SMHI
Oceanographic Unit
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AlgAware
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ALGAL SITUATION IN
MARINE WATERS SURROUNDING SWEDEN

Sammanfattning
Stationerna i Västerhavet varierade kraftigt i både artrikedom samt totala cellantal. vid den yttersta stationen i Skagerak, Å17, återfanns få celler och nästan enbart små celler. Vid övriga stationer var både diversiteten samt antal celler högre och kiselalger dominerade. Framför allt var *Thalassionema nitzschioides* samt *Skeletonema marinoi* vanlig. Släktet Chaetoceros var också vanligt och speciellt dominant i de fluorescenstoppar som återfanns i Västerhavet.

Diversiteten och cellantalen av växtplankton varierade kraftigt i Östersjön. Den kedjebildande kiselalgen *S. marinoi*, som är vanlig under vårblomningen, påträffades vid de flesta stationer och var mycket vanlig i flera prover. Särskilt vid station BY15 uppmättes höga cellantal av *S. marinoi*, där arten utgjorde en stor del av det totala växtplanktonsamhället. Även dinoflagellaten *Peridiniella catenata*, som också är typisk för vårblomningen i Östersjön, observerades vid de flesta stationer, dock i låga tätheter.

Abstract
The stations along the west coast were quite different regarding species diversity and total cell numbers. The outer most station, Å17, in Skagerrak had low cell numbers and mainly small cells were found. At the rest of the stations the cell numbers and biodiversity were higher and diatoms dominated. Two species that occurred in high cell numbers were *Thalassionema nitzschioides* and *Skeletonema marinoi.* The genus *Chaetoceros* was also common and especially dominant in the plenty full fluorescens maxima found along the coast.

The diversity and cell abundances of phytoplankton varied greatly in the Baltic Sea. The chain-forming diatom *S. marinoi*, commonly found during the spring bloom, was observed at most stations and was highly abundant in several samples. Particularly at station BY15, high cell counts of *S. marinoi* were recorded, where the species dominated the phytoplankton community. The dinoflagellate *Peridiniella catenata*, also characteristic of the spring bloom in the Baltic Sea, was observed at most stations as well, although in low abundances.

Chlorophyll diagrams and maps are not included in this report due to delays in the analysis.

Below follows a more detailed information on species composition and abundance. Species marked with * are potentially toxic or harmful.

The Skagerrak

Å17 (open Skagerrak) 12th of April
The total cell numbers and biodiversity were both low. Small cells dominated and especially different species of cryptomonads were common but some cells of for example *Emiliania huxleyi* and *Telonema subtile* were also present. Several fluorescence peaks between 10-20 meters were found along the Å-transect and mainly contained different diatoms especially the genus *Chaetoceros.* No data on chlorophyll available for presentations this month.

Släggö (Skagerrak coast) 12th of April
The total cell numbers and biodiversity were both relatively high. Diatoms dominated and *Thalassionema nitzschioides* were most abundant but *Skeletonema marinoi* and *Chaetoceros danicus* were also common. Among the smaller cells, different species of the genus *Dinobryon* were common together with different species belonging to Prymnesiales. A fluorescence peak at 30 meters was recorded and mainly contained different diatoms especially the genus *Chaetoceros*. No data on chlorophyll available for presentations this month.

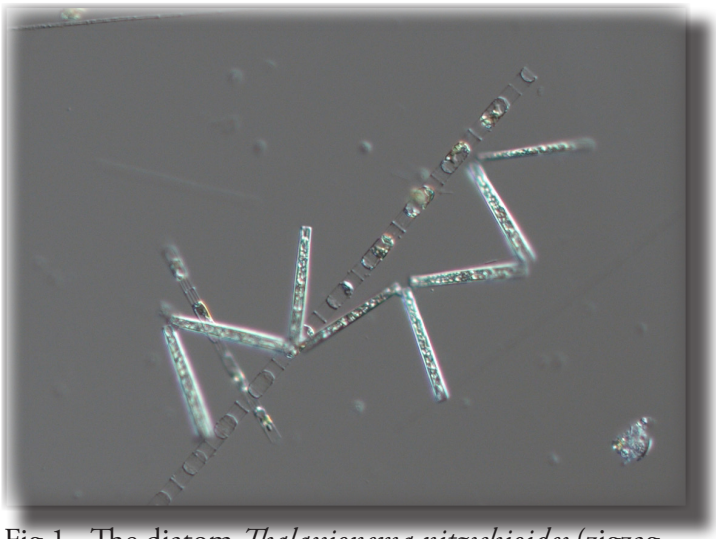


Fig 1. The diatom *Thalassionema nitzschioides* (zigzag chain) was very abundant at all stations along the west coast, except at Å17. Photo: M. Johansen.

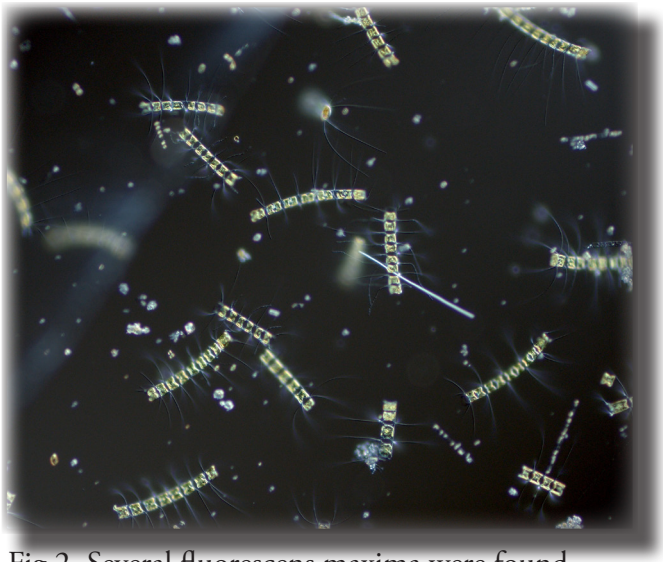


Fig 2. Several fluorescens maxima were found along the west coast and they mainly contained different species of the genus *Chaetoceros*.
Photo: M. Johansen.

The Kattegat

Anholt E 11th of April
The species diversity and cell numbers were relatively high with diatoms dominating. The diatom *S. marinoi* was found in highest cell numbers but *T. nitzschioides, C. danicus* and *C. curvisetus* were also common. The flagellate order Prymnesiales was quite common and also different cells belonging to the genus *Dinobryon*. A fluorescence peak at 15 meters was noted and mainly contained different diatoms especially the genus *Chaetoceros.* No data on chlorophyll available for presentations this month.

N14 Falkenberg 12th of April
The species diversity and cell numbers were relatively high with diatoms dominating. The diatom *S. marinoi* and *T. nitzschioides* were both found in highest cell numbers but *C. danicus* and *C. curvisetus* were also common. Among the smaller cells the Chrysophyceae *Ollicola vangoorii* was common so also the genus *Dinobryon*. A fluorescence peak at 15 meters was recorded and mainly contained different diatoms especially the genus *Chaetoceros.* No data on chlorophyll available for presentations this month.

The Baltic

BY39 7th of April
Phytoplankton diversity and abundances were moderate to high. The community mainly consisted of diatoms, with numerous chains of *S. marinoi* observed alongside several chains belonging to the genus *Chaetoceros*.

BY31 Landsort deep 8th of April
Phytoplankton diversity and total abundance were moderate. Diatoms dominated the community, with numerous chains of *S. marinoi* observed alongside chains from the genera *Chaetoceros* and *Thalassiosira*. The chain-forming dinoflagellate *Peridiniella catenata* was also common, along with the dinoflagellate species *Protoperidinium bipes*. Among the smaller phytoplankton, Cryptomonadales were the most abundant. The chlorophyll maximum at 40 meters depth was likewise dominated by *S. marinoi*.

BY38 8th of April
Phytoplankton diversity and abundances were very low, with the community consisting mainly of small cells such as Cryptomonadales and occasional chains of *S. marinoi*.

BY15 Gotland deep 9th of April
Phytoplankton diversity was low, but abundances were very high. The community was overwhelmingly dominated by *S. marinoi*.

BY2 Arkona 10th of April
Phytoplankton diversity and abundances were moderate to high. *S. marinoi* was the most abundant species, followed by small-sized taxa including various Cryptomonadales and colonies of the cyanobacterial genus *Lemmermanniella*.

BY5 Bornholm deep 10th of April
Phytoplankton diversity and abundances were moderate to low. The community was dominated by small cells, primarily various Cryptomonadales and *Eutreptiella* species, with only a few chains of *S. marinoi* observed.

BCSIII-10 10th of April
Phytoplankton diversity and abundances were low, with the community primarily composed of chain-forming diatoms such as *Pauliella taeniata* and *S. marinoi*.

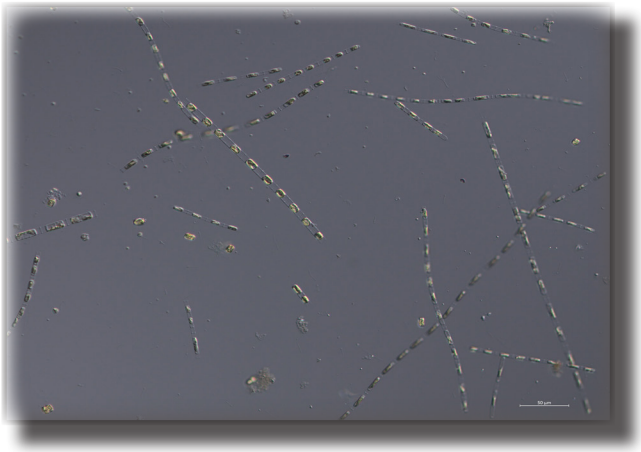


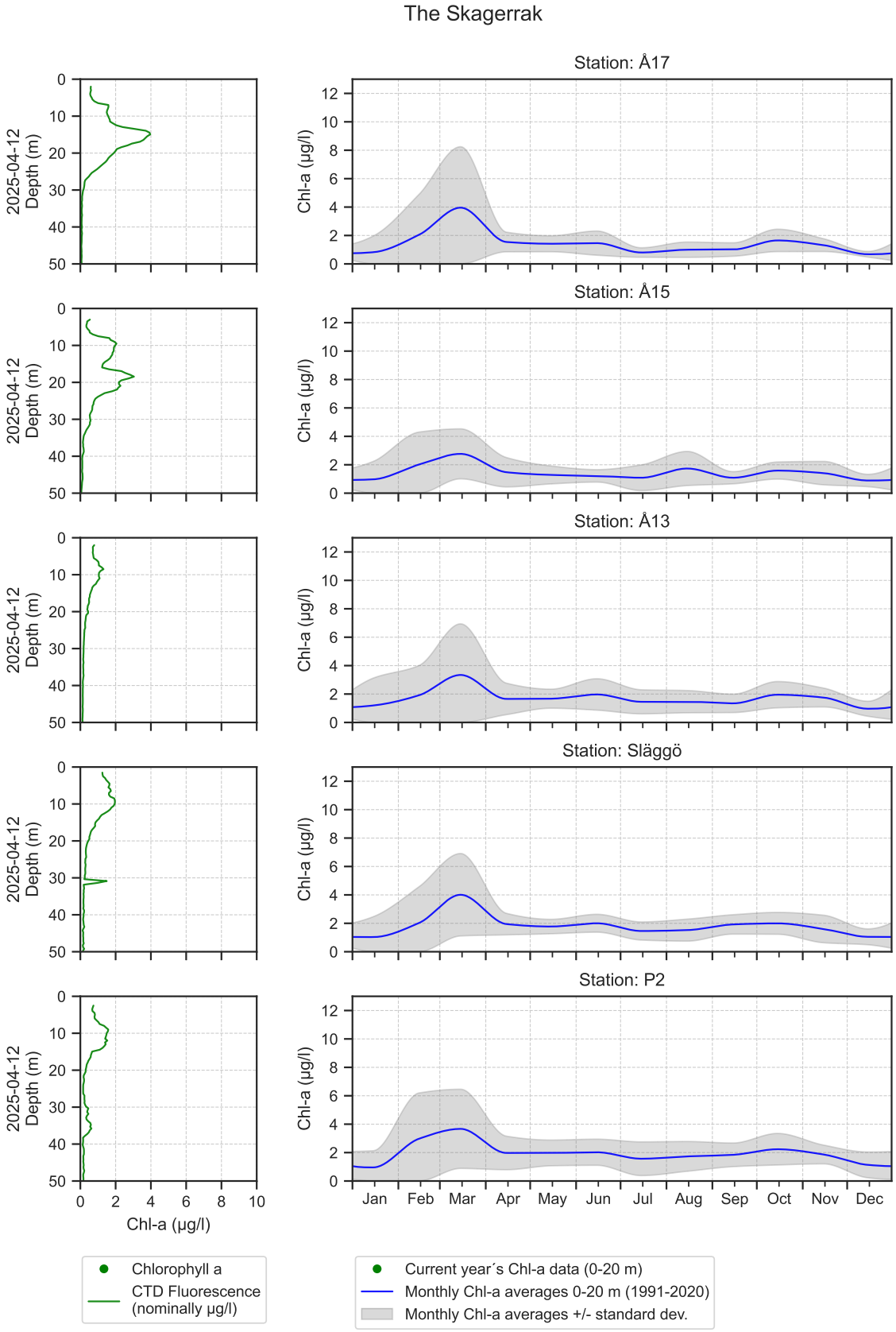
Fig 3. The chain forming diatom *Skeletonema marinoi* was the most abundant species in the Baltic Sea in April. Photo: A. Torstensson.

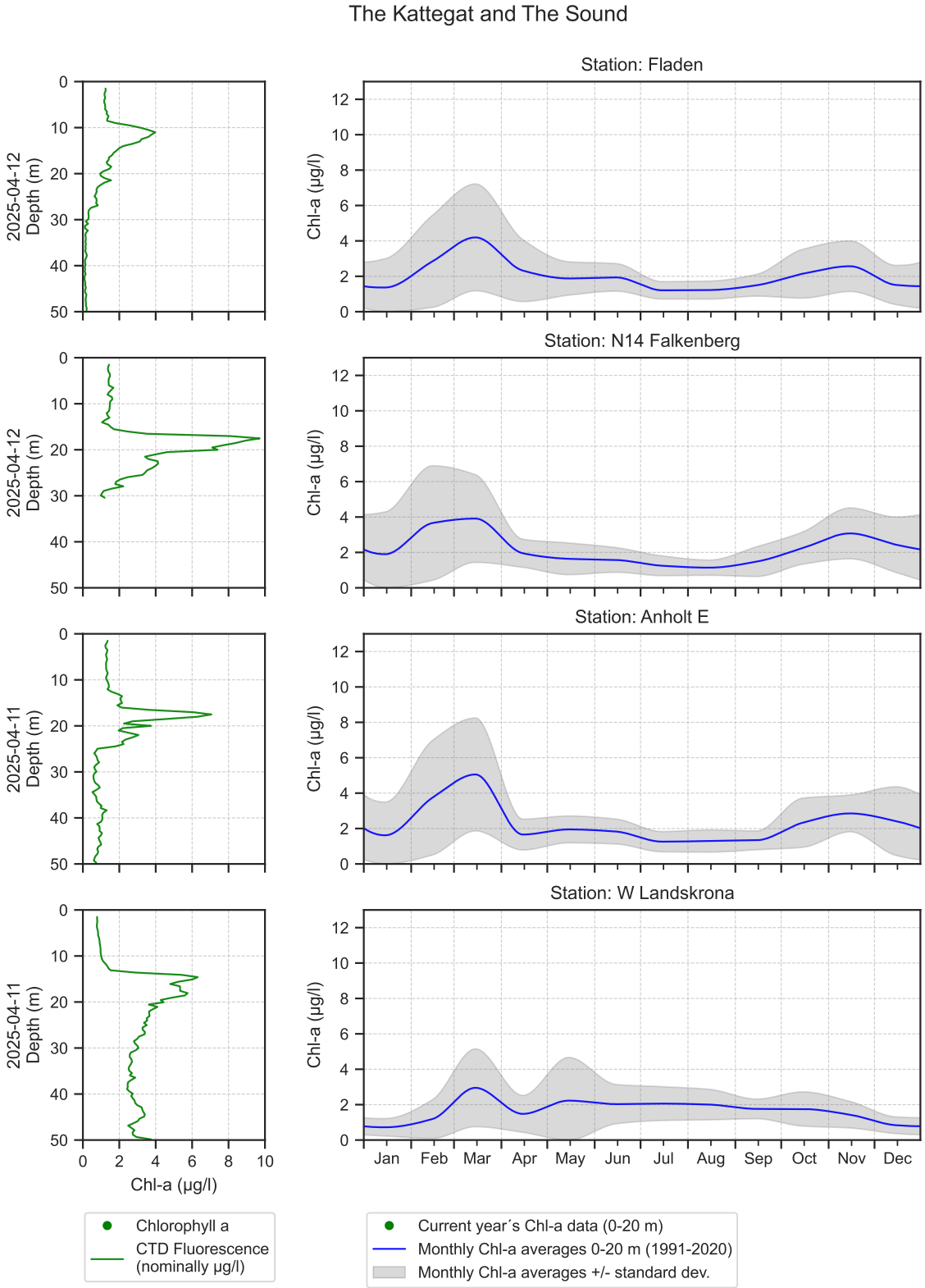
Fig 4. The chain forming diatom *Pauliella taeniata* was common at BCS-III-10. Photo: A. Torstensson.

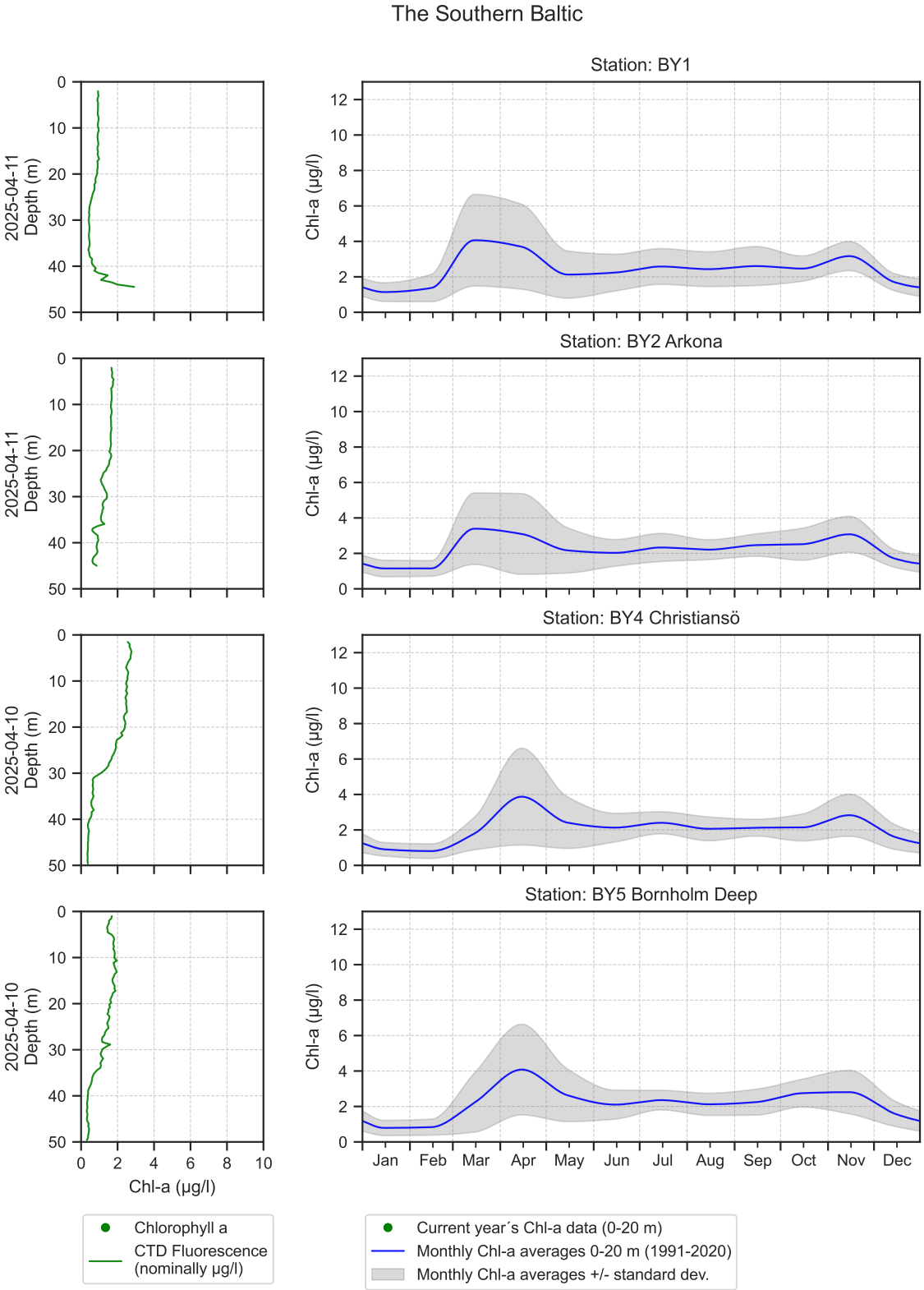
Phytoplankton analysis and text:
Marie Johansen and Anders Torstensson.

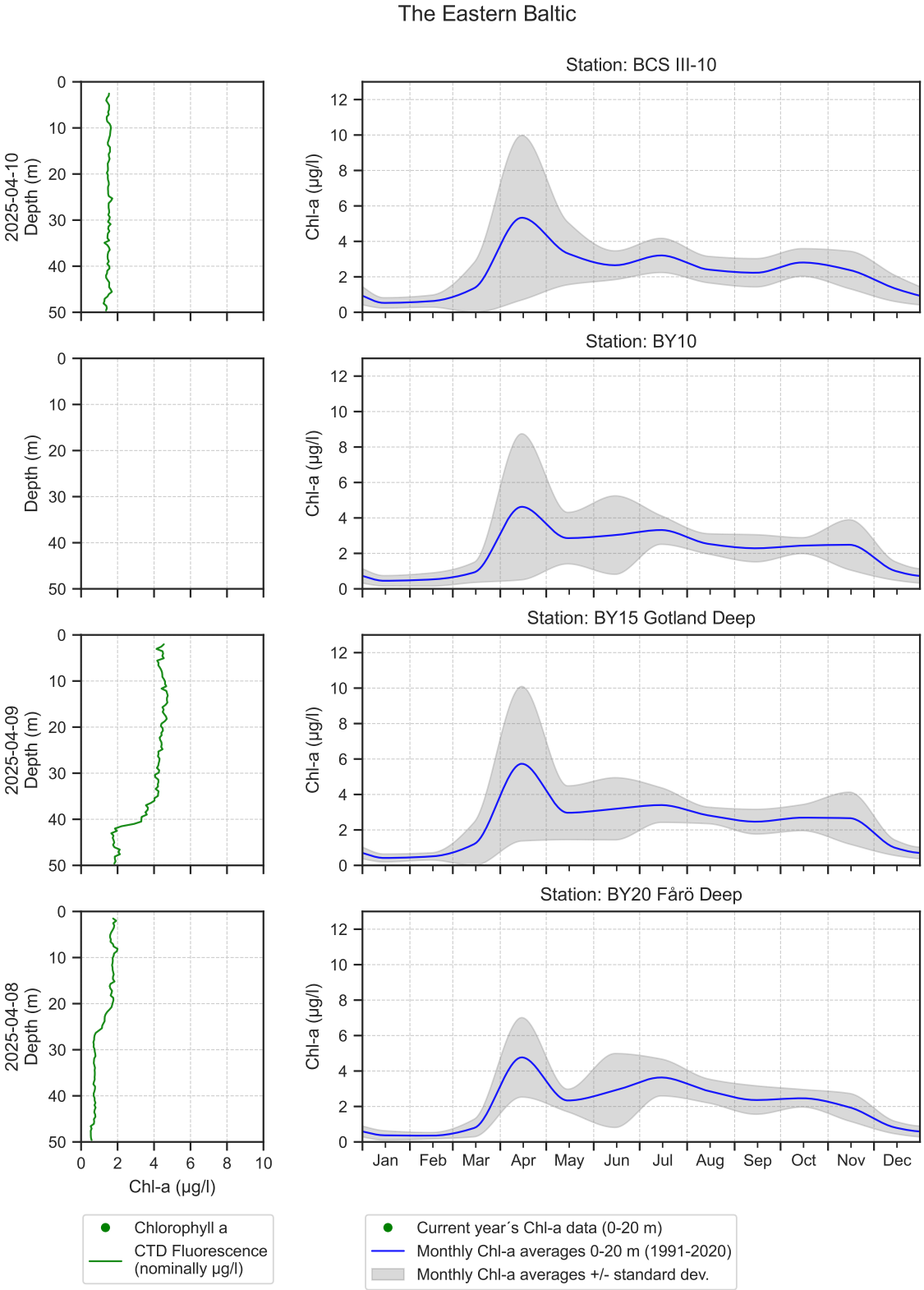
Selection of observed species	Anholt E	N14	Släggö	Å17
Red=potentially toxic species	11/4	12/4	12/4	12/4
Hose 0-10 m	presence	presence	presence	presence
Cerataulina pelagica	present			
Chaetoceros	present	common	present	
Chaetoceros curvisetus	present	common	present	
Chaetoceros danicus	common	common	common	present
Dactyliosolen fragilissimus	present	present	common	
Ditylum brightwellii	present			
Guinardia delicatula			present	
Guinardia flaccida		present	present	
Nitzschia longissima		present	present	
Proboscia alata	present	present	present	
Pseudo-nitzschia	present			
Rhizosolenia hebetata f. semispina	present	present	present	
Rhizosolenia setigera	present	present		
Skeletonema marinoi	very common	very common	common	present
Thalassionema nitzschioides	common	very common	very common	present
Thalassiosira		present		
Thalassiosira anguste-lineata	present			
Dinophysis norvegica	present		present	
Gymnodiniales	present		present	present
Gyrodinium spirale		present		
Heterocapsa rotundata		present		present
Peridiniales	present	present	present	present
Peridiniella danica	present			
Prorocentrum cf. balticum				present
Protoperidinium pellucidum		present	present	
Tripos fusus	present			
Tripos lineatus			present	
Tripos muelleri	present	present		present
Dinobryon	common	present	common	
Dinobryon balticum	present	common	present	
Dinobryon faculiferum	present	present	present	present
Ollicola vangoorii	present	common		
Emiliania huxleyi			present	common
Prymnesiales	present		common	present
Pyramimonas		present	present	present
Cryptomonadales	present	present	present	very common
Leucocryptos marina	present			
Telonema subtile	present			common
Pseudochattonella	present		present	
Calliacantha natans			present	
Choanoflagellatea		present	present	
Ebria tripartita		present		
Ciliophora	present	present	present	common
Mesodinium rubrum		present		
Laboea strobila		present	present	
Tintinnidae			present	

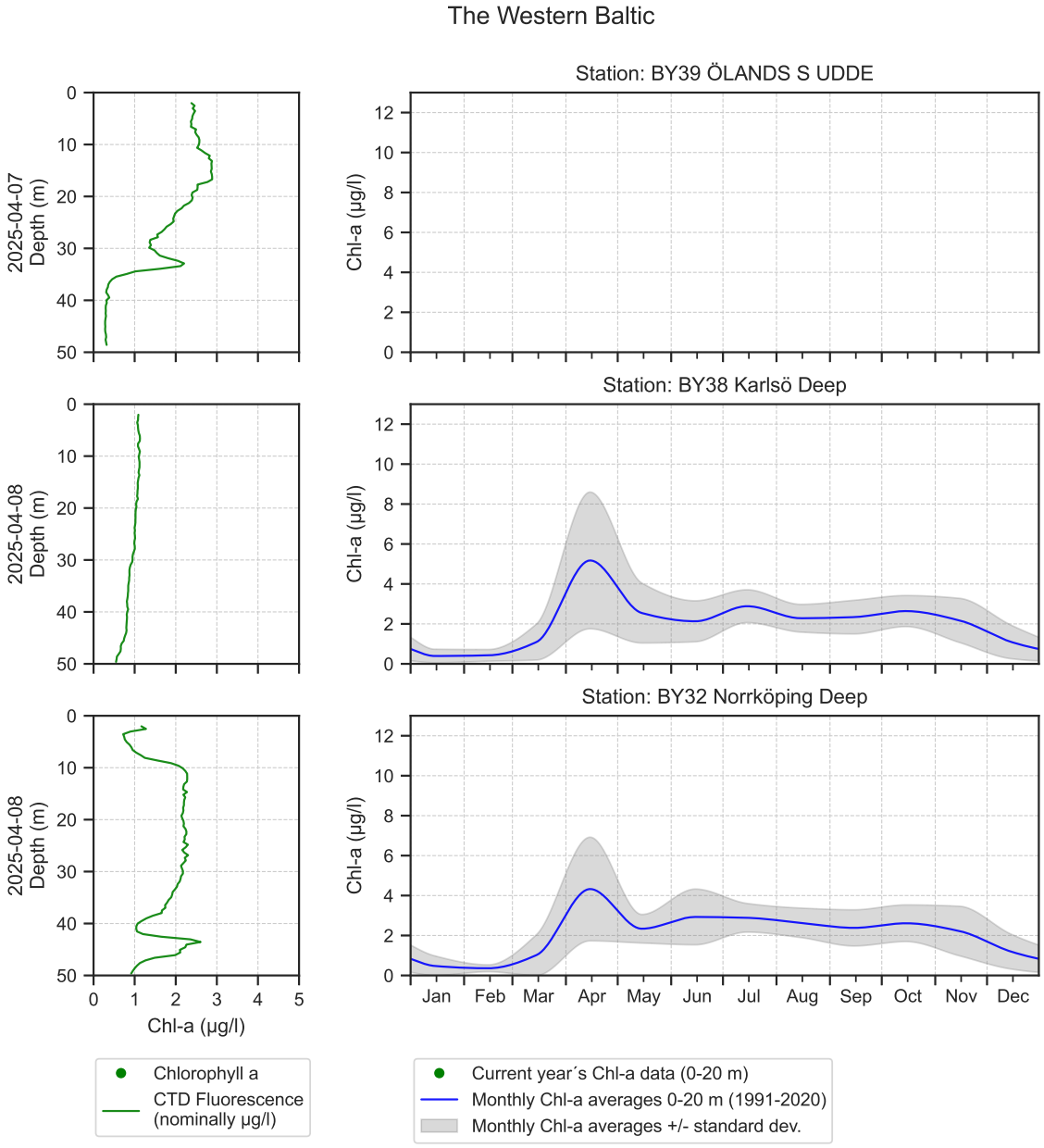
Selection of observed species	BY39	BY38	BY31	BY15	BCSIII-10	BY2	BY5
Red=potentially toxic species	7/4	8/4	8/4	8/4	10/4	10/4	10/4
Hose 0-10 m	presence	presence	presence	presence	presence	presence	presence
Ciliophora	present	present	present	present	present	present	present
Centrales				present	present	present	
Chaetoceros	present		present	present	present	present	present
Chaetoceros castracanei							present
Chaetoceros danicus	present						present
Chaetoceros similis	present		present				present
Chaetoceros subtilis	present					present	
Pauliella taeniata					common		
Pennales	present						
Rhizosolenia hebetata f. semispina		present					
Skeletonema marinoi	very common	present	very common	dominating	present	present	very common
Thalassiosira gravida			present				
Calliacantha natans	present						
Prymnesiales	present						
Cryptomonadales	present	present	present	present	present	present	present
Aphanizomenon flosaquae			present				
Lemmermanniella	present			present	present	present	present
Dinophysis acuminata	present						
Gymnodiniales		present	present			present	present
Heterocapsa rotundata	present		present			present	
Katodinium glaucum					present		present
Peridiniella catenata	present	present	common	present			present
Protoperidinium bipes		present	common				
Eutreptiella	present				present	present	
Mesodinium rubrum	present		present	present	present	present	present
Ebria tripartita			present	present			
Oocystis		present			present		
Binuclearia lauterbornii						present	


The Skagerrak
Station: Å17
Station: Å15
Station: Å13
Station: Släggö
Station: P2
2025-04-12
Depth (m)
Chl-a (µg/l)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Chlorophyll a
CTD Fluorescence (nominally µg/l)
Current year´s Chl-a data (0-20 m)
Monthly Chl-a averages 0-20 m (1991-2020)
Monthly Chl-a averages +/- standard dev.


The Kattegat and The Sound
Station: Fladen
Station: N14 Falkenberg
Station: Anholt E
Station: W Landskrona
2025-04-12
2025-04-11
Depth (m)
Chl-a (µg/l)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Chlorophyll a
CTD Fluorescence (nominally µg/l)
Current year´s Chl-a data (0-20 m)
Monthly Chl-a averages 0-20 m (1991-2020)
Monthly Chl-a averages +/- standard dev.


The Southern Baltic
Station: BY1
Station: BY2 Arkona
Station: BY4 Christiansö
Station: BY5 Bornholm Deep
2025-04-11
2025-04-10
Depth (m)
Chl-a (µg/l)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Chlorophyll a
CTD Fluorescence (nominally µg/l)
Current year´s Chl-a data (0-20 m)
Monthly Chl-a averages 0-20 m (1991-2020)
Monthly Chl-a averages +/- standard dev.


The Eastern Baltic
Station: BCS III-10
Station: BY10
Station: BY15 Gotland Deep
Station: BY20 Fårö Deep
2025-04-10
2025-04-09
2025-04-08
Depth (m)
Chl-a (µg/l)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Chlorophyll a
CTD Fluorescence (nominally µg/l)
Current year´s Chl-a data (0-20 m)
Monthly Chl-a averages 0-20 m (1991-2020)
Monthly Chl-a averages +/- standard dev.



Om klorofylldiagrammen

Klorofyll *a* är ett mått på mängden växtplankton. Prover tas från ett antal djup. Data presenteras både från de fasta djupen och som medelvärden 0-20 m. Utöver resultaten från laboratorieanalyserna av vattenprover mäts klorofyll *a* som fluorescens från ett automatiskt instrument som sänks ned från fartyget. På så sätt kan djupt liggande, ibland tunna lager av växtplankton observeras.

About the chlorophyll graphs

Chlorophyll *a* is sampled from several depths. Data are presented both from the discrete depths and as an average 0-20 m. In addition to the laboratory analysis from the water samples chlorophyll fluorescence is measured in continuous depth profiles from the ship. This is a way to observe thin layers of phytoplankton occuring below the surface.

Om AlgAware

SMHI genomför månatliga expeditioner i Östersjön och Västerhavet. Resultat baserade på semikvantitativ mikroskopanalys av planktonprover samt klorofyllmätningar presenteras kortfattat i denna rapport. Information från SMHIs satellitövervakning av algblomningar finns under perioden juni-augusti på www.smhi.se. Resultat från provtagningarna kan hämtas från SMHI:s databas på sharkweb.smhi.se. Hydrografidata läggs ut varje månad, växtplanktondata läggs ut en gång per år.

About AlgAware

SMHI carries out monthly cruises in the Baltic and the Kattegat/Skagerrak. Results from semi quantitative microscopic analysis of phytoplankton samples as well as chlorophyll measurements are presented in brief in this report. Information from SMHIs satellite monitoring of algal blooms is found on www.smhi.se during the period June-August. Results from the expeditions are found in the SMHI database, sharkweb.smhi.se. Data are published monthly, phytoplankton data however, are published once a year.

Art / Species	Gift / Toxin	Eventuella symptom	Clinical symptoms
Alexandrium spp.	Paralytic shellfish poisoning (PSP)	**Milda symptom:** Inom 30 min.: Stickningar eller en känsla av bedövning runt läpparna, som sprids gradvis till ansiktet och nacken; stickningar i fingertoppar och tår; Huvudvärk; yrsel, illamående, kräkningar, diarré **Extrema symptom:** Muskelförlamning; andningssvårigheter; känsla av att kvävas; Man kan vara död inom 2-24 timmar efter att ha fått i sig giftet, på grund av att andningsmuskulaturen förlamas.	**Mild case:** Within 30 min: tingling sensation or numbness around lips, gradually spreading to face and neck; prickly sensation in fingertips and toes; headake, dizziness, nausea, vomiting, diarrhoea. **Extreme case** Muscular paralysis; pronounced respiratory difficulty; choking sensation; death trough respiratory paralysis may occur within 2-24 hours after ingestion.
Dinophysis spp.	Diarrehetic shellfish poisoning (DSP)	**Milda symptom:** Efter cirka 30 minuter till några timmar: yrsel, illamående, kräkningar, diarré, magont **Extrema symptom:** Upprepad exponering kan orsaka cancer	**Mild case:** Within 30 min-a few hours: dizziness, nausea, vomiting, diarrhoea, abdominal pain. **Extreme case:** Repeated exposure may cause cancer.
Pseudo- niztschia spp.	Amnesic shellfish poisoning (ASP)	**Milda symptom:** Efter 3-5 timmar: yrsel, illamående, kräkningar, diarré, magkramper **Extrema symptom:** Yrsel, hallucinationer, förvirring, förlust av korttidsminnet, kramper	**Mild case:** Within 3-5 hours: dizziness, nausea, vomiting, diarrhoea, abdominal cramps. **Extreme case:** dizziness, hallucinations, confusion, loss of memory, cramps.
Chaetoceros concavicornis/ C.convolutus	Mechanical damage through hooks on setae	**Låg celltäthet:** Ingen påverkan. **Hög celltäthet:** Fiskens gälar skadas, fisken dör.	**Low cell numbers:** No effect on fish. **High cell numbers:** Fish death due to gill damage.
Pseudochattonella spp.	Fish toxin	**Låg celltäthet:** Ingen påverkan. **Hög celltäthet:** Fiskens gälar skadas, fisken dör.	**Low cell numbers:** No effect on fish. **High cell numbers:** Fish death due to gill damage.

Översikt över några potentiellt skadliga alger och det aktuella giftets effekt. Overview of potentially harmful algae and effects of toxins. Manual on harmful marine microalgae (2003 - UNESCO Publishing).

Kartan på framsidan visar viktat medelvärde för klorofyll *a,* µg/l (0-10 m) vid de olika stationerna. Pil upp eller ned indikerar om resultatet är över eller under en standardavvikelse från medel. Medel är beräknat utifrån aktuell månad under perioden 2001-2015. Förekomst av skadliga alger vid stationer där arter analyseras markeras med symbol.

The map on the front page shows weighted mean of chlorophyll *a*, µg/l (0-10 m) at sampling stations. The arrow up or down indicate whether the result is above or below one standard deviation from mean. The mean value is calculated using results from the actual month during the period 2001-2015. Presence of harmful algae at stations where species analysis is performed is shown with a symbol.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