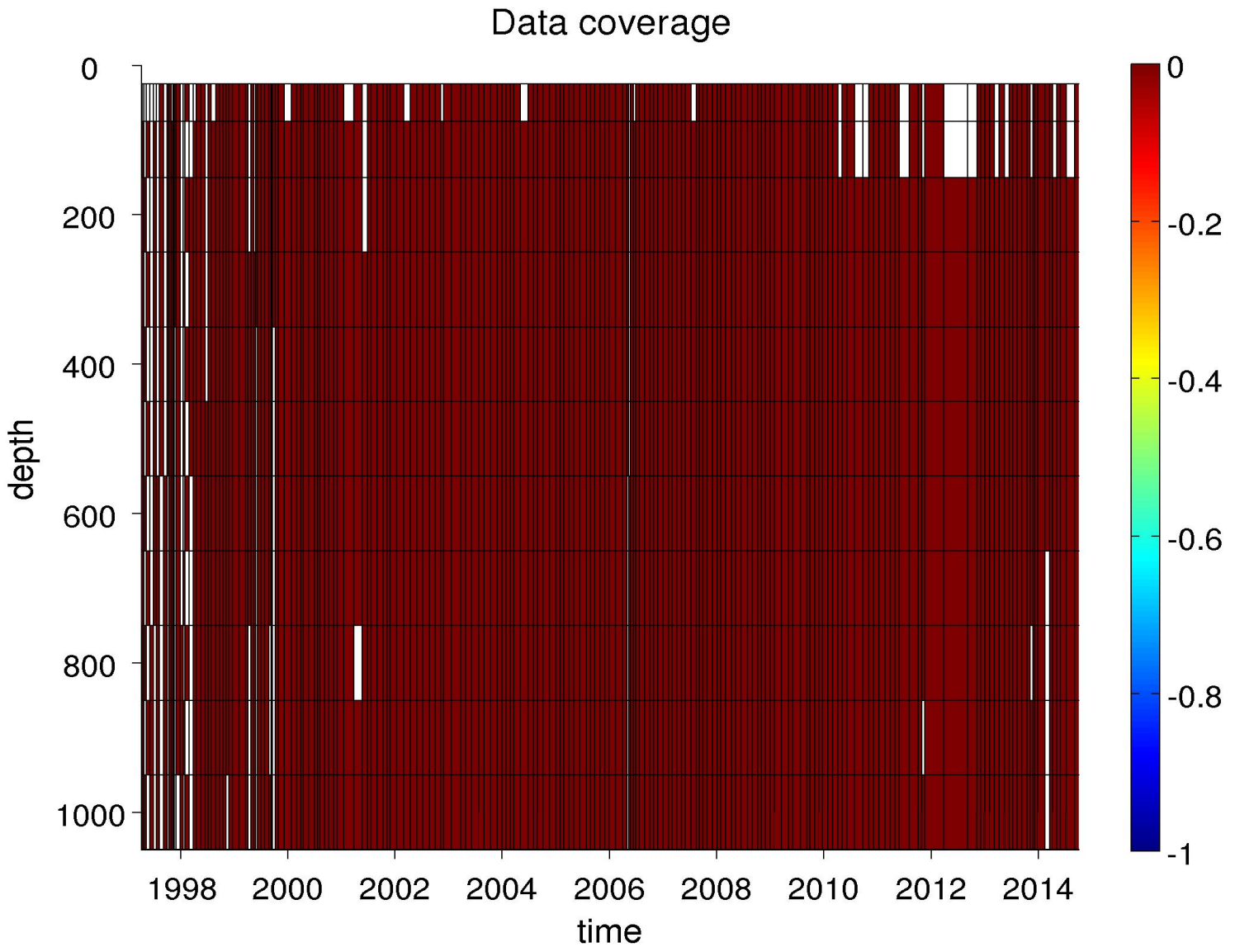
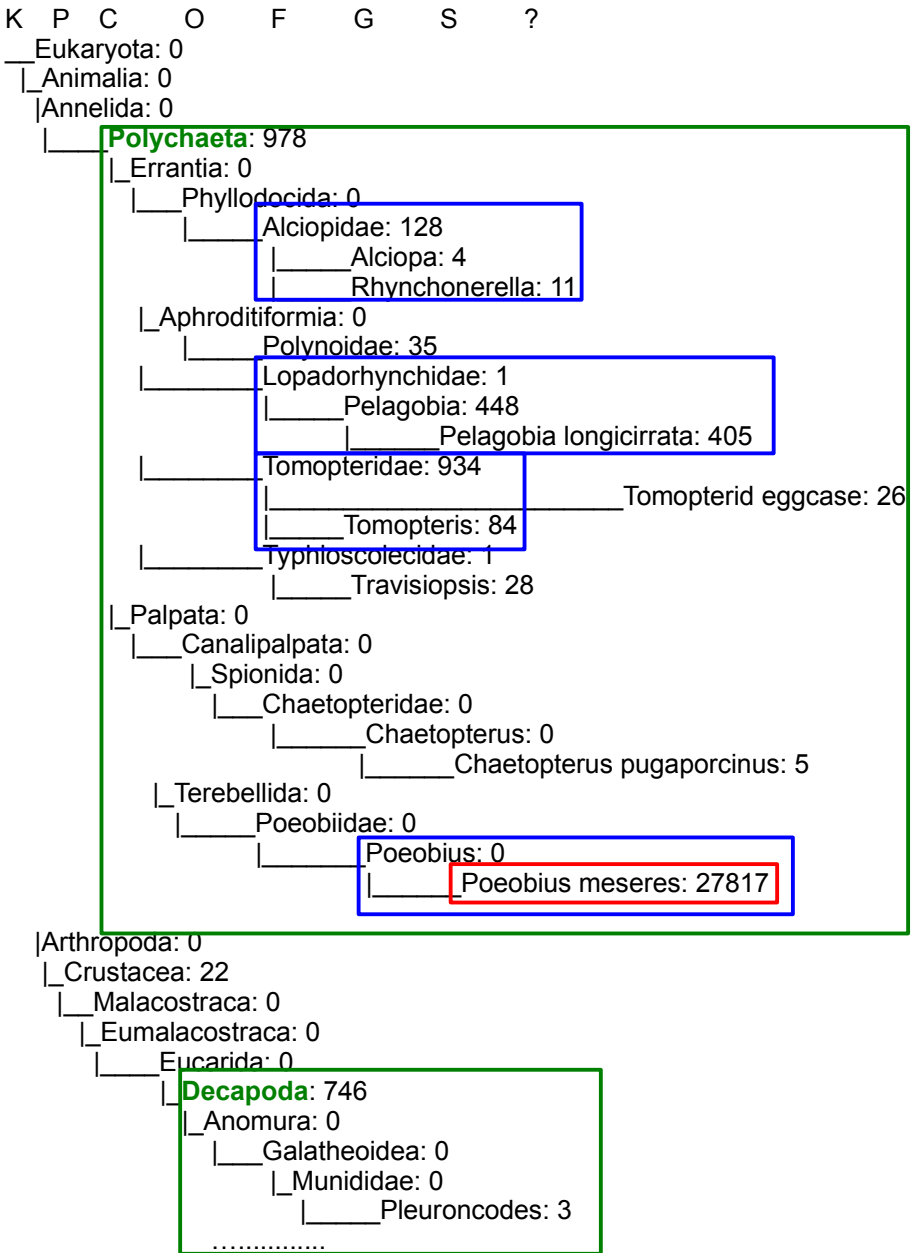
ITS scientific data integration 2015

Scientific analysis	Long-term goals	Near-term science objectives (2015)
Data synthesis	Identify key parameters and condense the time series information	(1) Separately synthesize surface, midwater and benthic time series into a manageable number of representative data sets
Synchronous variability	Identify cause/effect relationships between the time series	(2) Compare the time series from (1) with each other and with climate indices to identify similar variability at the seasonal and interannual scale
Prediction	Predict key parameters in the future, a few years ahead and under climate change	(3) Identify lagged-relationships based on (2) and identify species for which those are robust enough to enable prediction
State of the ecosystem	Define and share proxies related to ecosystem health	(4) Investigate calculations of biodiversity indices
Outside datasets	Enlarge the above studies to the California Current	*- none for 2015 -*
Carbon budget	Quantify carbon fluxes from surface to bottom and harvest	(5) Start combining midwater animal counts with biomass and respiration numbers

Midwater time series



3 sets of time series



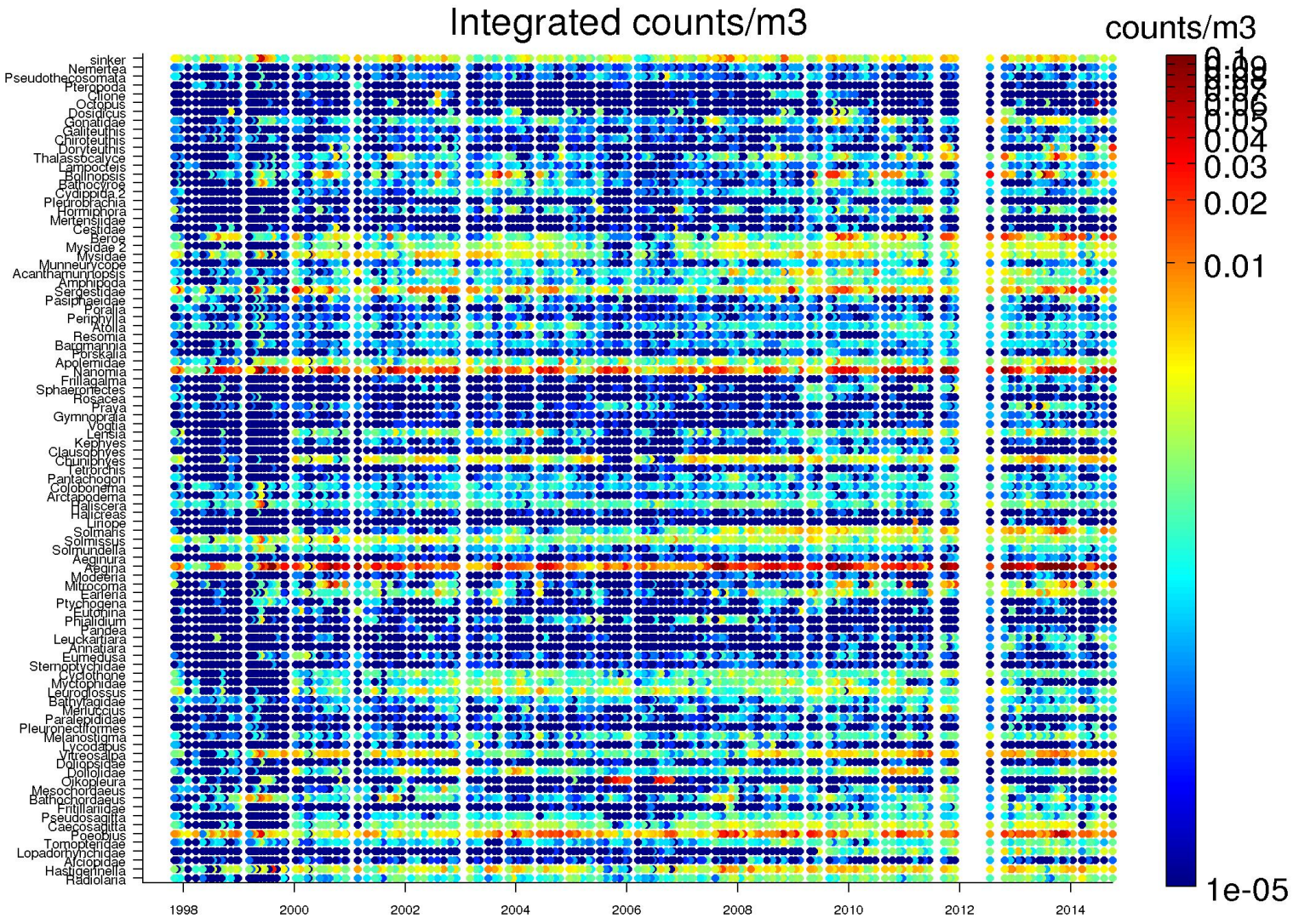
High level:
28 time series, ~ 425,000 counts

"Trusted":
29 time series, ~ 264,000 counts

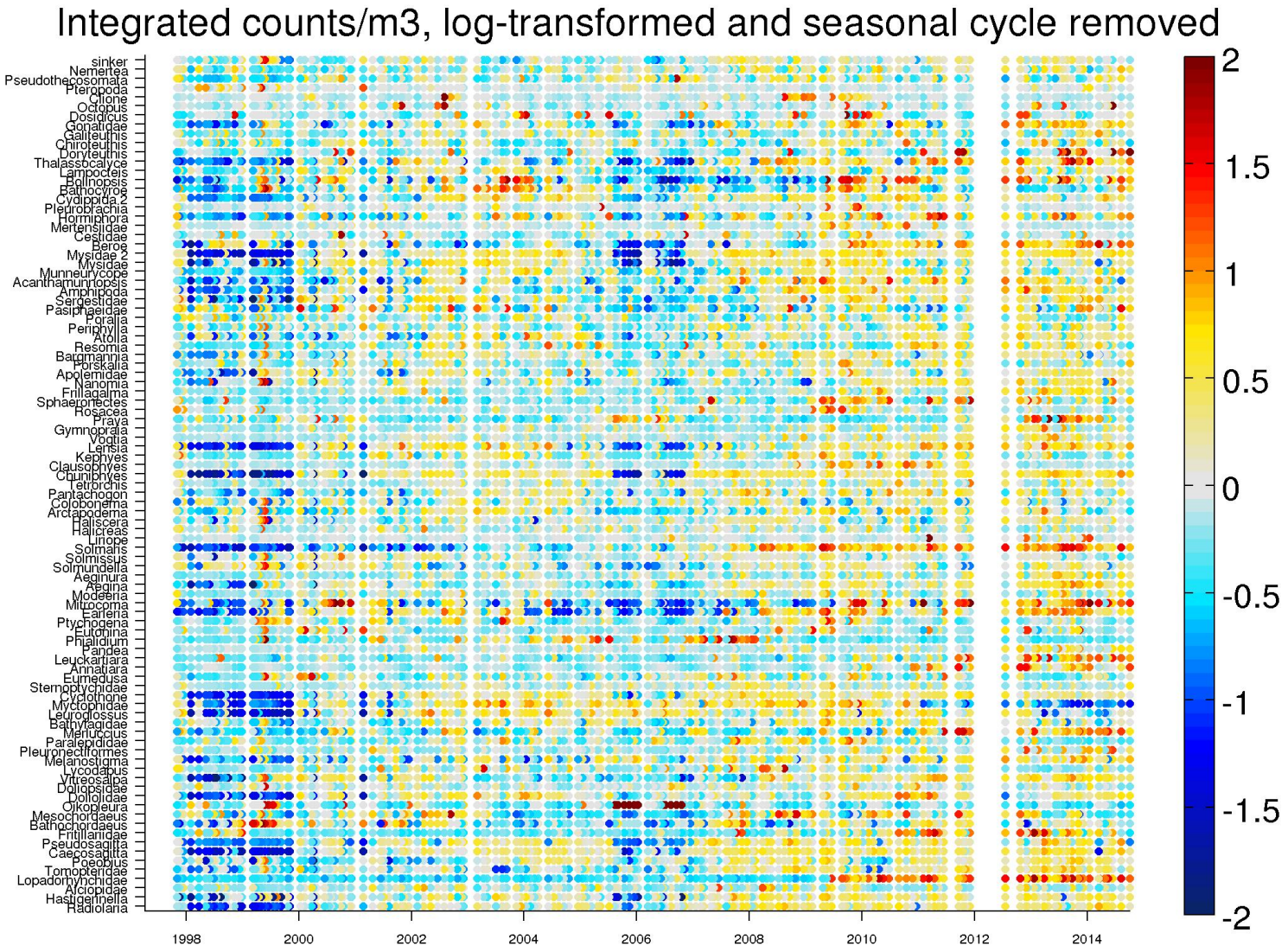
Detailed:
93 time series, ~ 344,000 counts

All:
525 annotations, ~ 498,000 counts

Detailed (integrated)



Detailed (integrated) – log anomalies



Questions for global analysis...

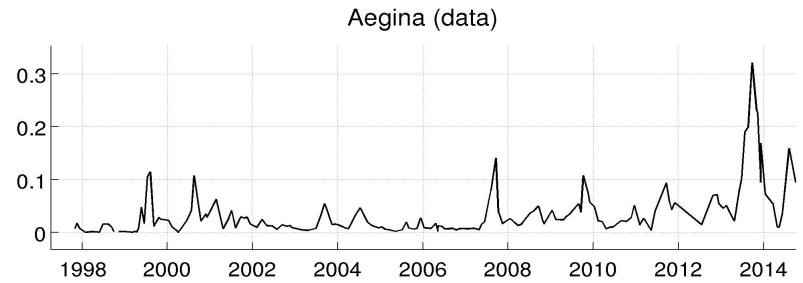
smoothing?

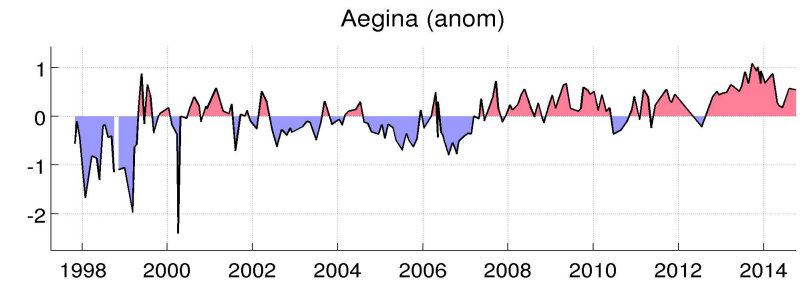
log-transform?

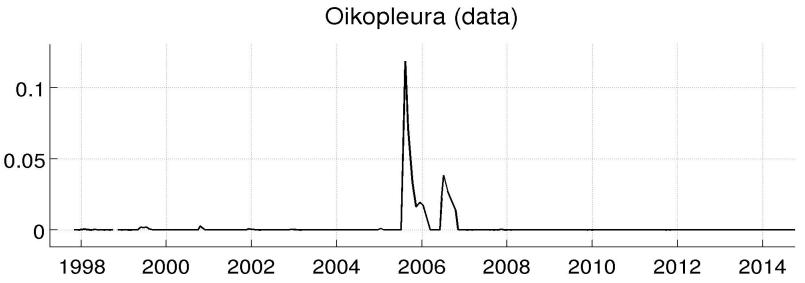
remove seasonal cycle?

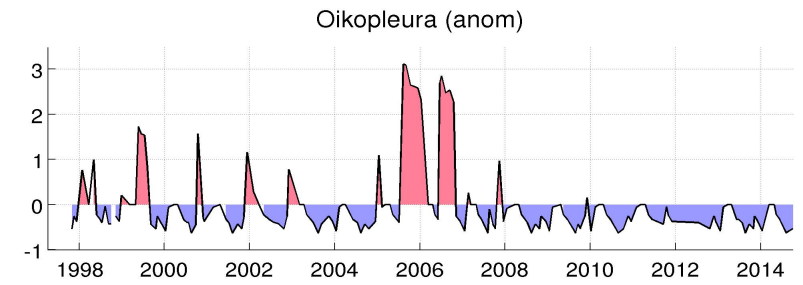
relative weights?

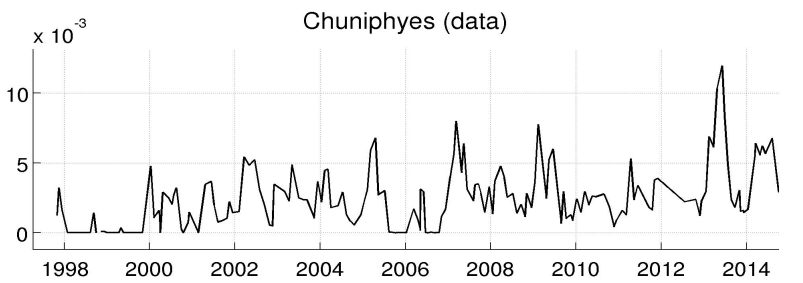
Time series examples

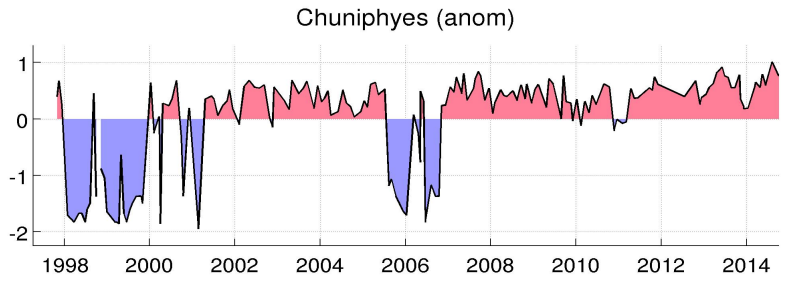


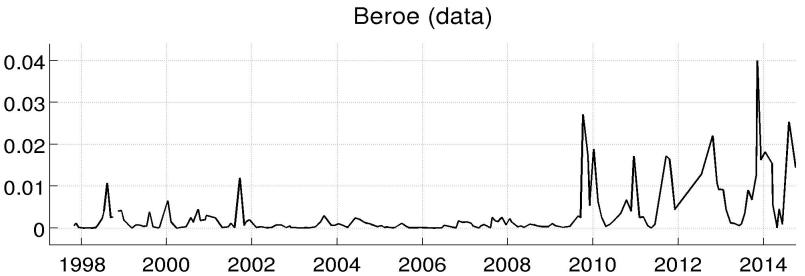


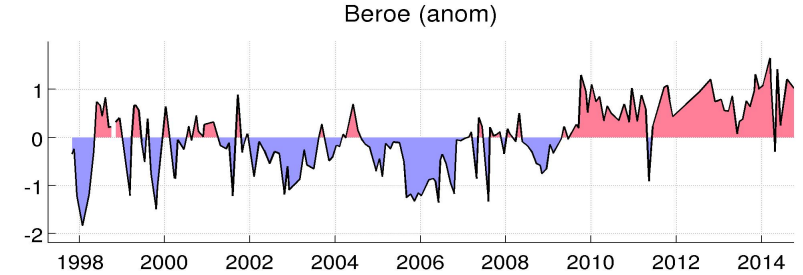




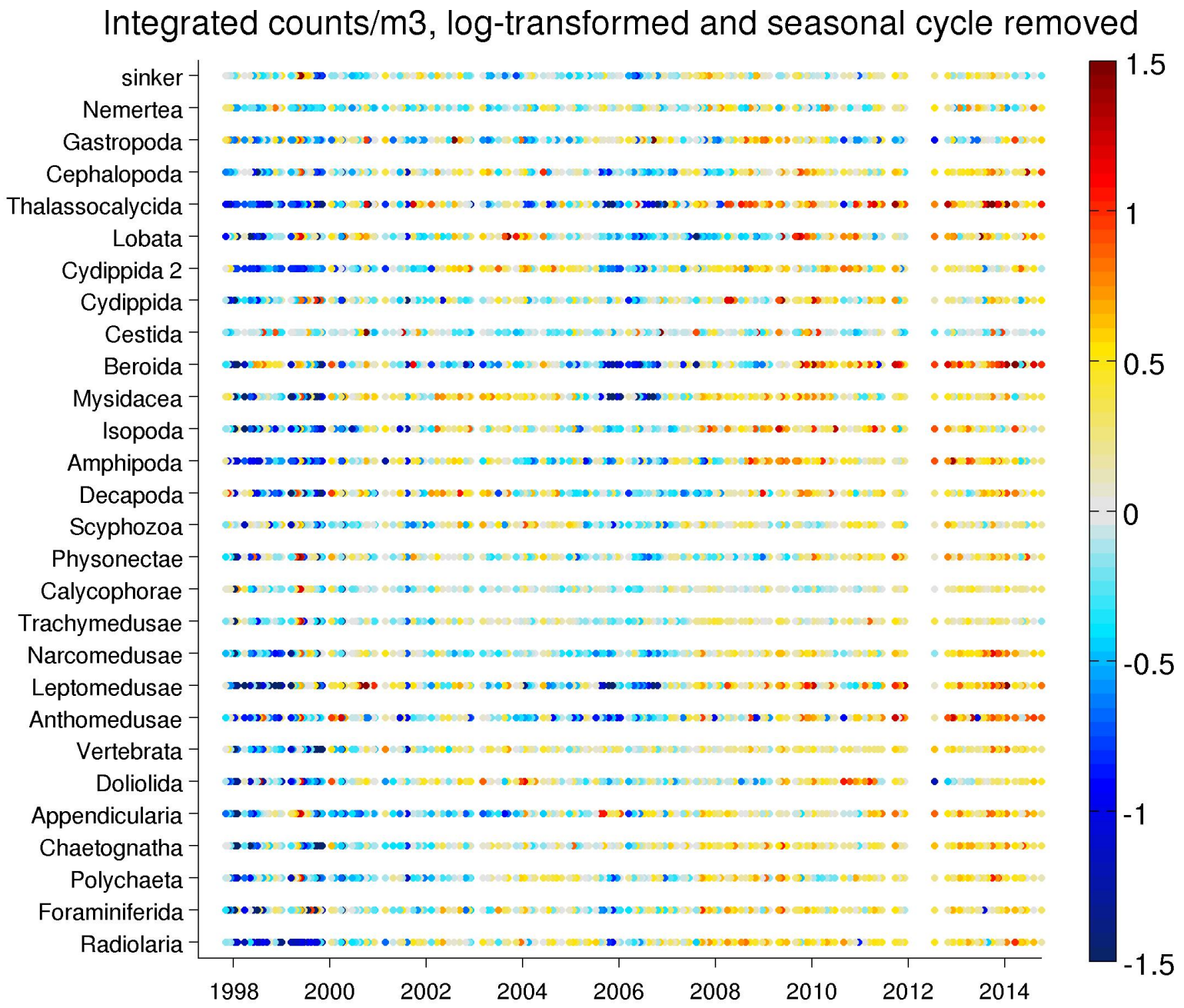


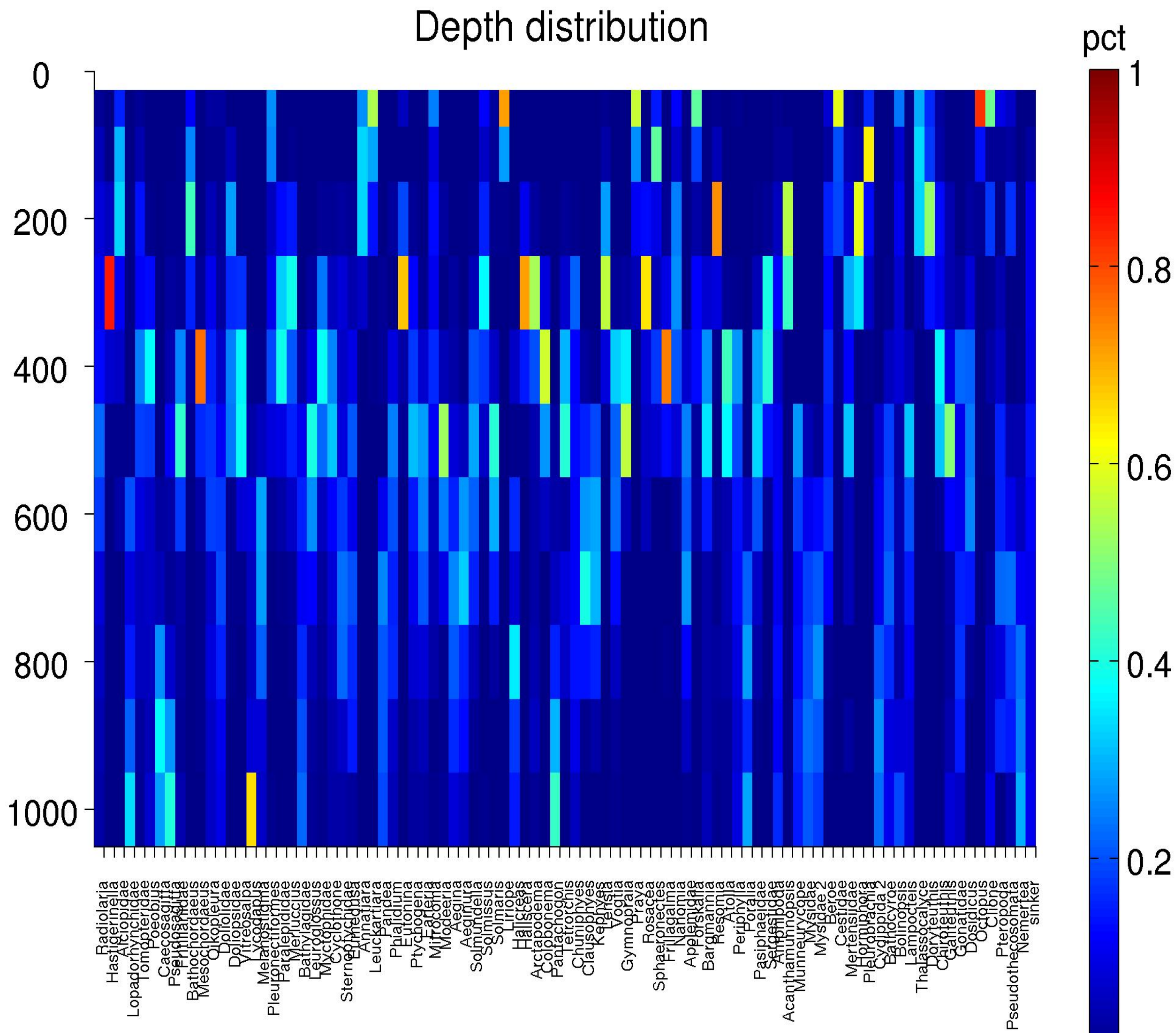






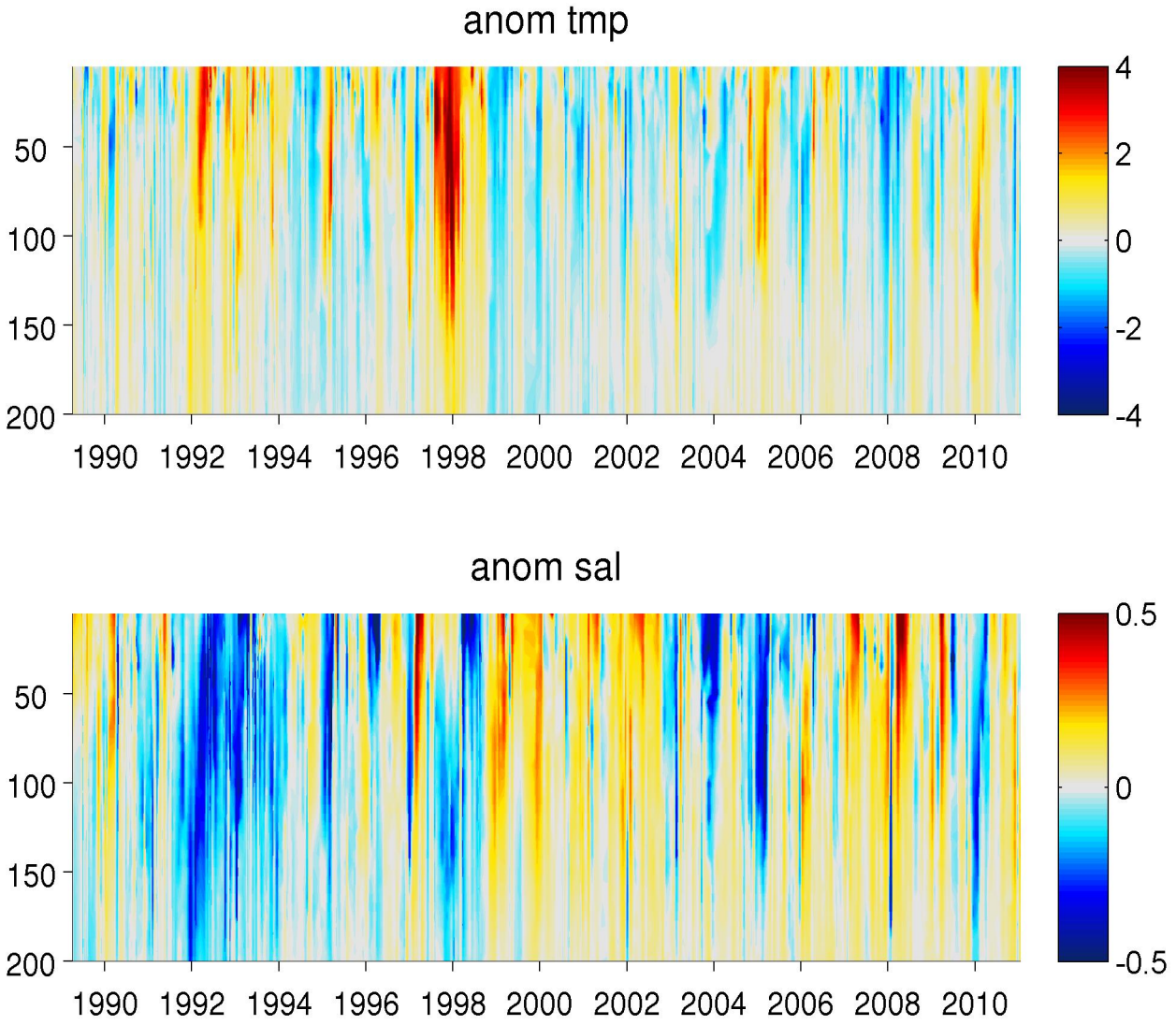
Highlevel (integrated) – log anomalies



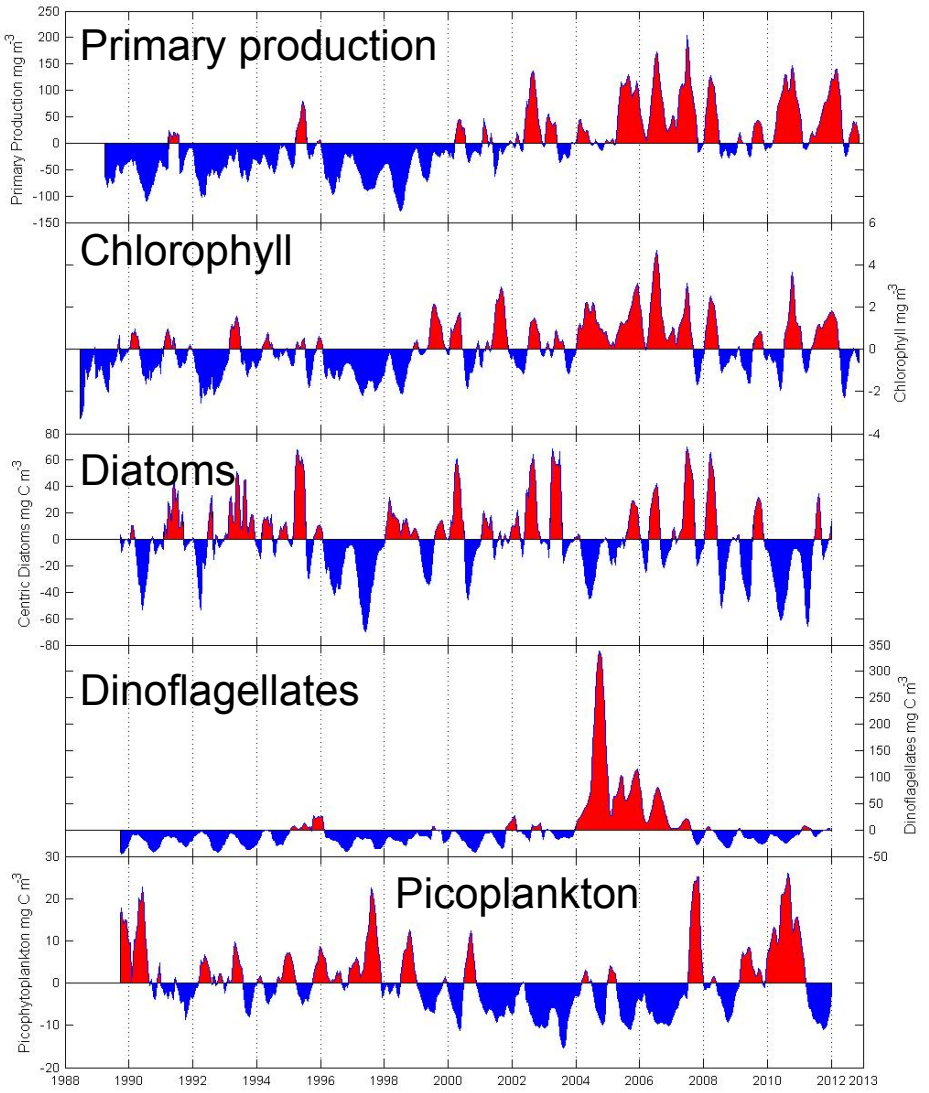


Depth distribution
pct
0
200
400
600
800
1000
1
0.8
0.6
0.4
0.2
0
Radiolaria
Hastigerinella
Arcitopidae
Lopadorhynchidae
Tomopteridae
Poeobius
Caecosagitta
Pseudosagitta
Bathochordaeus
Mesochordaeus
Oikopleura
Doliolidae
Dolioposidae
Vitreosalpa
Lycodapus
Melanostigma
Pleuronectiformes
Paralepididae
Merluccius
Bathylagidae
Leuroglossus
Myctophidae
Cyclothone
Sternoptychidae
Annatiara
Leuckartiara
Pandea
Phialidium
Eutonina
Ptychogena
Earleria
Mitrocoma
Modeeria
Aegina
Aeginura
Solmundella
Solmissus
Solmaris
Liriope
Halicreas
Haliscera
Arctapodema
Colobonema
Pantachogon
Tetrorchis
Chuniphyes
Clausophyes
Kephyes
Lensia
Vogtia
Gymnopraia
Praya
Rosacea
Sphaeronectes
Frillagalma
Nanomia
Apolemidae
Forskalia
Bargmannia
Resomia
Atolla
Periphylla
Poralia
Pasiphaeidae
Sergestidae
Amphipoda
Acanthamunnopsis
Munneurycope
Mysidae
Mysidae 2
Beroe
Cestidae
Mertensiidae
Hormiphora
Pleurobrachia
Cydippida 2
Bathocyroe
Bolinopsis
Lampocteis
Thalassocalyce
Doryteuthis
Chiroteuthis
Galiteuthis
Gonatidae
Dosidicus
Octopus
Clione
Pteropoda
Pseudothecosomata
Nemertea
sinker

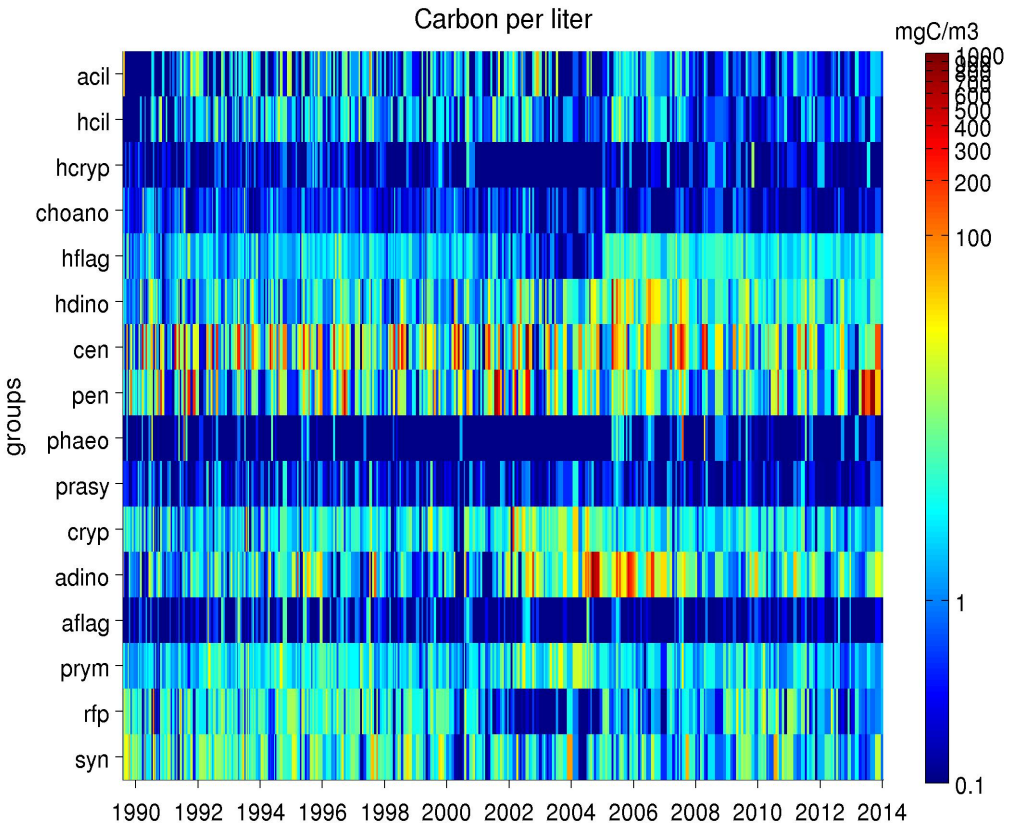
Temperature & salinity @M1



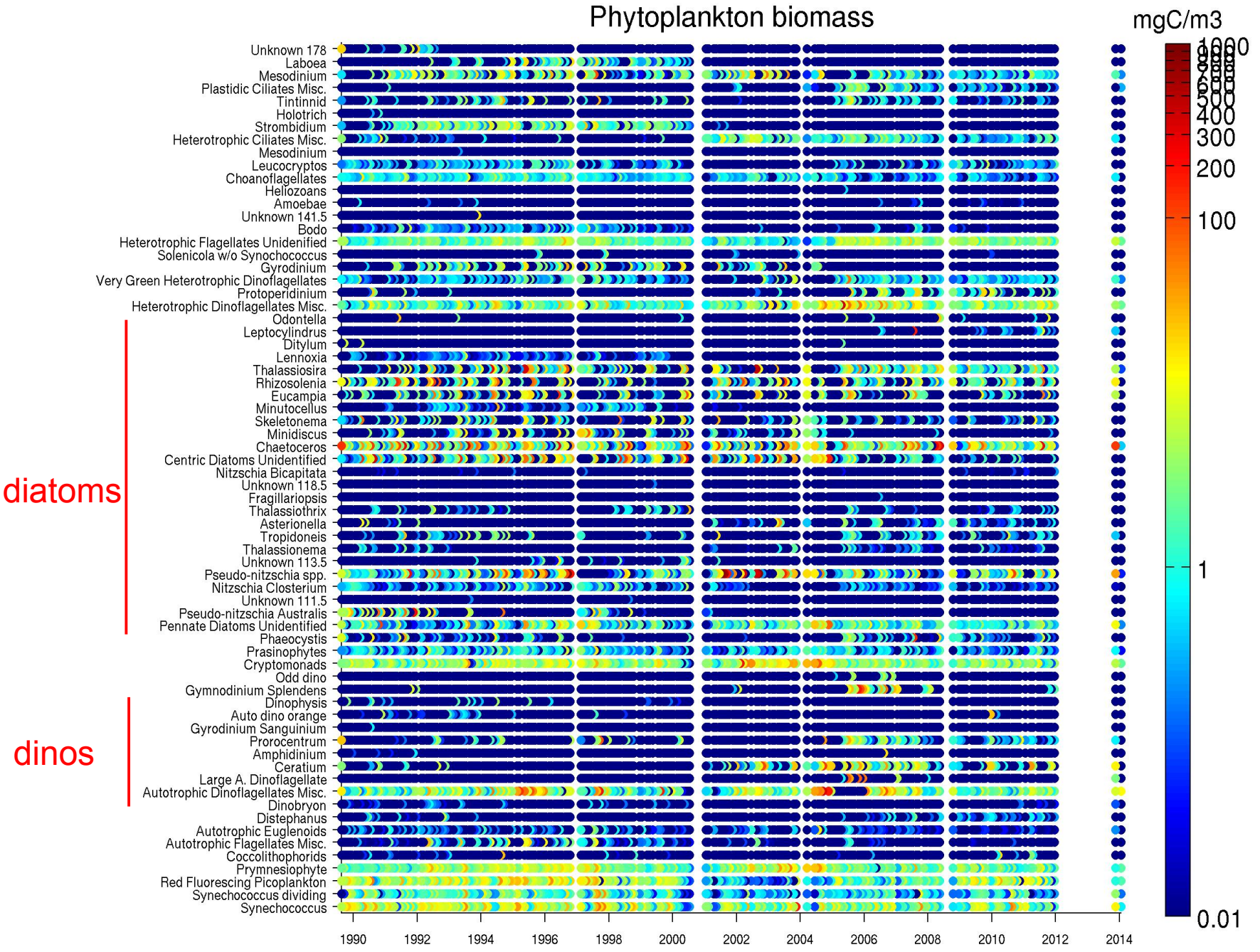
Surface time series – high levels



All phytoplankton groups biomass



Surface time series - detailed



diatoms

dinos