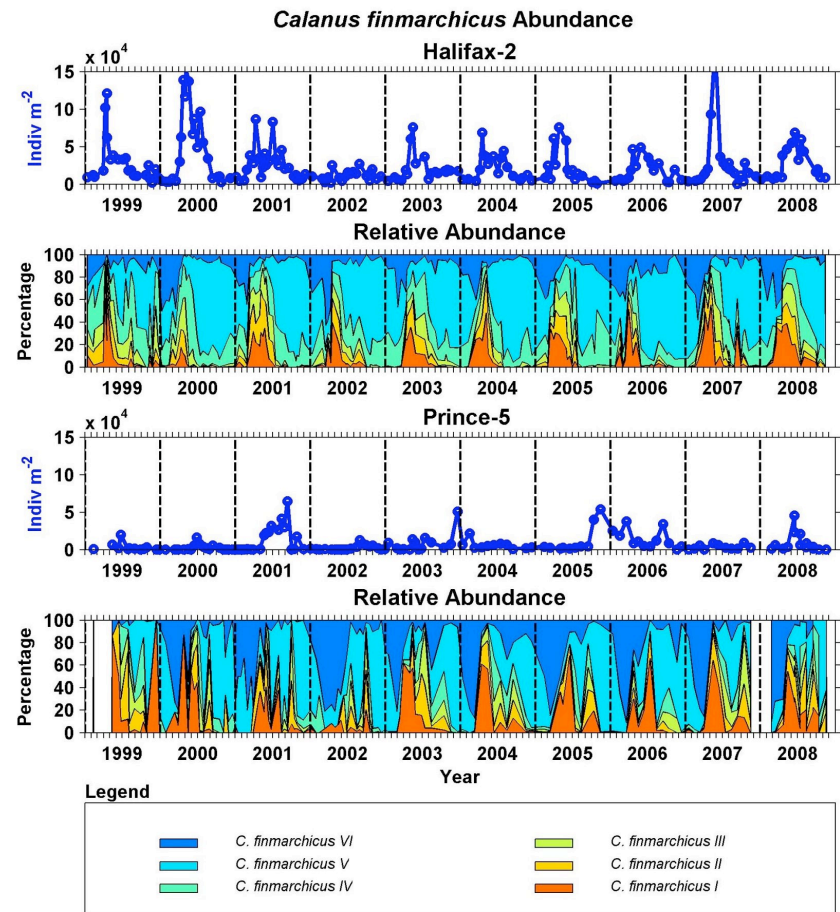
Calanus finmarchicus interannual variability

Spring and fall transects

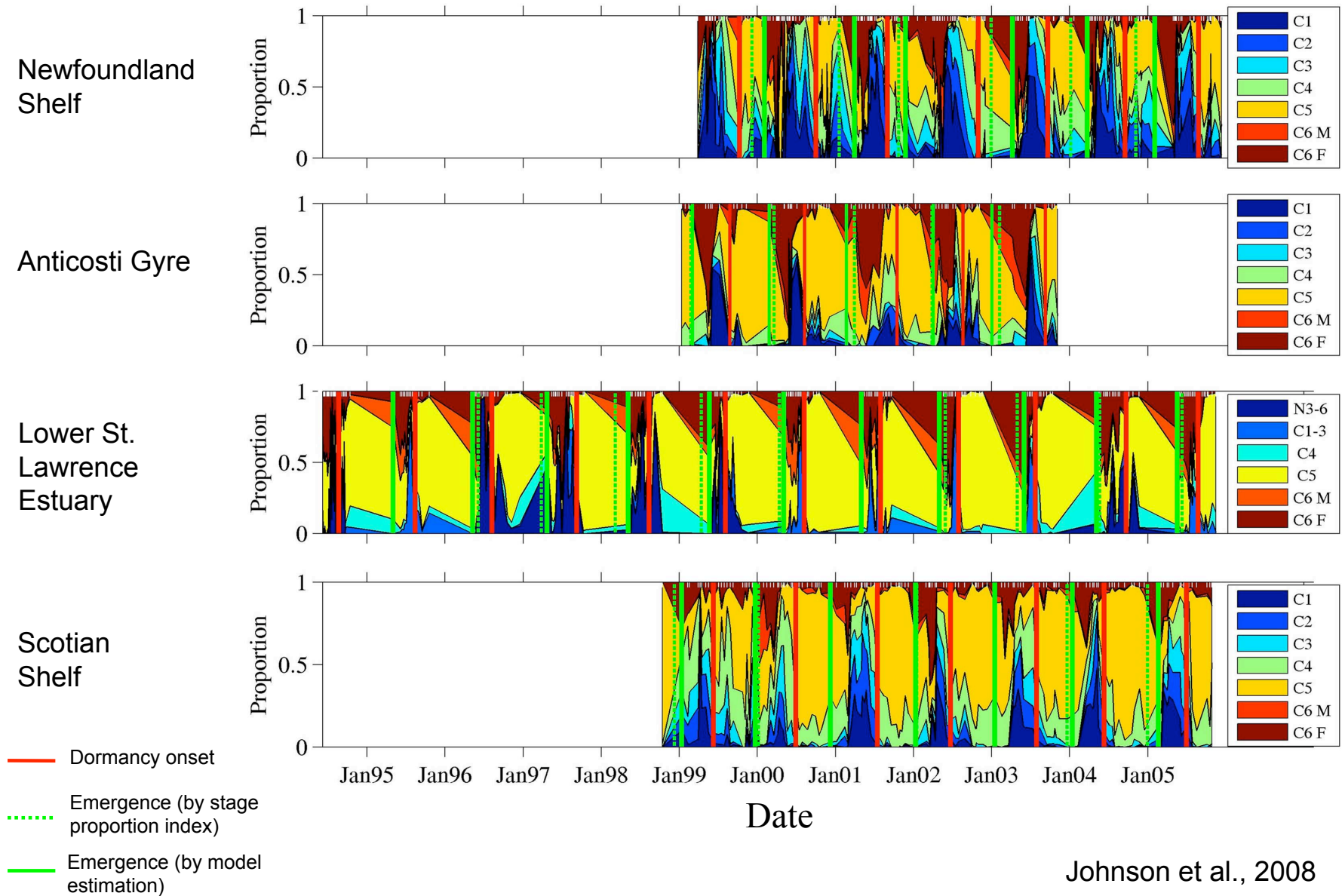


C. finmarchicus abundance, Spring - black, Fall - white

Fixed stations



Calanus finmarchicus dormancy timing



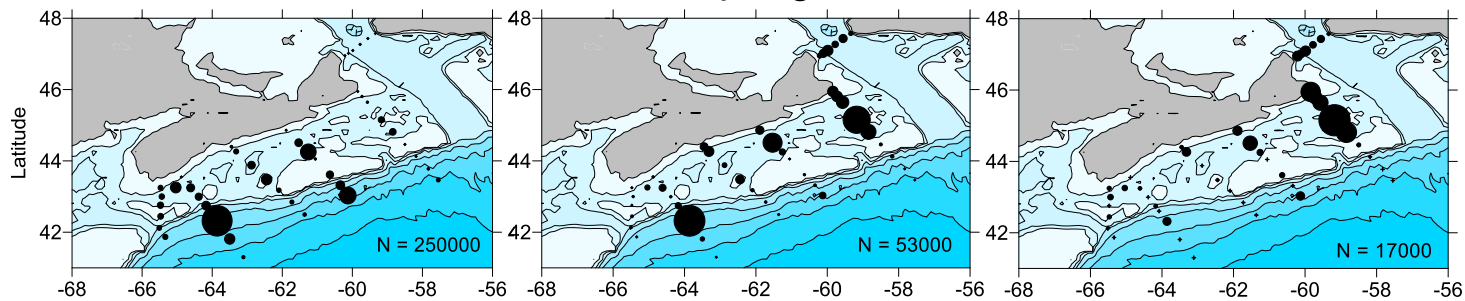
Calanus spatial variability – 1999 to 2008

Calanus finmarchicus

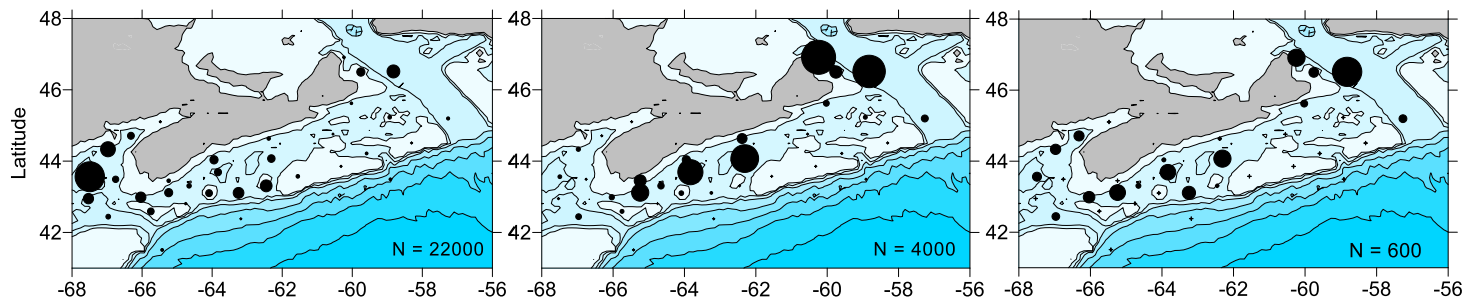
Calanus hyperboreus

Calanus glacialis

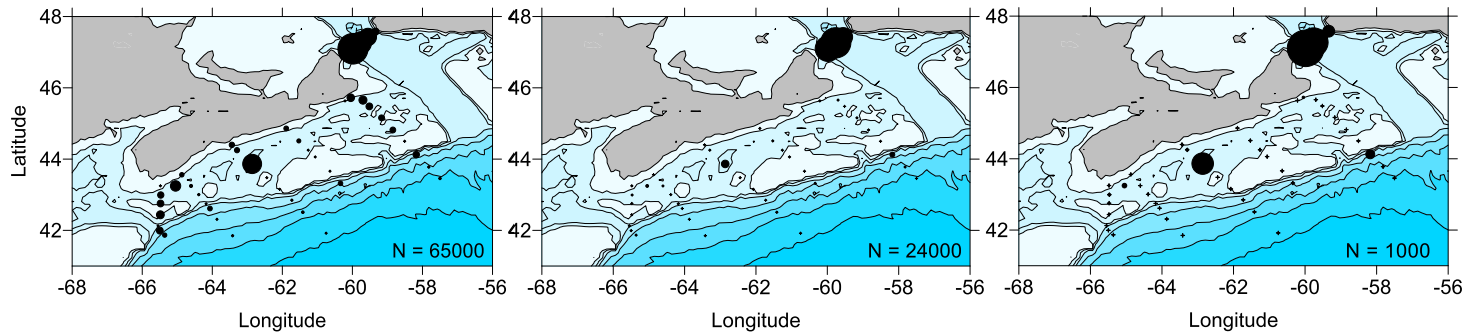
Spring



Summer



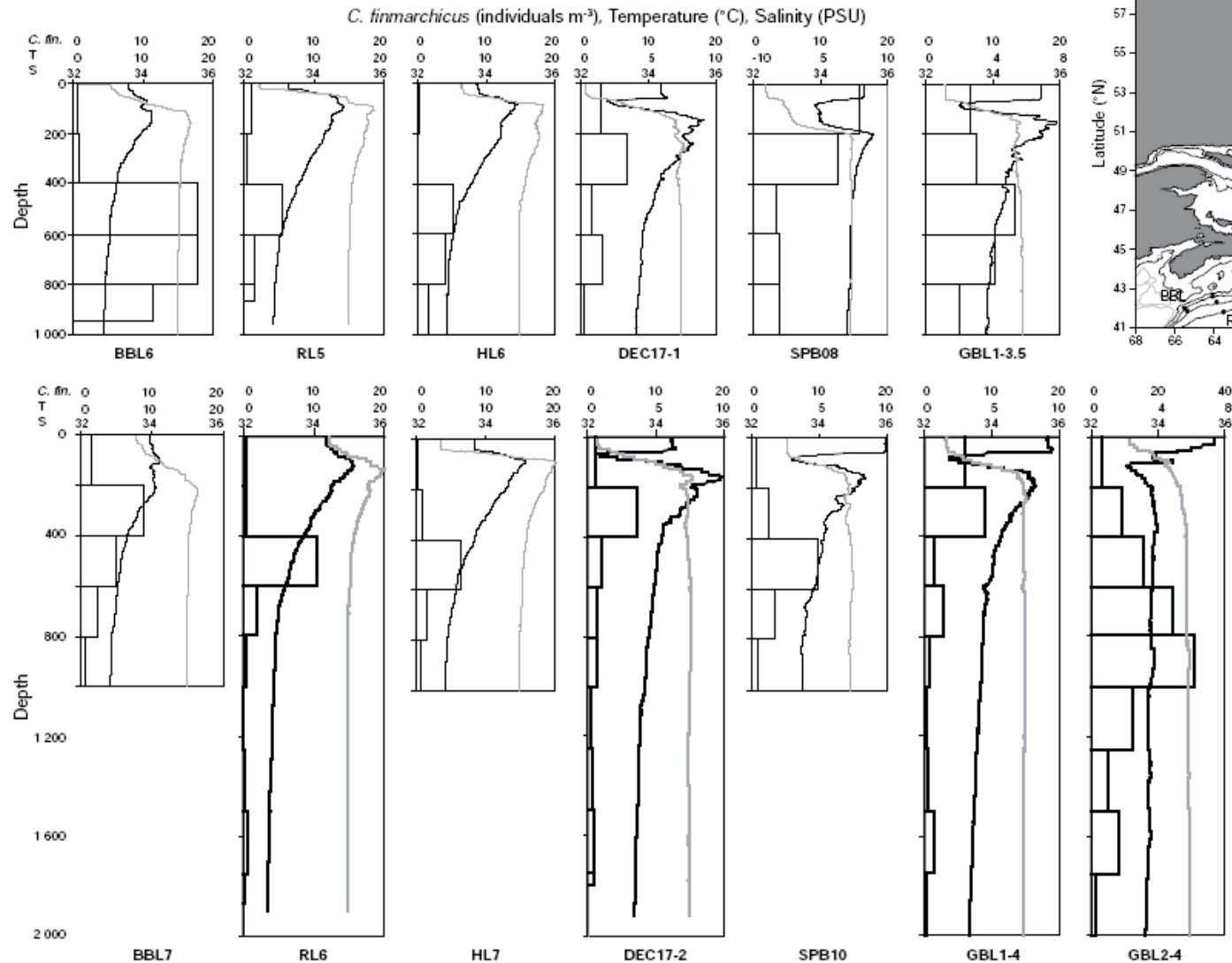
Fall



Johnson & Connelly, unpublished

● $N m^{-2}$ ● $N/2 m^{-2}$ ● $N/4 m^{-2}$

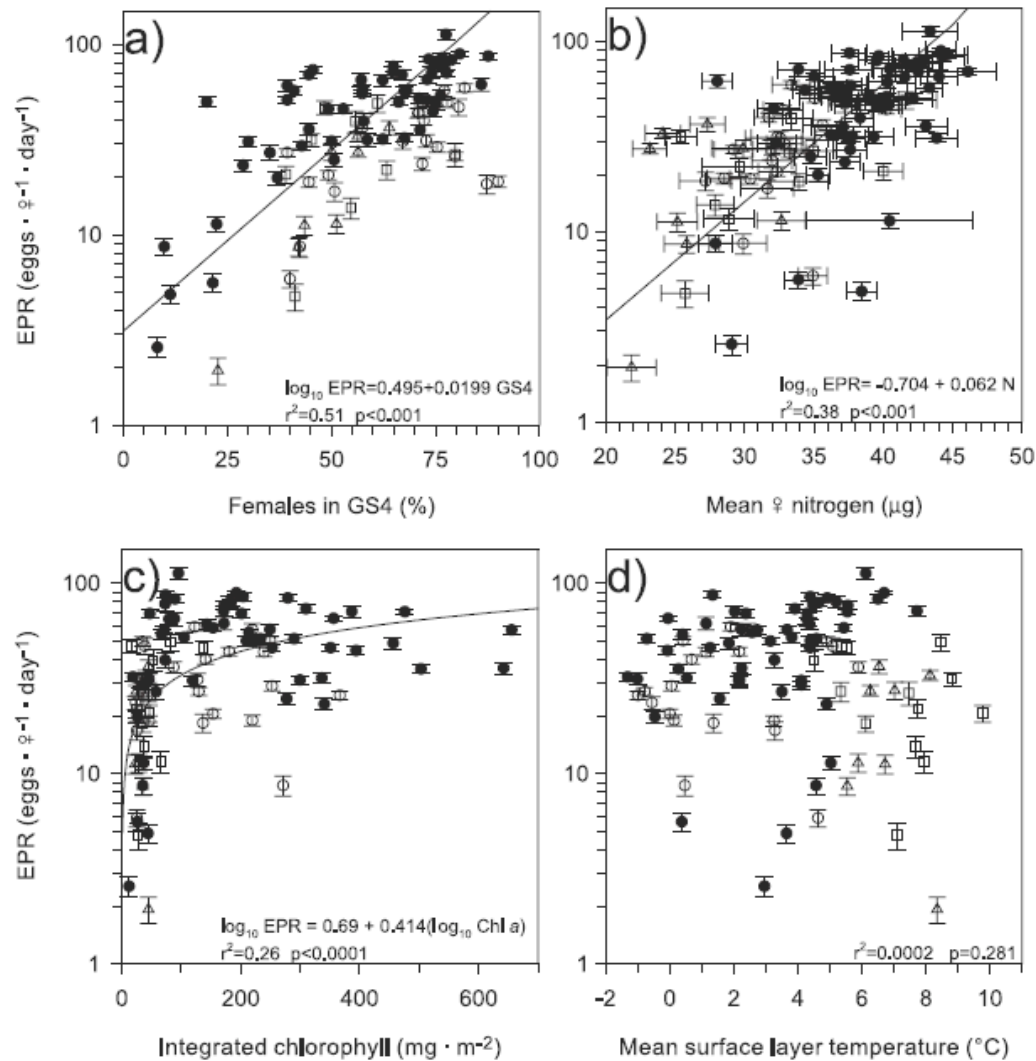
Vertical distribution



- Stratified profiles are routinely collected in Emerald Basin, Cabot Strait, and in Scotian slope waters on AZMP broadscale cruises
- Numerous other stratified samples have been collected in the Scotian Shelf / Gulf of Maine region during and before the AZMP years

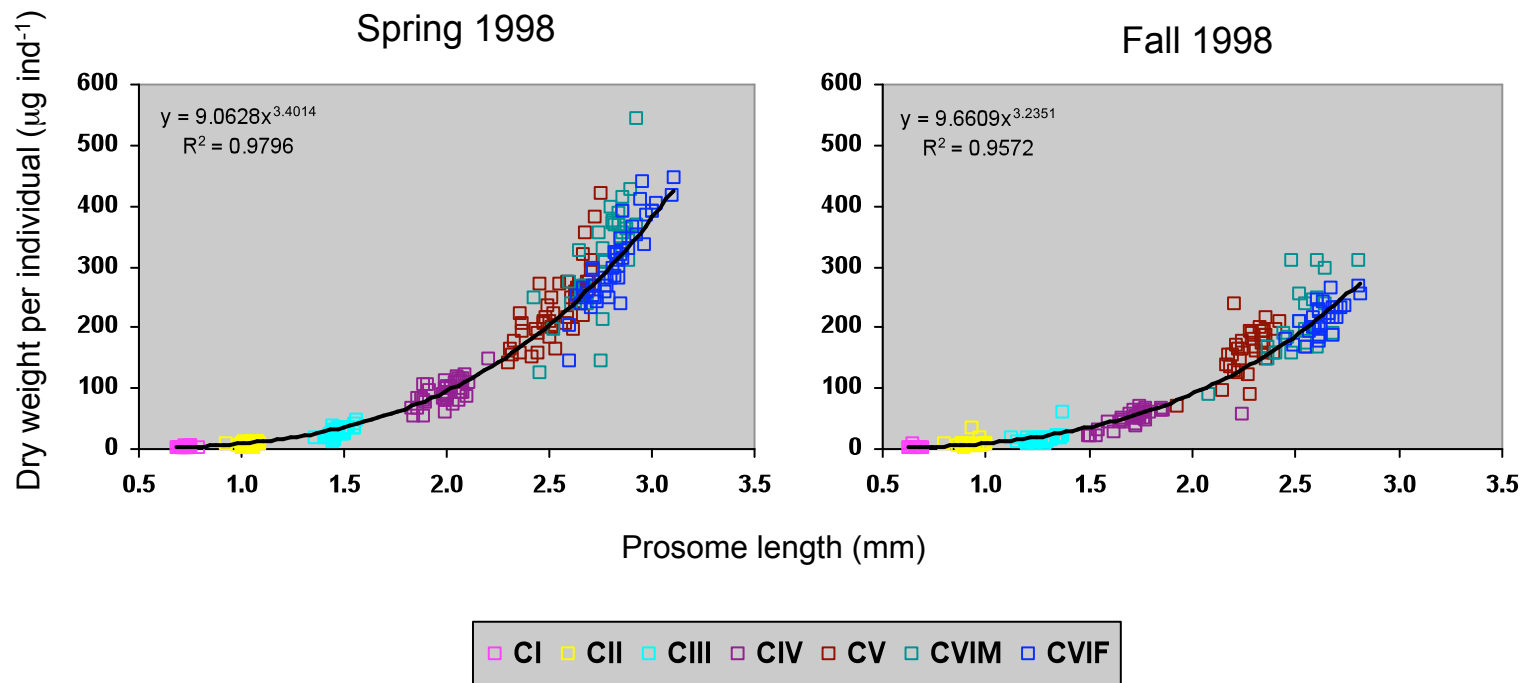
Egg production rates

Egg production rates available for summer and fall, 1996 and spring, 1997



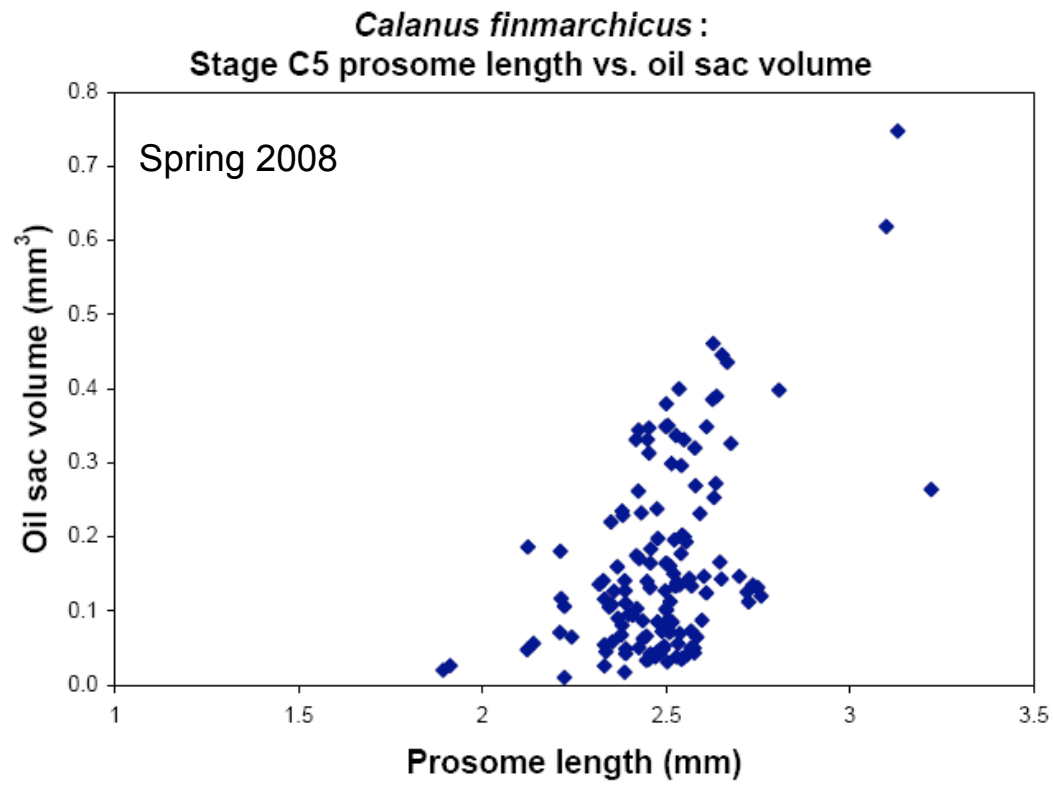
Length/weight relationships

- Samples were collected using vertical net tows from 0-100m or 0-bottom and preserved in 2% formalin.
- Prosome lengths were determined for ~30 individuals per stage per station and dry weights were determined for these groups of individuals.
- Data points are for individual stations.
- Additional length and weight data were collected in spring of 1999, 2000, and 2001.



Lipid content

- Lipid content was estimated from images of individual CIV and CV *Calanus* collected from shallow and deep water in spring 2008 and fall 2008 and 2009.
- *C. finmarchicus* targeted, but some *C. glacialis* also imaged.



Johnson & Runge, unpubl. data

