SMHI
Oceanographic Unit
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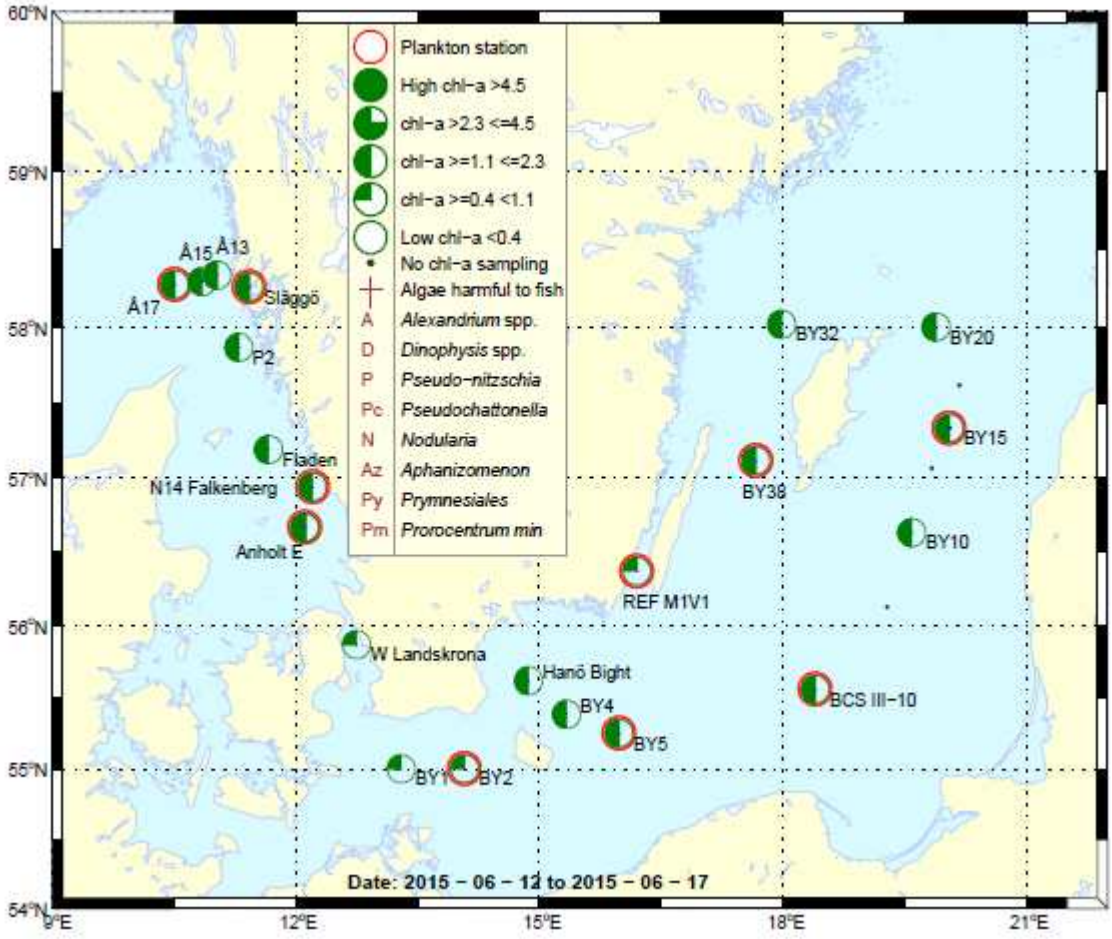
AlgAware

ALGAL SITUATION IN MARINE WATERS SURROUNDING SWEDEN

Sammanfattning
I Skagerrak dominerades planktonsamhället av stora dinoflagellater från släktet *Ceratium* och i Kattegat var det kiselalgen *Phaeodactylum tricornatum* som var flest till antal.
Östersjön var framförallt dominerat av cyanobakterien *Aphanizomenon flos-aquae* och dinoflagellaten *Dinophysis norvegica* men även av en liten unicell som var mycket vanlig i stora delar av Östersjön.
De integrerade (0-20 m) klorofyll a värdena var normala för månaden vid alla stationer som besöktes.



Abstract
The stations at Skagerrak were dominated by large cells from the dinoflagellate genus *Ceratium. The* phytoplankton community in the Kattegat was dominated by the diatom *Phaeodactylum tricornatum.* The cyanobacterial species *Aphanizomenon flos-aquae* and the dinoflagellate *Dinophysis norvegica* were common in the Baltic Sea and a small (1 µm) unicell was common in all parts of the Baltic Sea visited.
The integrated (0-10 m) chlorophyll *a* concentrations were normal for this month.

More detailed information on species composition and abundance

The Skagerrak

Å17 (open Skagerrak) and Släggö (Skagerrak coast) 15th of June

There were a few large cells from the dinoflagellate genus *Ceratium* (Fig 1, left) present in the Skagerrak. At Släggö there was in addition some diatoms present in small amounts e.g. *Cerataulina pelagica, Skeletonema marinoi, Guinardia delicatula* and *Thalassionema nitzschoides* (Fig 1). During the expedition a fluorescence peak was found at Å15 at 15m depth and the phytoplankton genus responsible for that was most likely the dinoflagellate genus *Ceratium* (Fig 2)
The integrated (0-10m) chlorophyll *a* concentrations were normal for this month.

Fig.1 *Ceratium macroceros* (left) and *Thalassionema nitzschioides* (right) were present at Släggö in The Skagerrak.

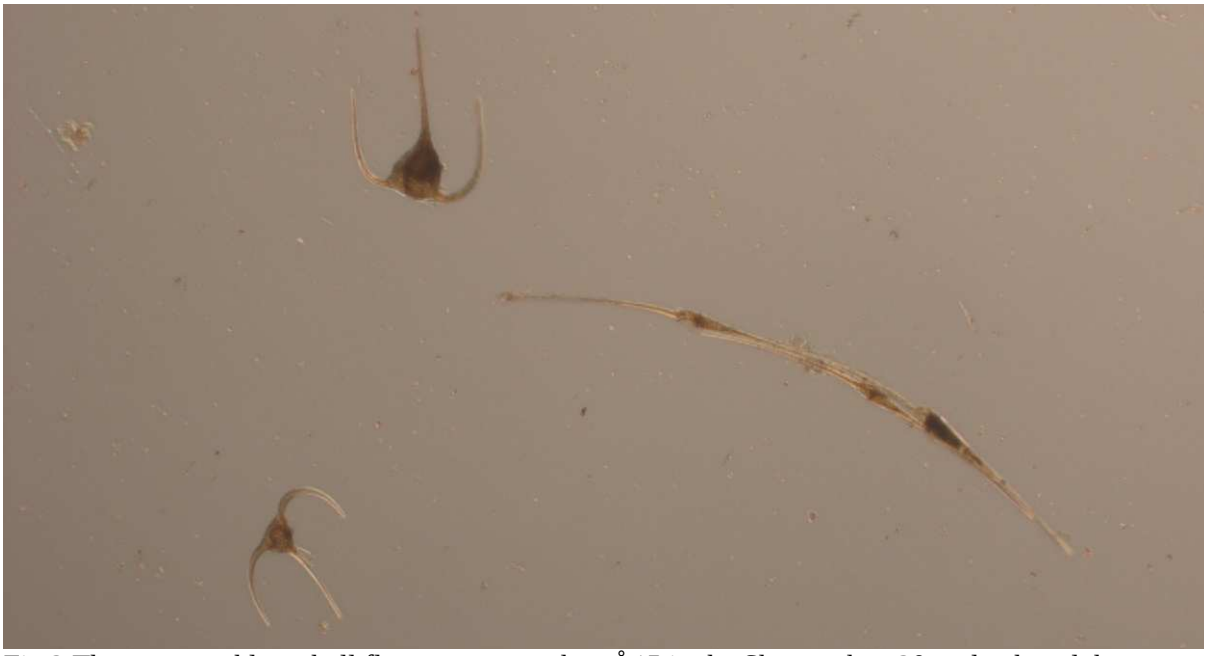


Fig.2 There was a chlorophyll fluorescence peak at Å15 in the Skagerrak at 20 m depth and the phytoplankton genus responsible for that was the dinoflagellate genus *Ceratium*.

The Kattegat

N14 Falkenberg and Anholt E 14th of June and Anholt E 15th of June
In the Kattegat all stations were dominated by the diatom species *Phaeodactylum tricornatum* (Fig 3). There were also large dinoflagellates from the genus *Ceratium* and small amounts of the diatom species *Skeletonema marinoi.*
The integrated (0-10m) chlorophyll *a* concentrations were low at all stations and are normal for this month.

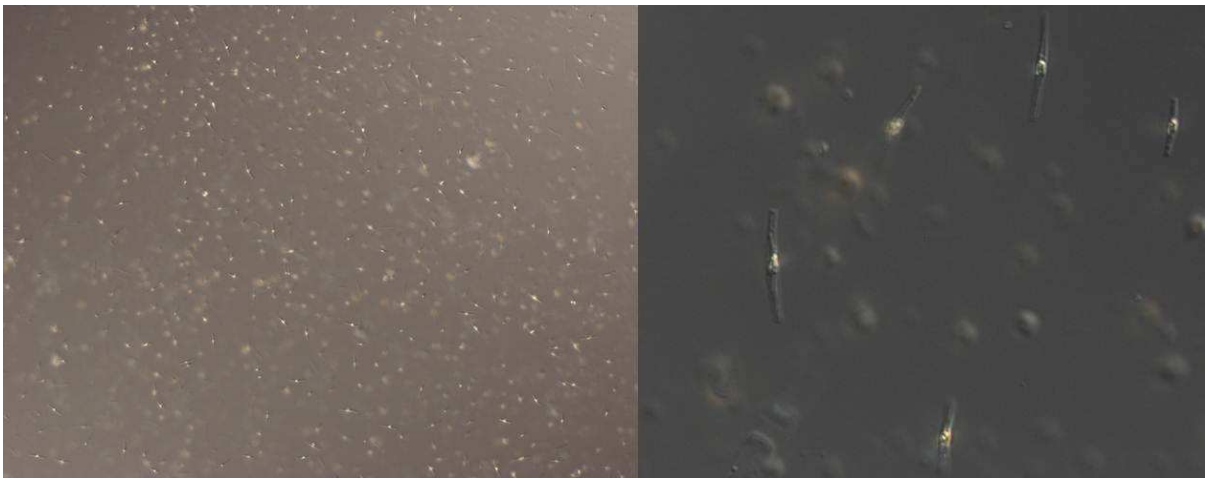


Fig.3 The diatom species *Phaeodactylum tricornatum* was dominating the phytoplankton community in The Kattegat.

The Baltic Sea

The Southern Baltic Sea

BY2 Arkona Basin and BY5 Bornholm Basin 13th of June
The phytoplankton community in southern part of the Baltic Sea was dominated by a small (1 µm) unicell. Furthermore, *Aphanizomenon flos-aquae* and *Planctonema lauterbornii* were very common and a few cells of *Dinophysis norvegica.*
The integrated (0-10 m) chlorophyll *a* concentrations were low but within normal for this month.

The samples taken from the fluorescence peaks at 20m depth at BY4 and Hanö Bight, and 18m at BY5 were generally dominated by cyanobacterial colonies and especially cf. *Lemmermaniella* spp. was very common (Fig 4).

Fig.4 Cyanobacterial colonies in general and cf. *Lemmermaniella* spp. in particular dominated the samples taken from at fluorescence peaks found at 20m depth at BY4 and 18m at BY5.

The Eastern Gotland Basin

BCS III-10 13th of June and BY15 12th of June
The eastern part of the Baltic Sea had similar species diversity as in the southern part of the Baltic Sea. The most common species were *Aphanizomenon flos-aquae, Dinophysis norvegica* and *Planctonema lauterbornii*. In addition *Thalassiosira angulata* was present at BY15 and the community at BCS III was dominated by small (1 µm) unicells.
The chlorophyll *a* concentrations were low and within normal values for this month.

The Western Baltic Sea

BY38 17th of June
The species composition at the Karlsö Deep (Fig 5) was similar to other parts of the Baltic Sea during this expedition but with a much more dens population of the dinoflagellate *Dinophysis norvegica* and the filamentous cyanobacteria *Aphanizomenon flos-aquae*.

REF M1V1 16th of June
Close to the southwest coast of Öland the dinoflagellates *Heterocapsa triquetra* and *Dinophysis norvegica* were numerous and dominated the phytoplankton community. The small (1 µm) unicell that was common in the eastern part of the Baltic Sea was very common at this station and at BY38.

The integrated (0-10 m) chlorophyll *a* concentrations in the Western Baltic Sea were low and normal for this month.

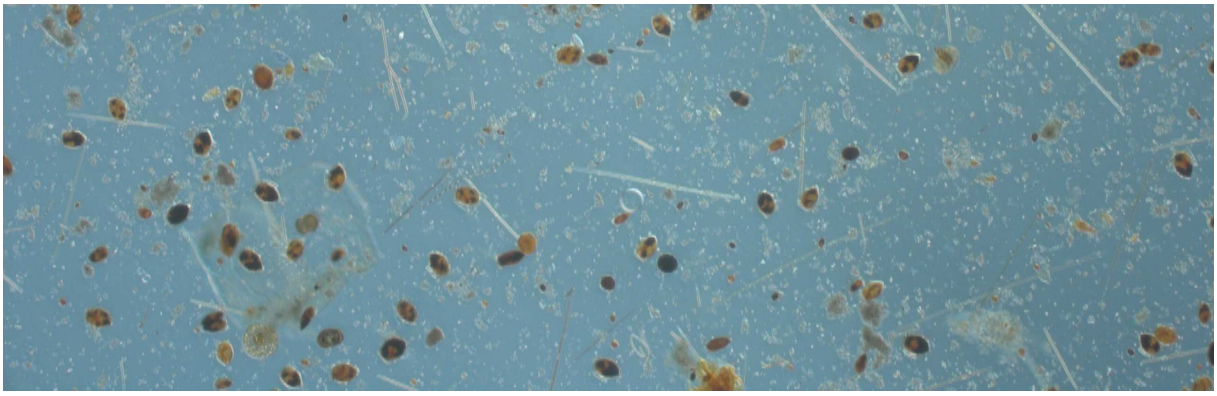
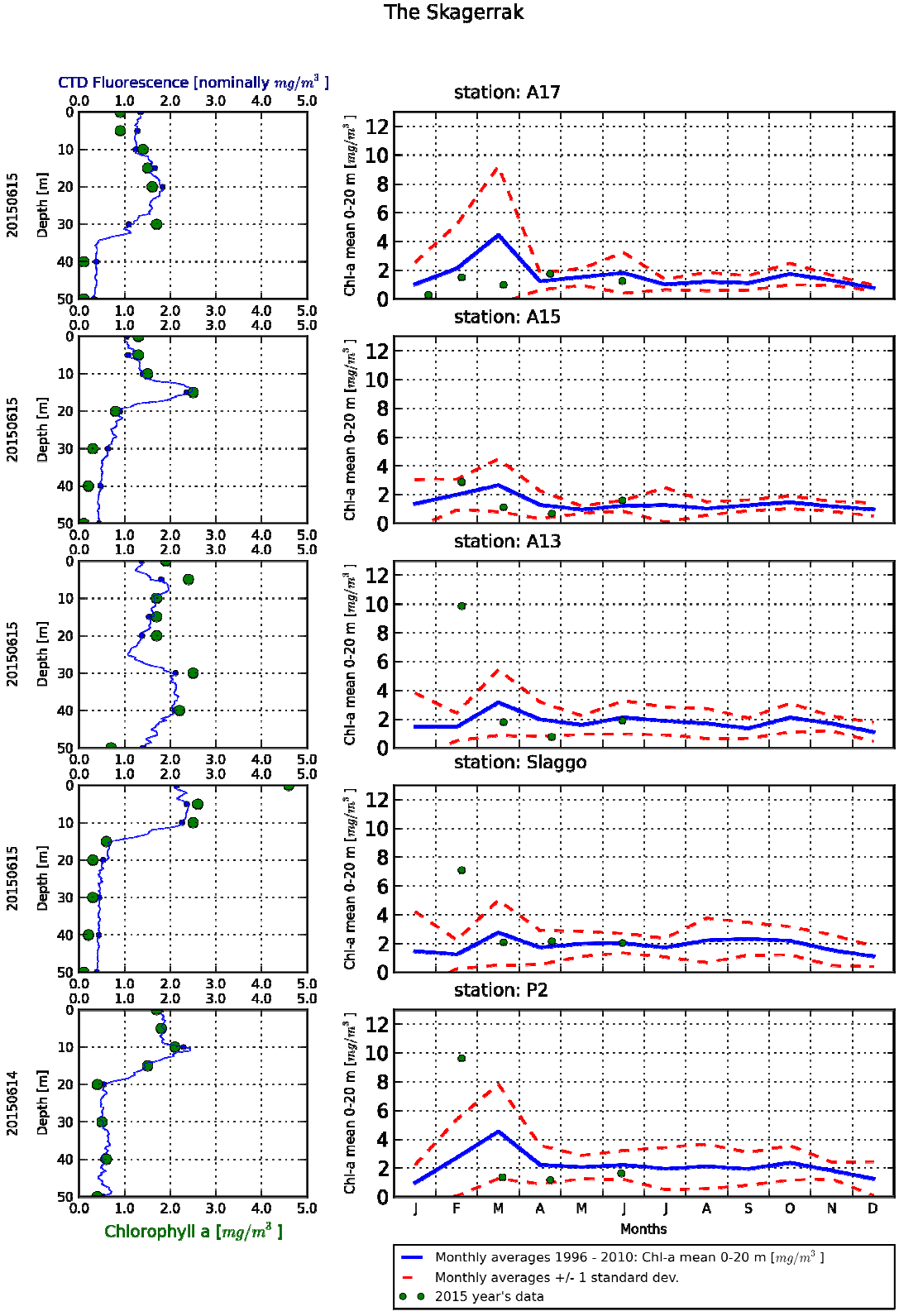


Fig.5. The phytoplankton community at the Karlsö Deep BY38 in June 2015.

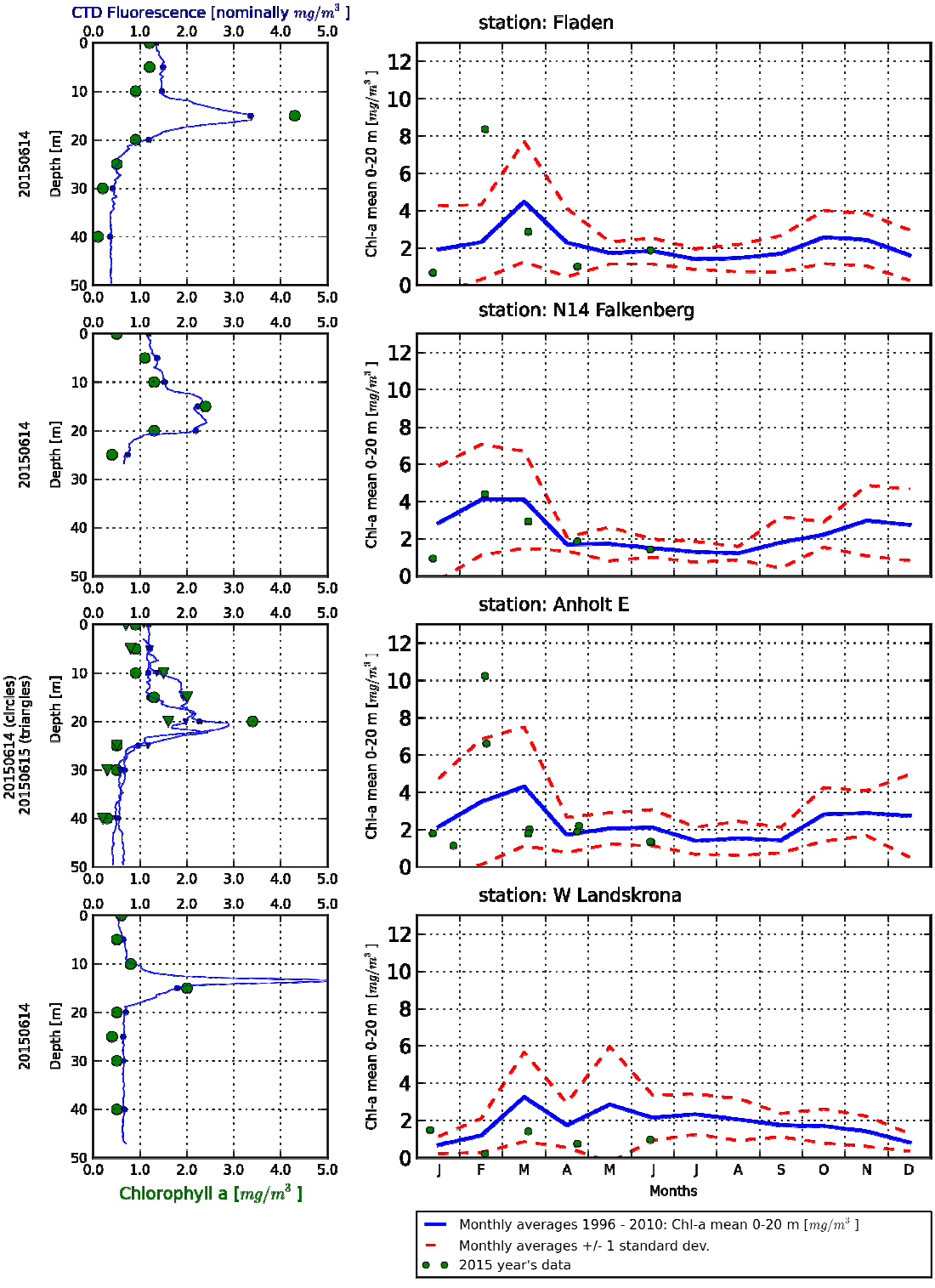
Phytoplankton analysis and text by:
Malin Mohlin

Selection of observed species	Anholt E	Anholt E	N14 Falkenberg	Släggö	Å17
Red=potentially toxic species	2015-06-14	2015-06-15	2015-06-14	2015-06-15	2015-06-15
Hose 0-10 m	presence	presence	presence	presence	presence
Cerataulina pelagica		common		present	
Coscinodiscus radiatus	present	present	present	present	
Ditylum brightwellii			present		
Guinardia delicatula				present	
Phaeodactylum tricornutum	very common		very common		
Proboscia alata		present		present	present
Pseudo-nitzschia spp			present	present	
Rhizosolenia hebetata	present		present		
Skeletonema marinoi	common		common	present	
Thalassionema nitzschioides				present	
Ceratium fusus	present	common	present	present	present
Ceratium lineatum	common	common	present	present	
Ceratium longipes	present	common			present
Ceratium macroceros		present		present	
Ceratium tripos	present	common		present	present
Dinophysis norvegica		present	present	present	present
Gymnodiniales			present	present	
Peridiniales	present				
Protoperidinium depressum				present	
Protoperidinium pellucidum		present			
Protoperidinium spp		present		present	
Ebria tripartita				present	
Pterosperma spp					present
Cryptomonadales				present	

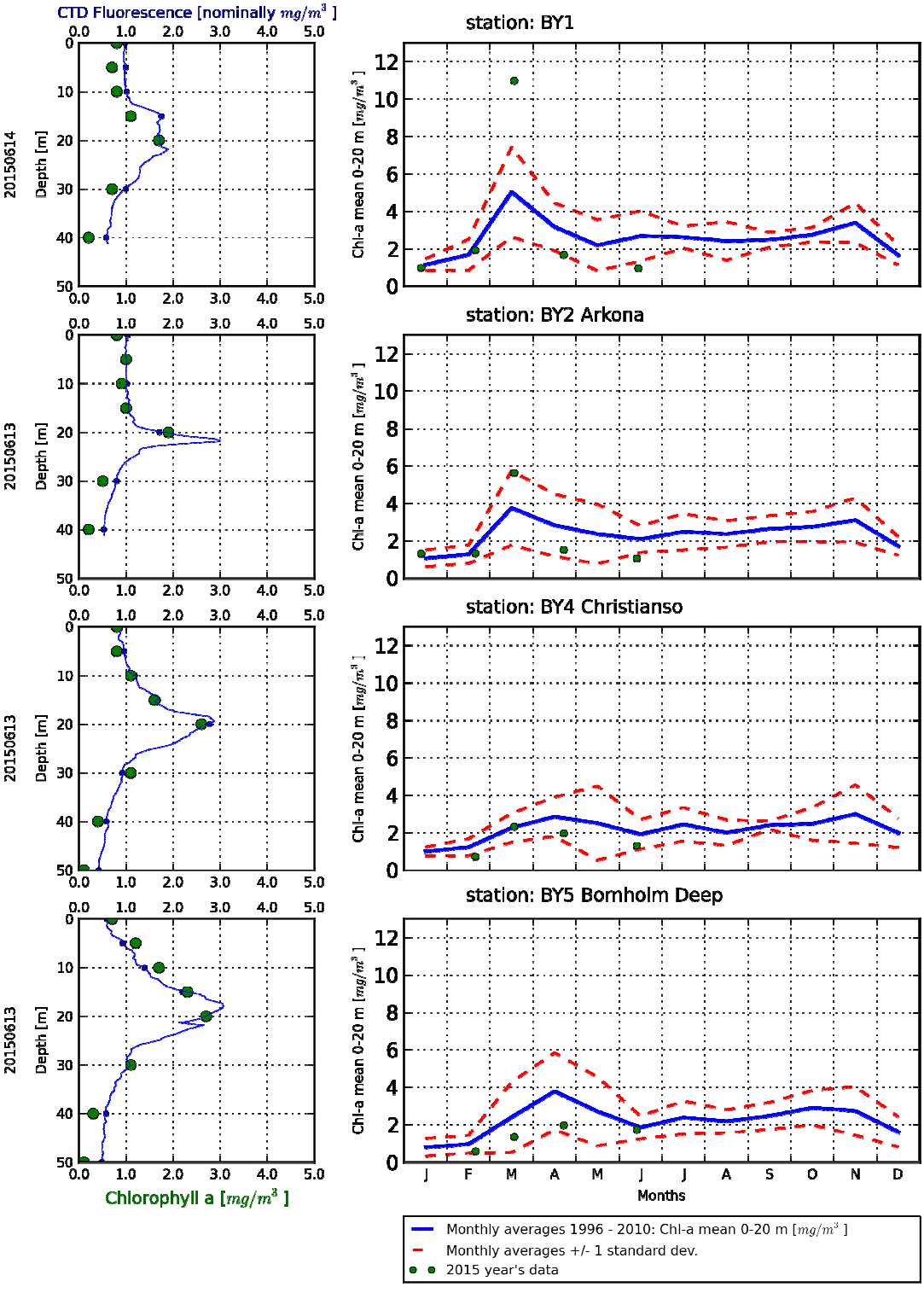
Selection of observed species	BCS III-10	BY2 Arkona	BY5 Bornholmsdj	BY15 Gotlandsdj	BY38 Karlsödj	REF M1-V1
Red=potentially toxic species	2015-06-13	2015-06-13	2015-06-13	2015-06-12	2015-06-17	2015-06-16
Hose 0-present0 m	presence	presence	presence	presence	presence	presence
Actinocyclus spp	present			present	present	present
Chaetoceros impressus		present				
Skeletonema marinoi						present
Thalassiosira spp		present	present		present	
Thalassiosira angulata				present		
Dinophysis acuminata	present				common	present
Dinophysis norvegica	very common		present	very common	very common	common
Dinophysis rotundata	present			present	present	
Gymnodiniales		present	present	present	present	present
Heterocapsa triquetra					common	very common
Katodinium glaucum				present		
Peridiniales	present			present	present	present
Peridiniella danica	present	present	present	present	present	
Protoceratium reticulatum				present	present	
Protoperidinium						present
Protoperidinium brevipes				present		present
Anabaena spp						present
Aphanizomenon flos-aquae	very common	very common	very common	very common	very common	present
Aphanocapsa spp		present	present	present		
Aphanothece spp	present	present	present	present		
Cyanodictyon spp	present	present	present	present		
Snowella spp	present	present	present			present
Woronichinia spp	present	present	present			present
Pseudopedinella spp	present					
Ebria tripartita	present	present	present			
Eutreptiella			present			
Oocystis spp		present	present	present	present	
Planctonema lauterbornii	common	common	present	present	common	
Prymnesiales	common	present		present		
Cryptomonadales	present	present	present			
Ciliophora						present
Mesodinium rubrum	present					present
Unicell	very common		very common		very common	very common

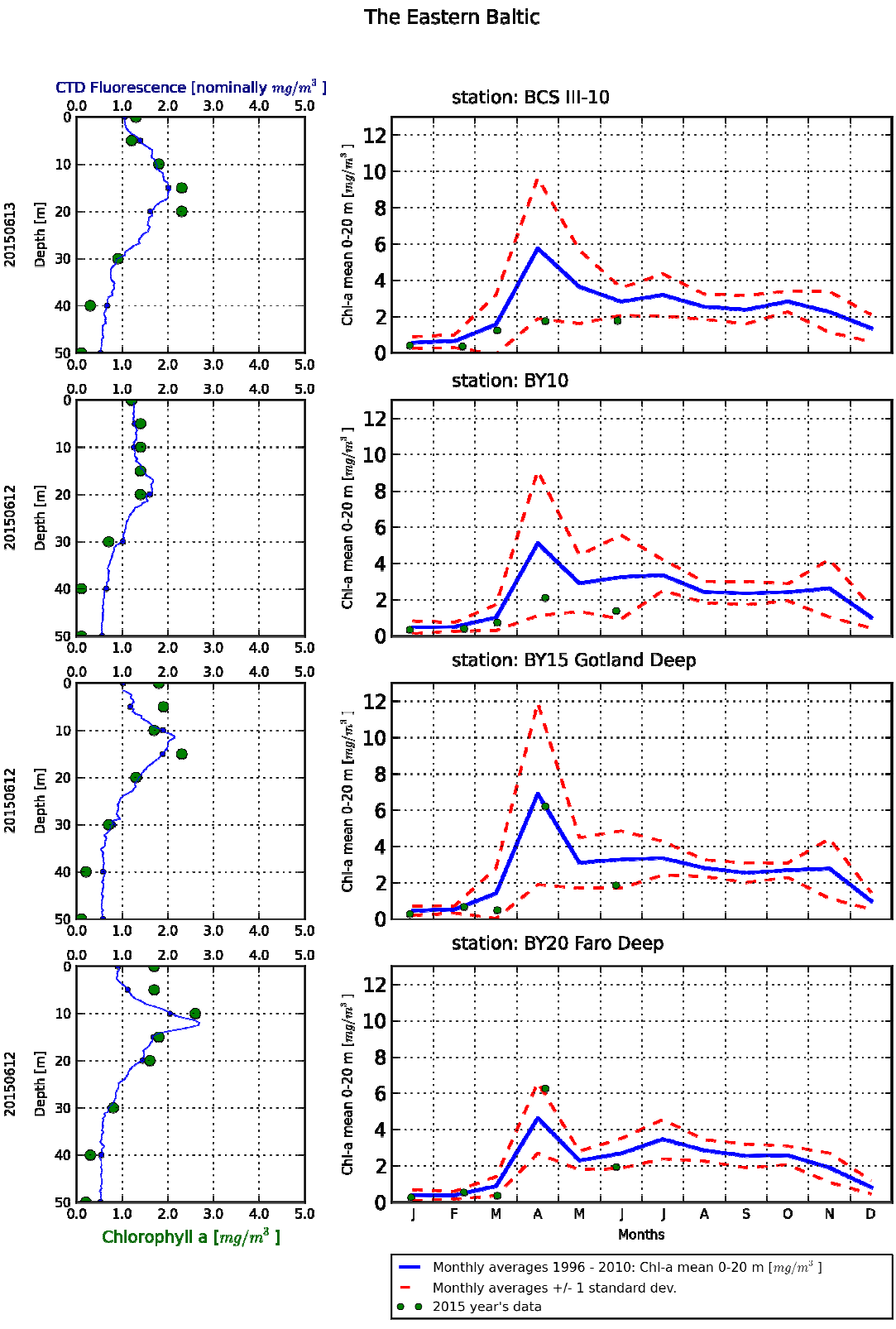

The Skagerrak
CTD Fluorescence [nominally mg/m^3]
station: A17
station: A15
station: A13
station: Slaggo
station: P2
20150615
20150614
Depth [m]
Chl-a mean 0-20 m [mg/m^3]
Chlorophyll a [mg/m^3]
J F M A M J J A S O N D
Months
Monthly averages 1996 - 2010: Chl-a mean 0-20 m [mg/m^3]
Monthly averages +/- 1 standard dev.
2015 year's data

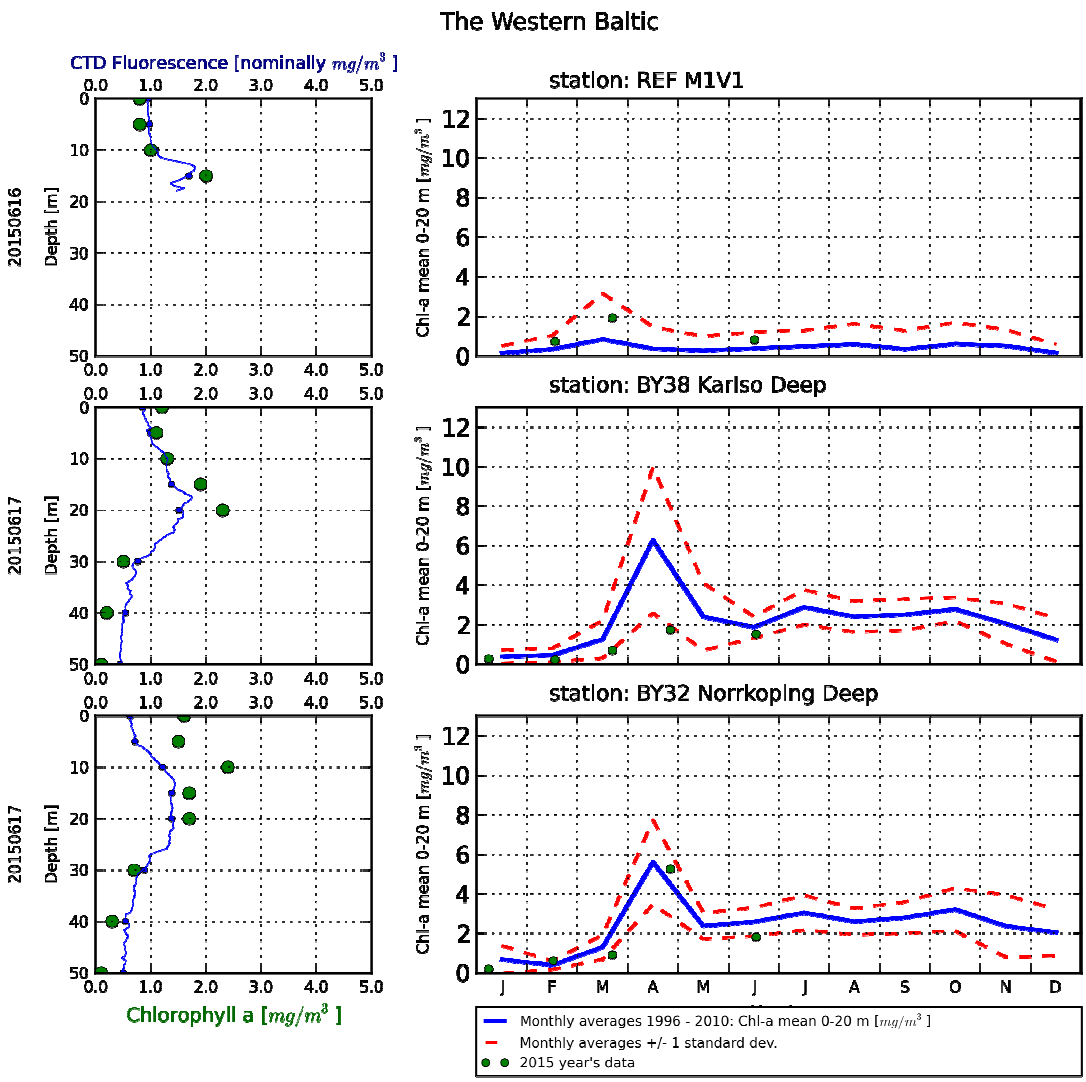
The Kattegat and The Sound



The Southern Baltic




The Eastern Baltic
CTD Fluorescence [nominally mg/m^3]
20150613
20150612
20150612
20150612
Depth [m]
Chlorophyll a [mg/m^3]
station: BCS III-10
station: BY10
station: BY15 Gotland Deep
station: BY20 Faro Deep
Chl-a mean 0-20 m [mg/m^3]
J F M A M J J A S O N D
Months
Monthly averages 1996 - 2010: Chl-a mean 0-20 m [mg/m^3]
Monthly averages +/- 1 standard dev.
2015 year's data


The Western Baltic
CTD Fluorescence [nominally mg/m^3]
20150616
20150617
20150617
Depth [m]
Chlorophyll a [mg/m^3]
station: REF M1V1
station: BY38 Karlso Deep
station: BY32 Norrkoping Deep
Chl-a mean 0-20 m [mg/m^3]
J F M A M J J A S O N D
Monthly averages 1996 - 2010: Chl-a mean 0-20 m [mg/m^3]
Monthly averages +/- 1 standard dev.
2015 year's data