

Great Salt Lake Ecosystem Project

Research, Management, and Conservation

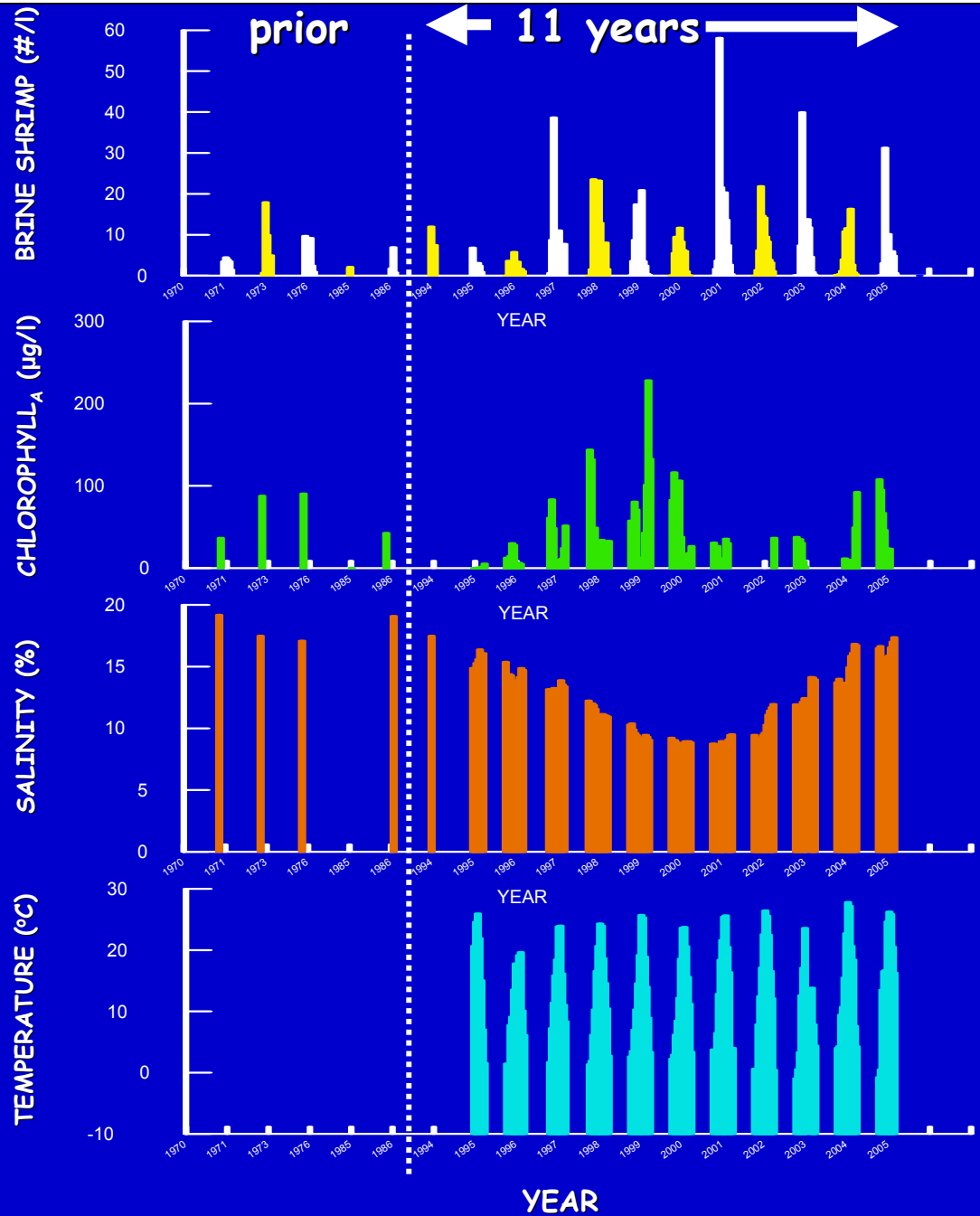


GREAT SALT LAKE (GSL) ECOSYSTEM PROJECT

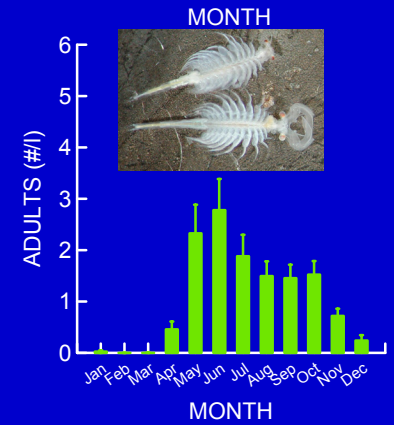
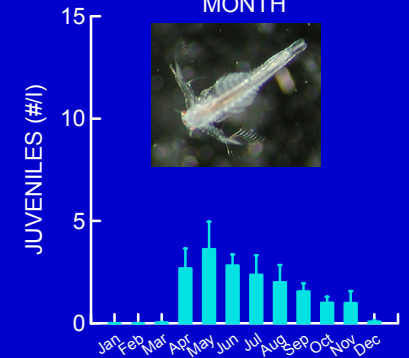
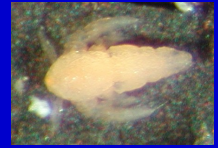
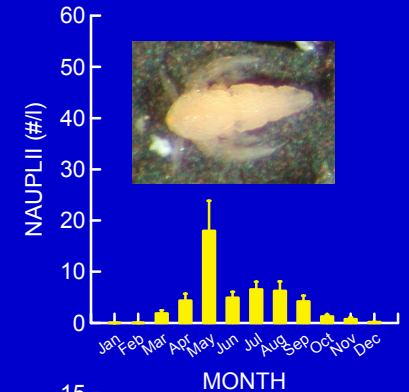
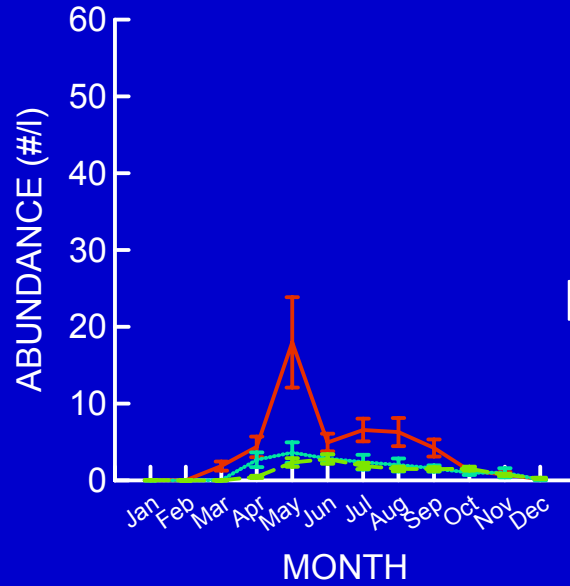
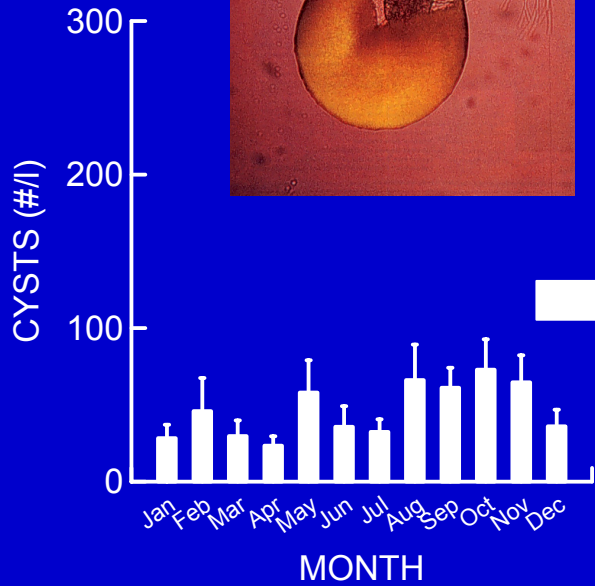
- Initial purpose to address whether commercial harvesting of brine shrimp cysts is sustainable or negatively impacts avian food resources.
- Additionally to address other stresses on the GSL ecosystem.
- Combination of field and laboratory studies.
- Collaborative effort of state and federal agencies and universities.



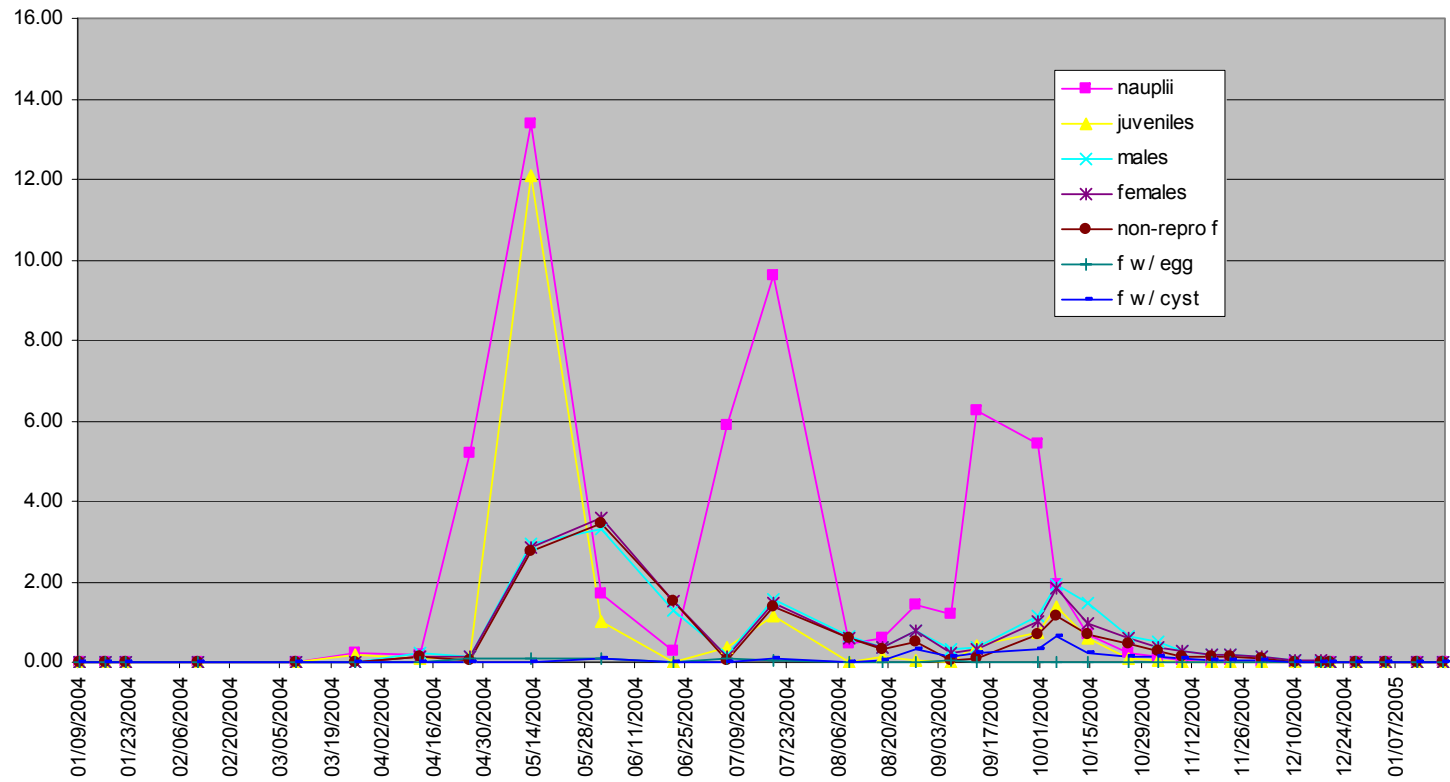
THE TIME SERIES FROM GSL ECOSYSTEM PROJECT



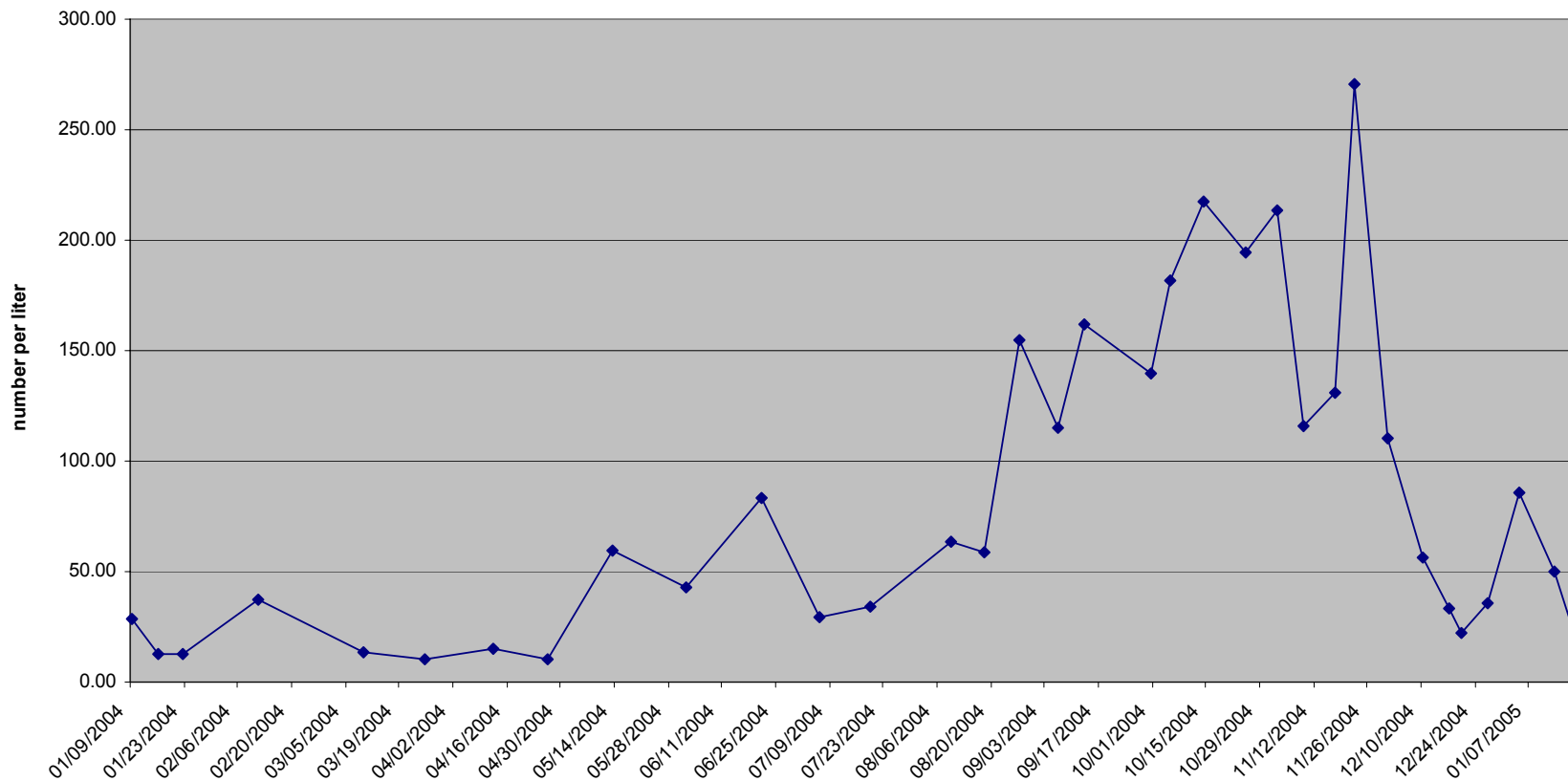
ANNUAL PATTERN



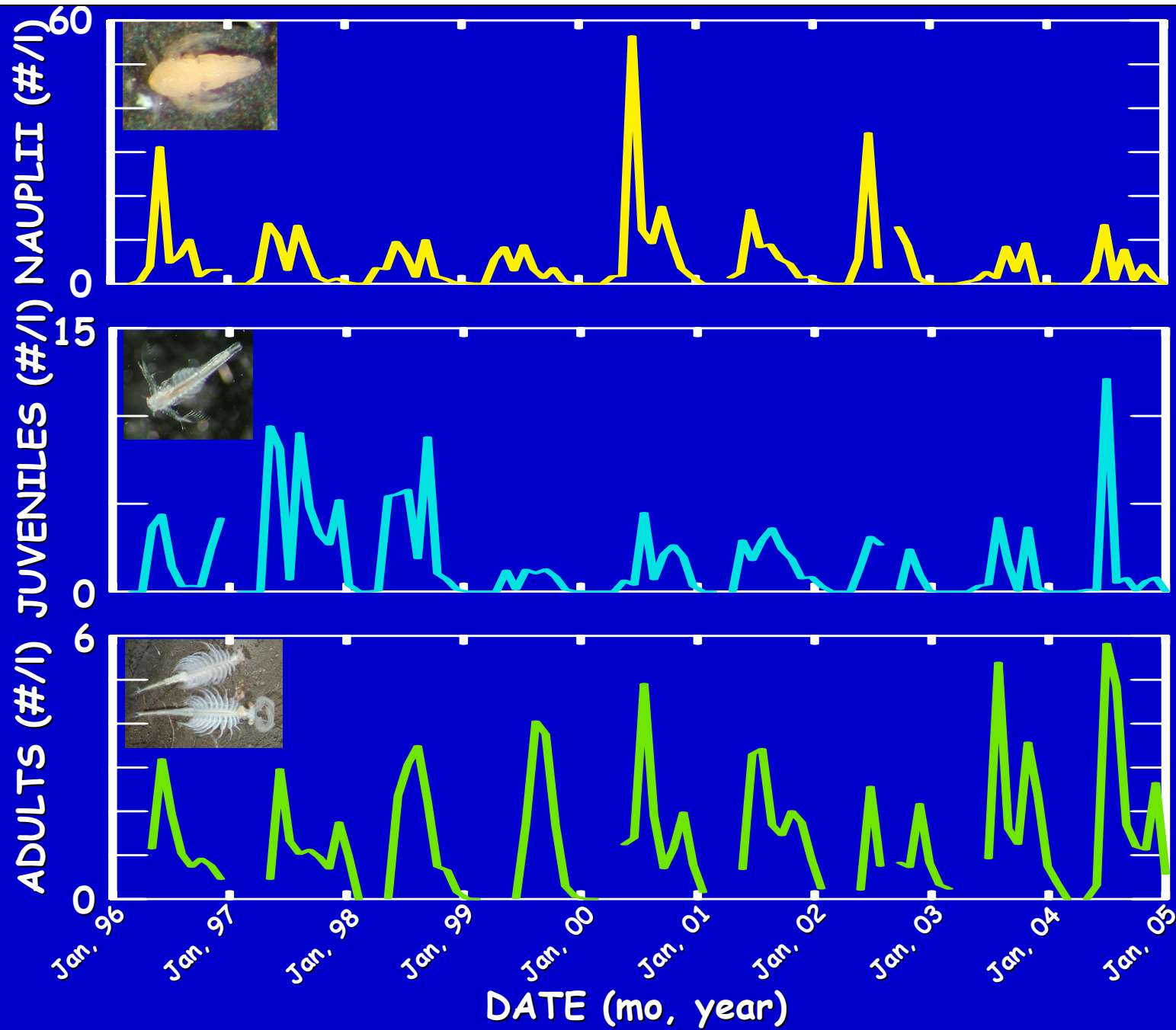
2004-2005 Shrimp Demographics



2004-2005 Cyst Estimates

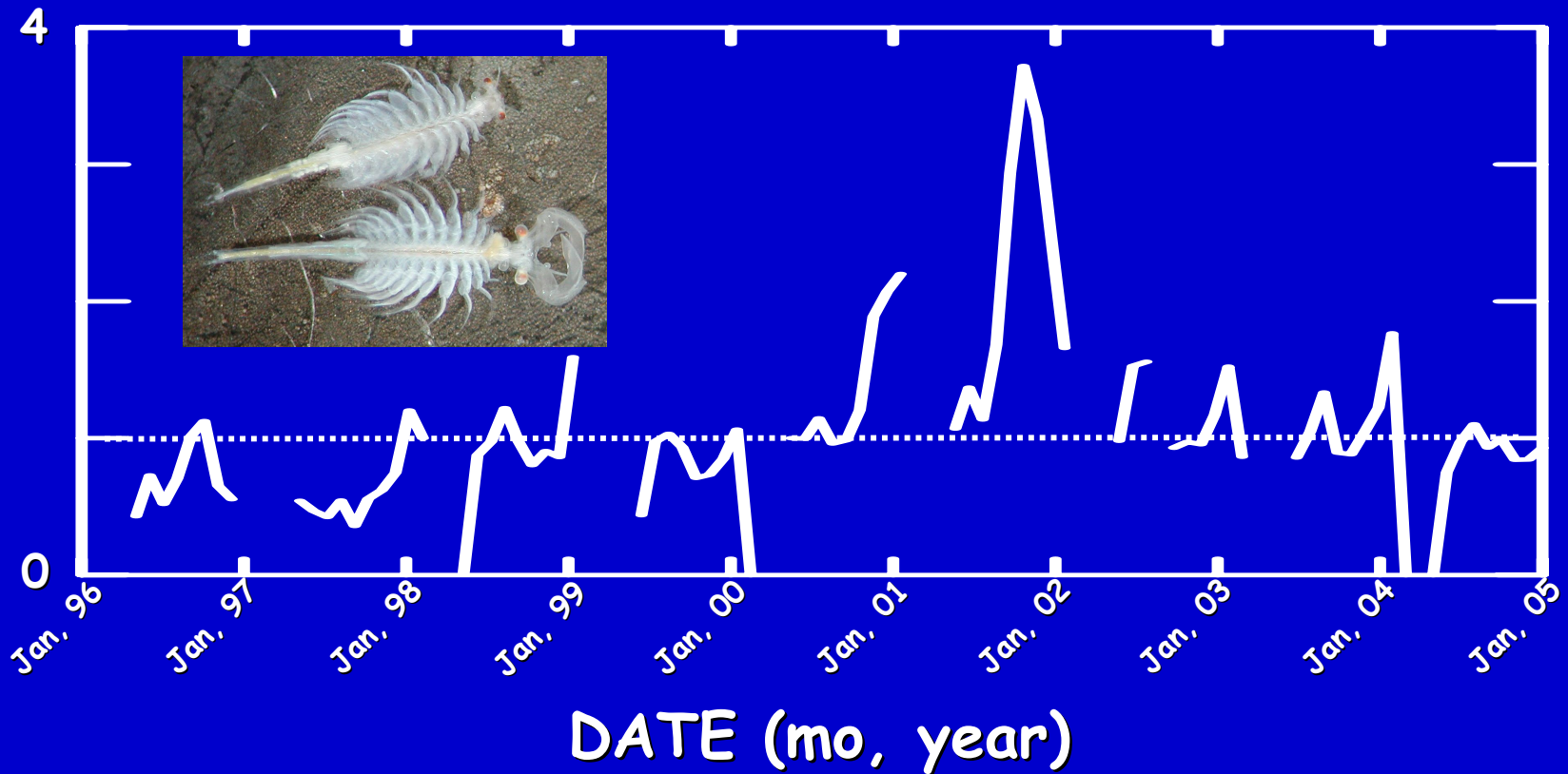


SHRIMP POPULATION STRUCTURE AMONG YEARS



ADULT SEX RATIO AMONG YEARS

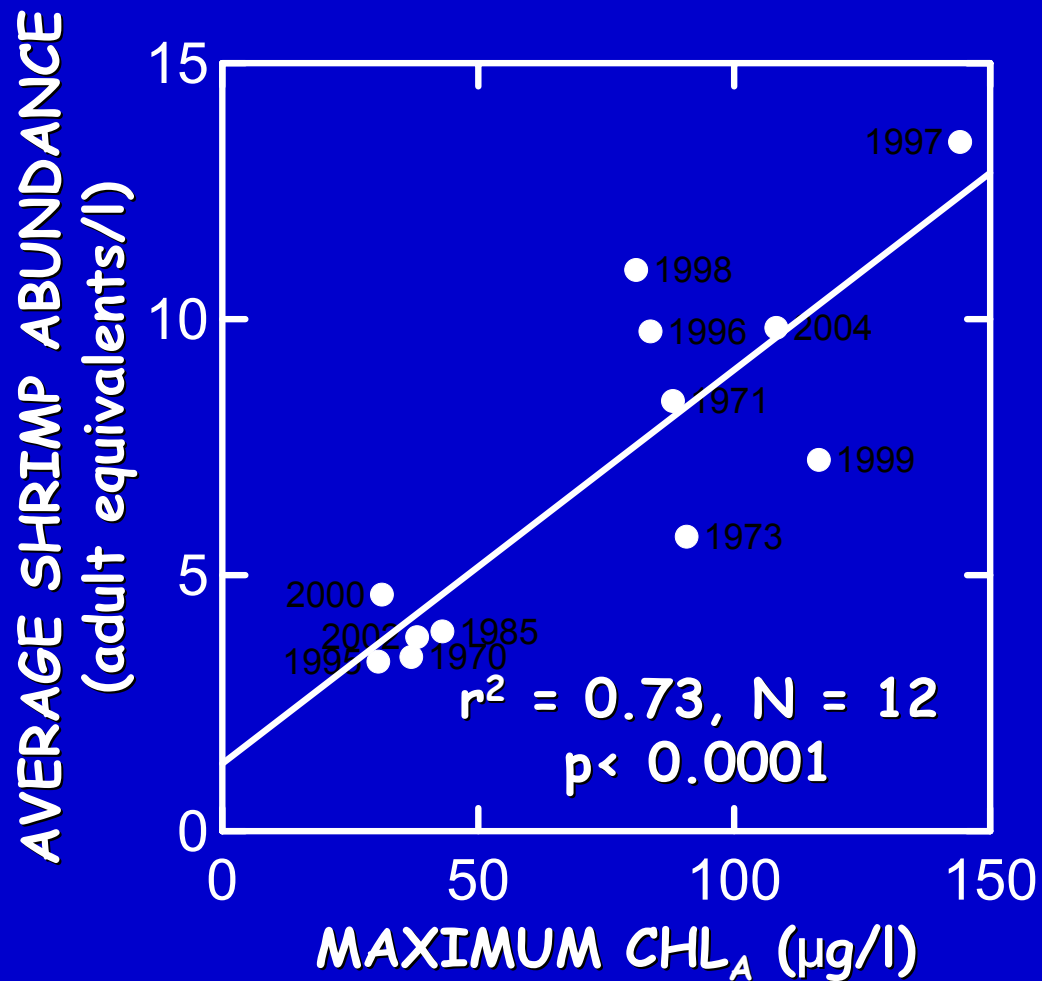
ADULT FEMALES/MALES



SHRIMP AND FOOD RESOURCES

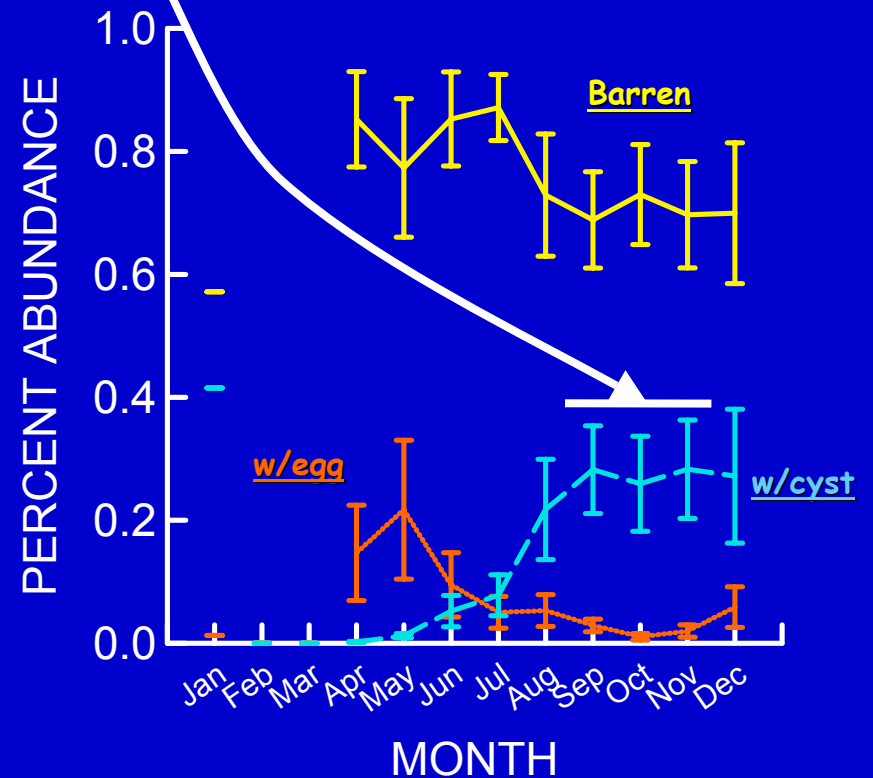
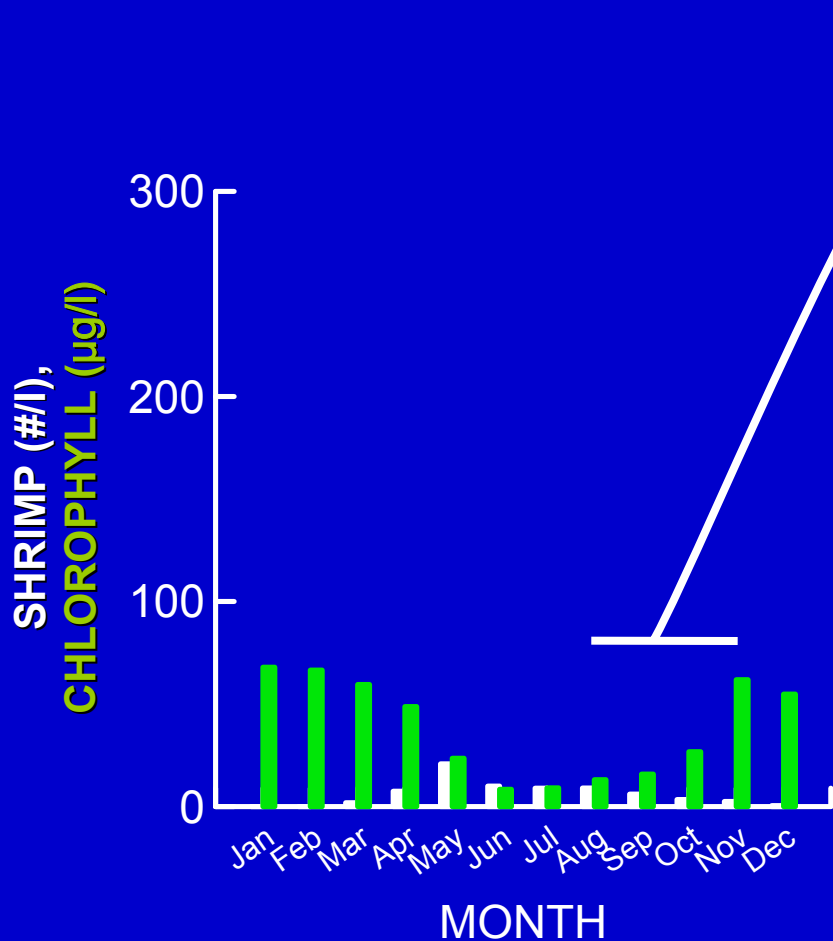
(part I: between years)

Annual shrimp abundance increases
with phytoplankton production



SHRIMP AND FOOD RESOURCES

(part II: within year)



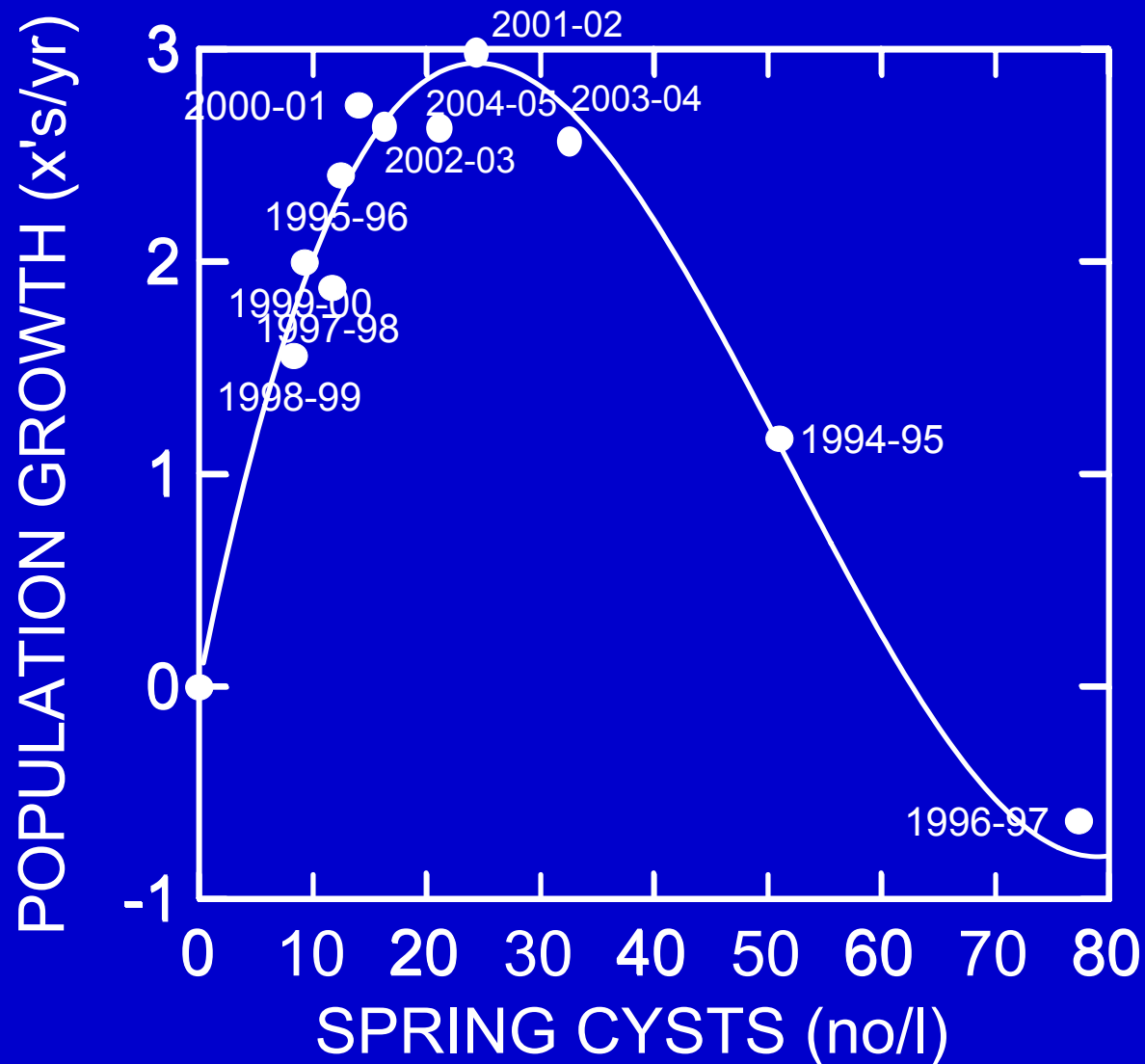
Within year—

Shrimp decrease Chl_A ($F = 16.90$;
 $df = 1,69$; $p < 0.0001$)

Year ($F = 2.63$; $df = 10,69$;
 $p < 0.009$)

Cyst production dominates after
 food deprivation in lab
 ($p < 0.03$, $df = 2, 540$), and
 at low/high temperatures
 ($p < 0.0001$, $df = 3, 540$).

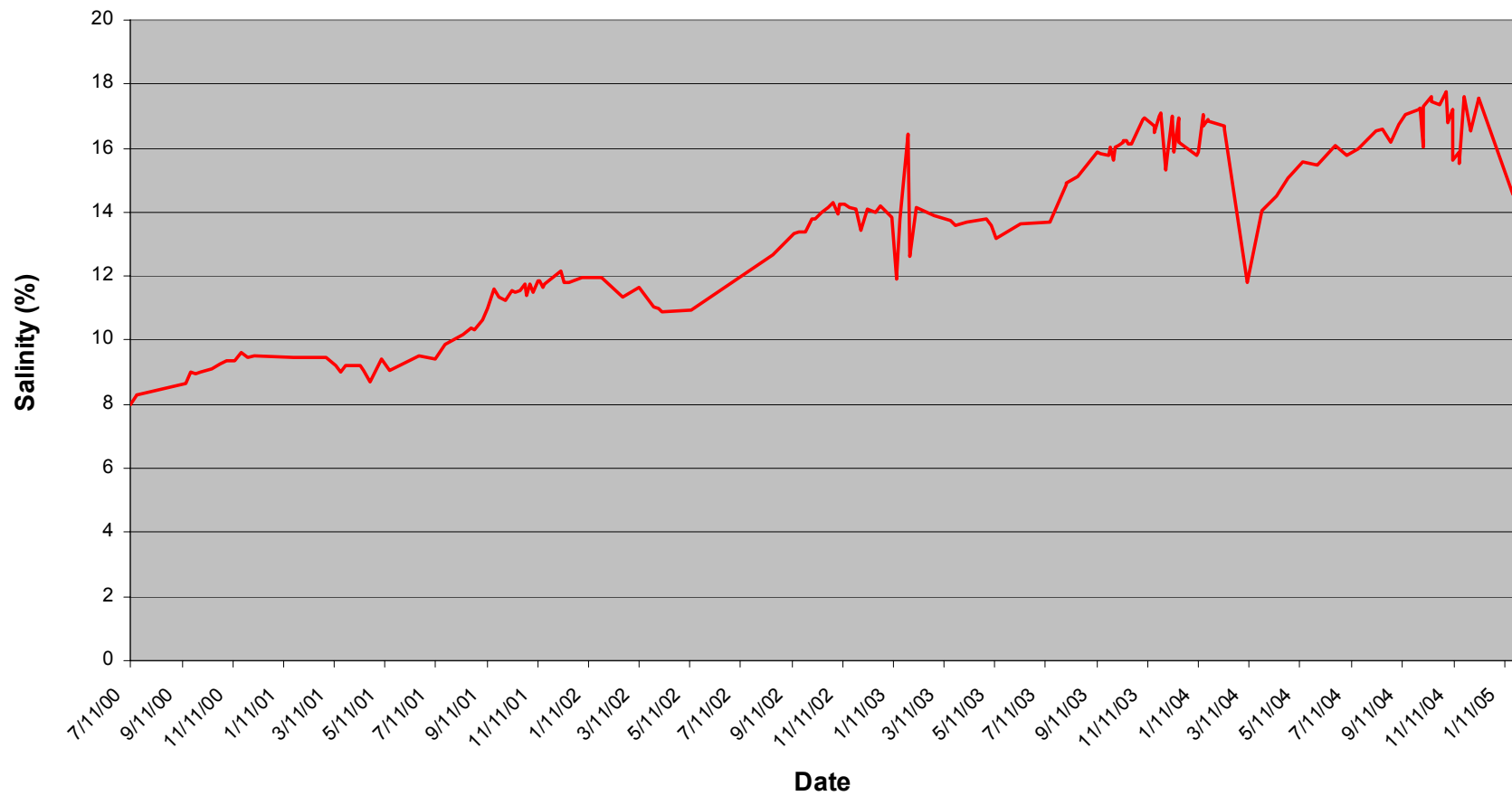
DENSITY DEPENDENCE (intraspecific competition)
FROM THE SPRING HATCHLINGS
basis for annual management of harvest



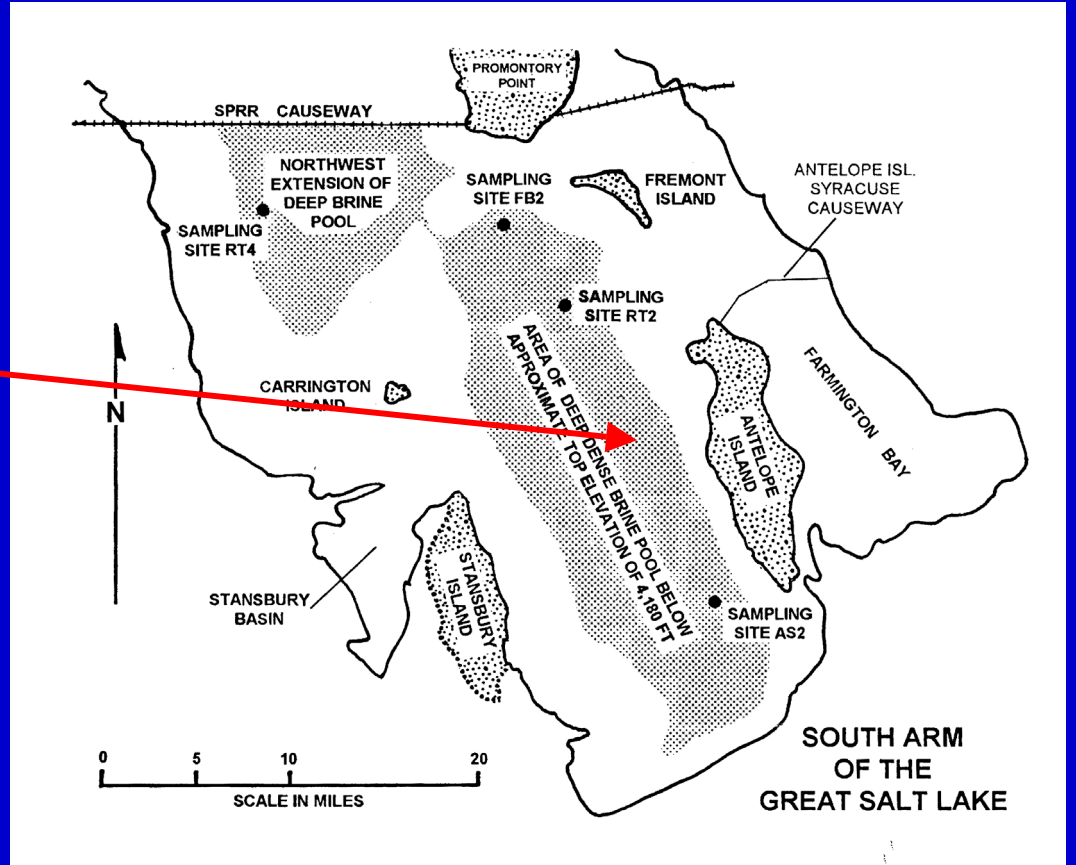
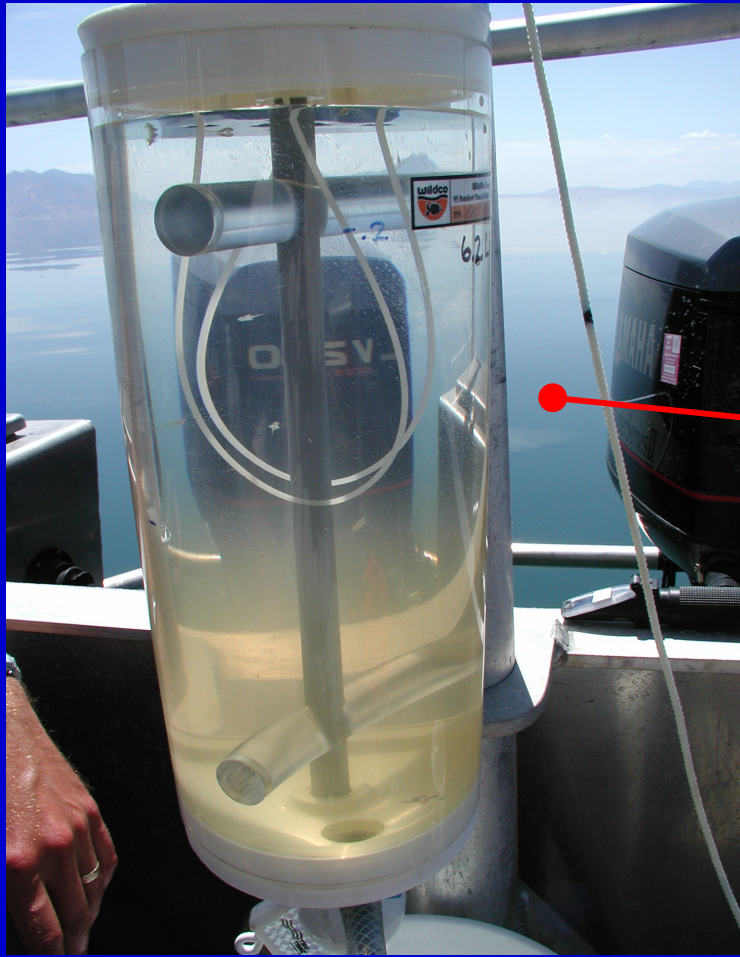
Lake Characteristics



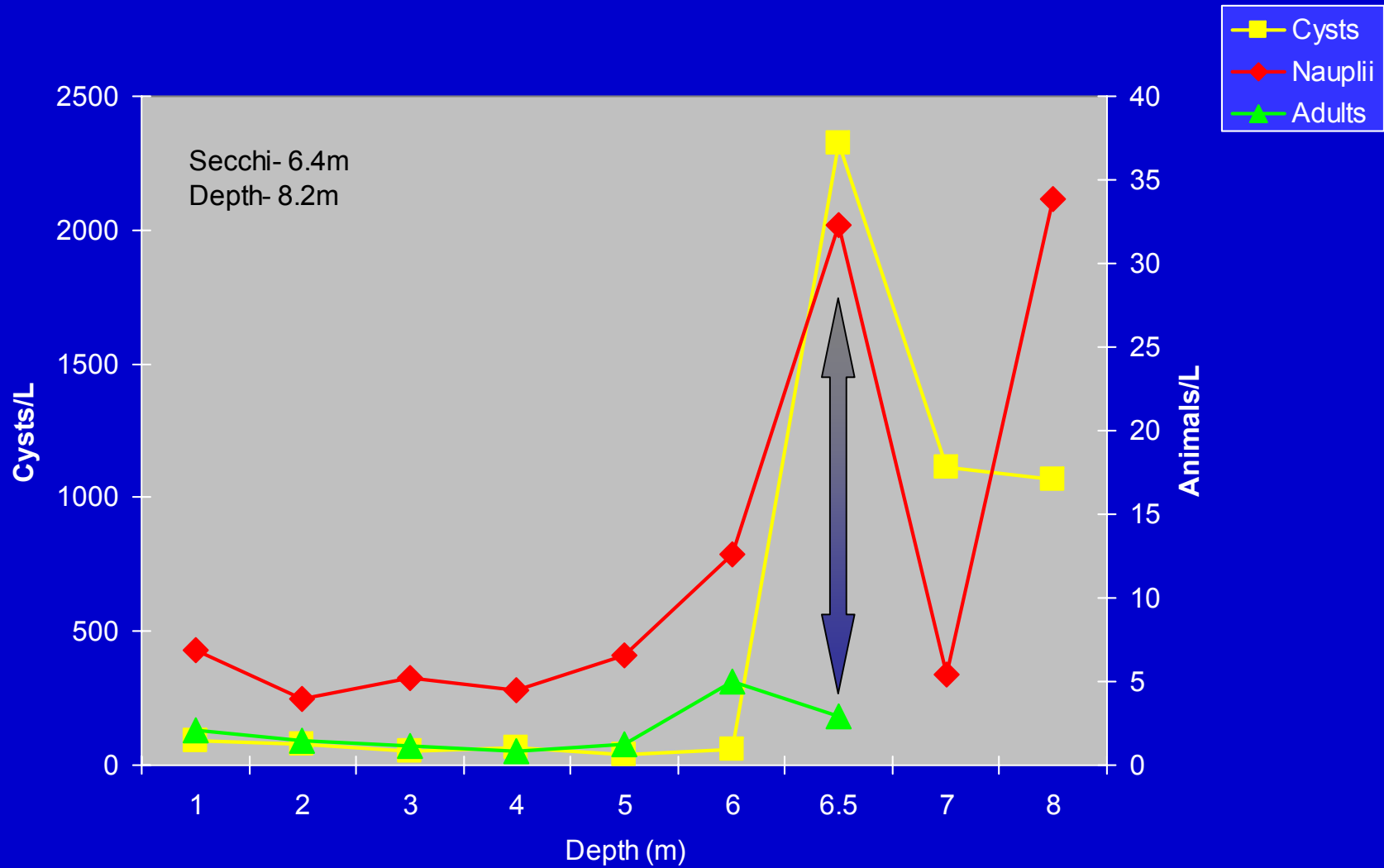
Average South Arm Salinity from 2000 to Present



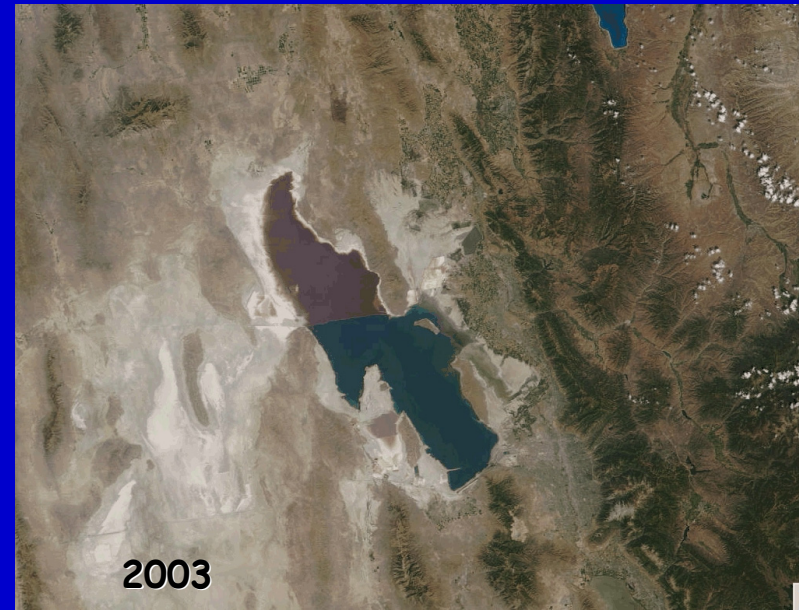
Deep Brine Layer



Shrimp/Cyst Densities vs. Depth at Site DWR III on 8/20/03



Bays and Inflows



Freshwater Lenses and Ice

