

The Euphausiid Gang

Rodger Harvey - University of Maryland

Evelyn Lessard - University of Washington



Together with:

Alexei Pinchuk (UA Fairbanks)

Tracy Shaw (OSU, Newport)

Se-Jong Ju (KORDI)

Central Hypothesis:

Variation in the timing and coverage of sea-ice and associated food resources lead to differences in age structure, diet history and nutritional condition for euphausiids. These affect krill production rates and their availability to higher trophic levels.

What we plan to do:

Animal collections in ice and open water (AT NIGHT)



Potential Prey
Copepods and nauplii, protists, phytoplankton, detritus, ice algae



Biochemical
Age estimation

HPLC
(on board)

lipofuscins

Calibration
(rearing at UAF)

Demographic structure

Lipid
Biomarkers
(shore based)

GC & GC-MS

Diet History &
Nutritional Status

Shipboard Feeding
Experiments (at night)

Culture
prey

Growth Rate and
Egg Production

Links to Higher Trophics ?



Live Euphausiid Collections and Measurements at Process Stations (night):

~ 15 process stations; shelf, slope, under and near ice -edge; CTDs and nets

Measurements/incubations:

- Collect live euphausiids with Bongo nets
- Lipid profiles plus aging by the lipo fusicin method
- Feeding experiments - grazing rates on chlor, specific prey, lipids
- Growth and reproduction experiments
- Shipboard rearing for start of aging calibration studies

Prey field characterizations:

- Chlor, lipids, phytoplankton and microzooplankton composition/biomass
- Shipboard phyto/microzoo isolations and culturing for lipid characterization

MOCNESS collections:

- Large mesozooplankton/micronekton abundance/biomass

Mesozooplankton Collections at Survey stations

- Vertical Calvet tows