SMHI
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AlgAware
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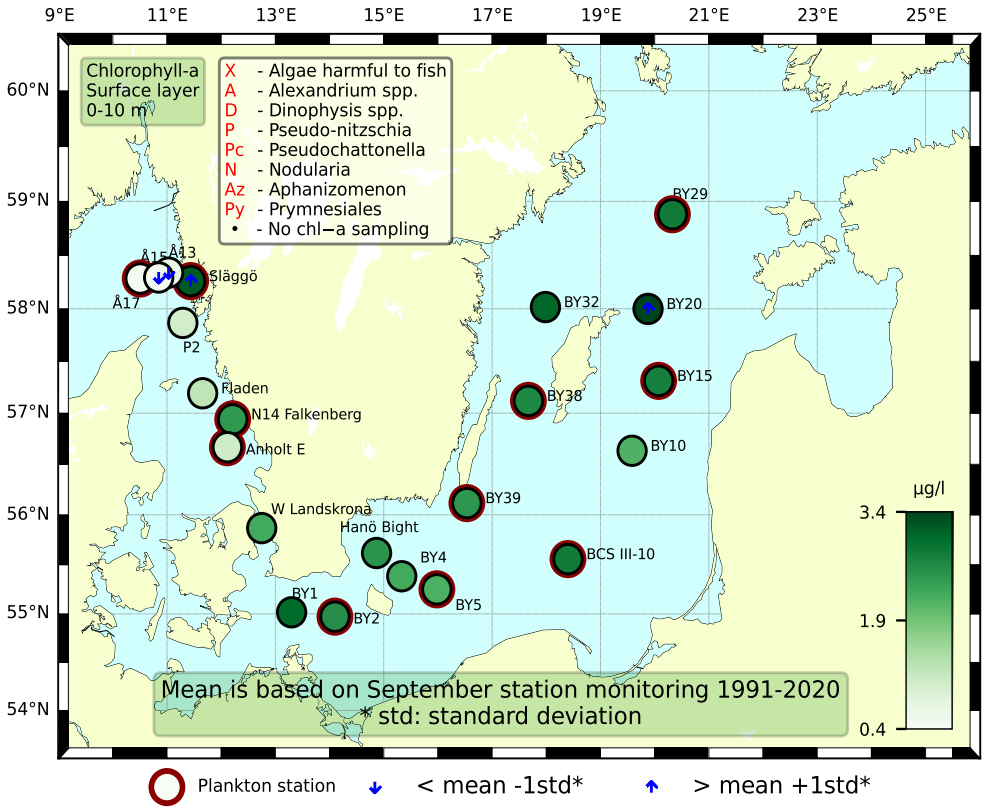
ALGAL SITUATION IN
MARINE WATERS SURROUNDING SWEDEN

Sammanfattning
Artdiversiteten och de totala cellantalen var låga i Kattegatt men något högre i Skagerrak. Högst totalt cellantal uppmättes vid Släggö vid Skagerrak kust. Kiselalgen *Pseudosolenia calcar-avis* återfanns i högre antal vid samtliga stationer i Västerhavet. De integrerade klorofyllvärdena (0–20 m) i Skagerrak var inom det normala förutom vid Släggö där de var över det normala i ytvattnet (0–10 m). I Kattegatt var samtliga klorofyllvärden normala för denna månaden.

Vid BY2 i sydvästra Östersjön var artdiversiteten relativt hög och dominerades av kiselalger. I övrigt var både diversitet och cellantal låga i Östersjön med förhöjda cellantal av små arter enbart. Vid tre stationer, BY15, BY29 och BY39 fanns förhöjda cellantal av den filamentösa cyanobakterien *Aphanizomenon flosaquae.* De integrerade klorofyllvärdena (0–10 m and 0–20 m) var inom det normala för denna månaden.



Abstract
The species diversity and the total cell numbers were low in Kattegat but a bit higher in the Skagerrak. The highest cell counts were found at Släggö at the Skagerrak coast. The diatom *Pseudosolenia calcar-avis* was found in high abundance at all stations along the Swedish west coast. The integrated chlorophyll concentrations (0–20 m) in the Skagerrak were within normal except for the upper integrated depths (0–10 m) at Släggö where it was above normal. All integrated chlorophyll concentrations in the Kattegat were within normal for this month.

At BY2 in the Southwestern Baltic Proper, the species diversity was relatively high and dominated by diatoms. At all of the other phytoplankton stations, both diversity and cell numbers were low with enhance cell counts of small species only. At three stations, BY15, BY29 and BY39, there were enhanced amounts of the filamentous cyanobacterium *Aphanizomenon flosaquae*. The integrated chlorophyll concentrations (0–10 m and 0–20 m) were within normal for this month.

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

The Skagerrak

Å17 (open Skagerrak) 24th of September

The species diversity and the cell counts were both moderate. The diatom *Pseudosolenia calcar-avis* was found in highest cell counts among the larger cells. Only a few cells of dinoflagellates were noted. The coccolithophorid *Emiliania huxleyi* was rather numerous among the smaller cells. The integrated chlorophyll concentrations (0–10 m and 0–20 m) were normal for this month.

Släggö (Skagerrak coast) 24th of September

The total cell numbers and biodiversity were both relatively high. Diatoms were the most abundant group with for example *P. calcar-avis, Leptocylindrus danicus* and *Cerataulina pelagica* in higher abundance. The dinoflagellates were however few in numbers. The coccolithophorid *E. huxleyi* was found in high cell numbers. The integrated chlorophyll concentrations (0–10 m) was above normal for the month whereas (0–20 m) was normal for this month.

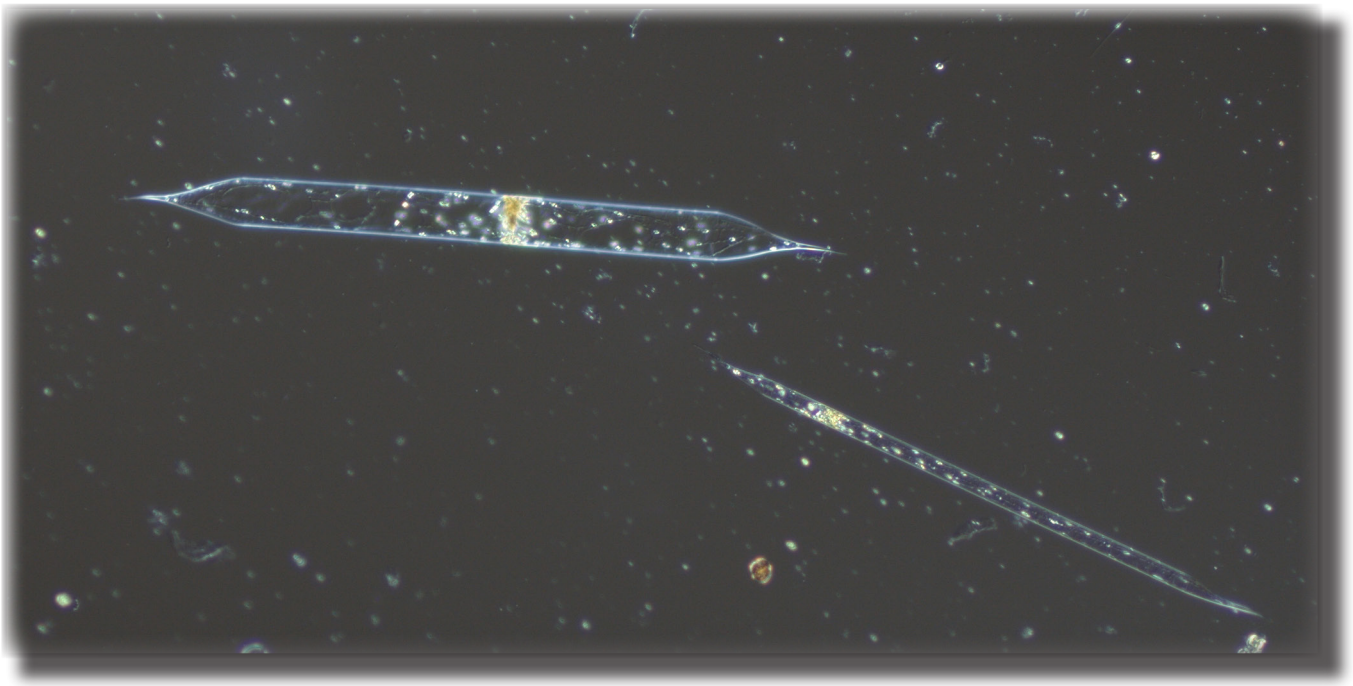


Fig 1. The diatom *Pseudosolenia calcar-avis* was found in relatively high amounts in the Skagerrak and Kattegat areas. The species can vary very much in size. Photo: M. Johansen.

The Kattegat

Anholt E 10th and 25th of September

The species diversity and total cell counts were very low. The diatoms were scarce and only *P. calcar-avis* were found in high abundance among the diatoms. The dinoflagellates were found in higher diversity but with low numbers of cells of each species. The integrated chlorophyll concentrations (0–10 m and 0–20 m) were normal for this month.

N14 Falkenberg 25th of September

The species diversity and total cell counts were higher than at Anholt E, but still not high. The diatom *P. calcar-avis* were found in higher cell numbers. The dinoflagellate genus *Tripos* was also common together with *Dinophysis tripos*. The smaller cells were dominated by different cryptomonads. The integrated chlorophyll concentrations (0–10 m and 0–20 m) were normal for this month.

The Baltic

BY2 26th of September

The species diversity was high compared to the other Baltic stations and diatoms dominated the cell counts. The diatoms *Chaetoceros* cf. *convolutus*, *C. debilis*, *Dactyliosolen fragilissimus* and the dinoflagellate *Gymnodinium verruculosum* were the most abundant species. Flagellates like cryptomonadales and *Eutreptiella* spp. were numerous. The integrated chlorophyll concentrations (0–10 m and 0–20 m) were within normal for this month.

BY5 26th of September, BCSIII-10 29th of September

The phytoplankton diversity and the total cell numbers were low. The dinoflagellate *G. verruculosum* and small species like cryptomonadales were abundant. The integrated chlorophyll concentrations (0–10 m and 0–20 m) were within normal for this month.

BY15 Gotland deep 28th of September

The phytoplankton diversity and the total cell numbers were low. The filamentous cyanobacterium *Aphanizomenon flosaquae* and small species like cryptomonadales were relatively abundant. The integrated chlorophyll concentrations (0–10 m and 0–20 m) were within normal for this month.

BY29 28th of September, BY39 27th of September

The phytoplankton diversity and the total cell numbers were low. *A. flosaquae* and small species like cryptomonadales were relatively abundant. The integrated chlorophyll concentrations (0–10 m and 0–20 m) were within normal for this month.

BY31 Landsort deep 27th of September, BY38 27th of September

The phytoplankton diversity and the total cell numbers were low. Only small species like cryptomonadales and *Pyramimonas* spp. were abundant. The integrated chlorophyll concentrations (0–10 m and 0–20 m) were within normal for this month.

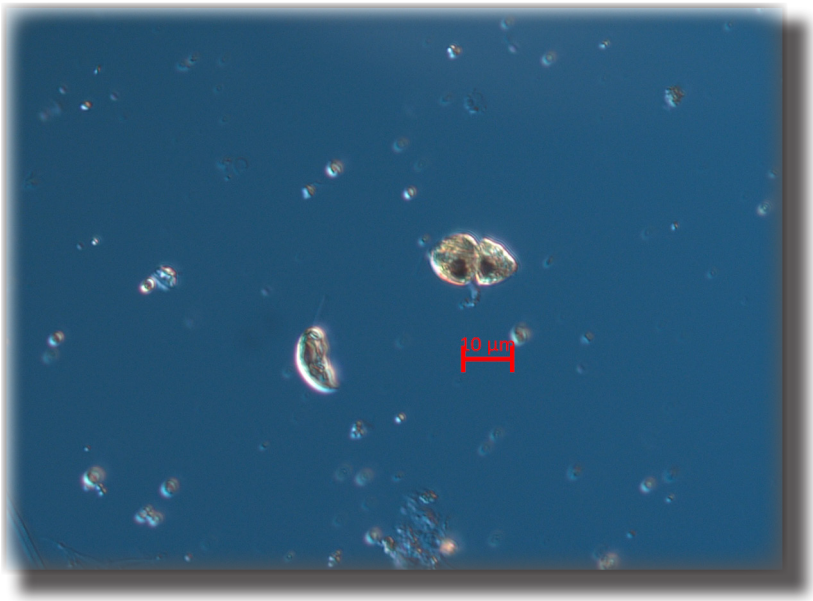
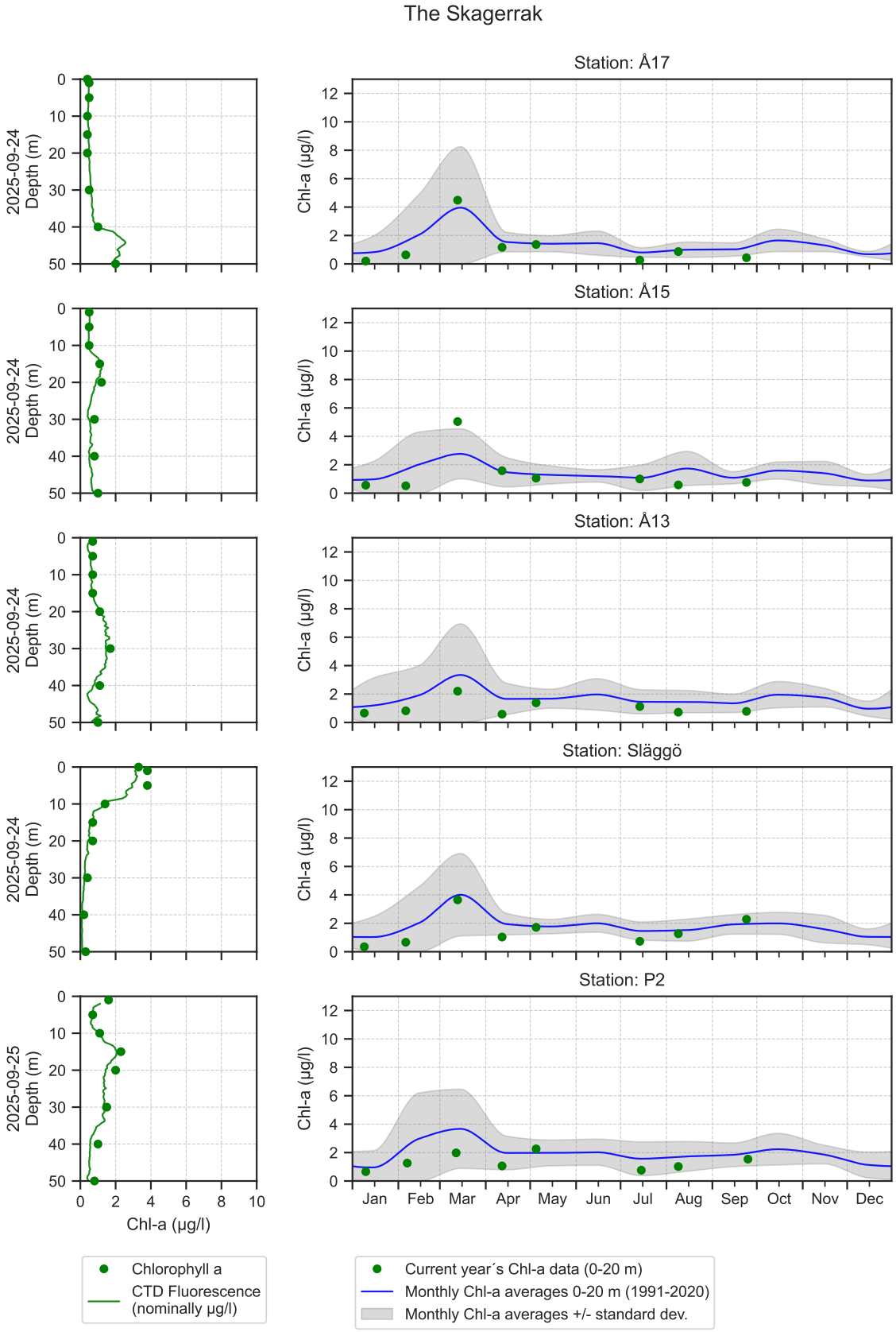


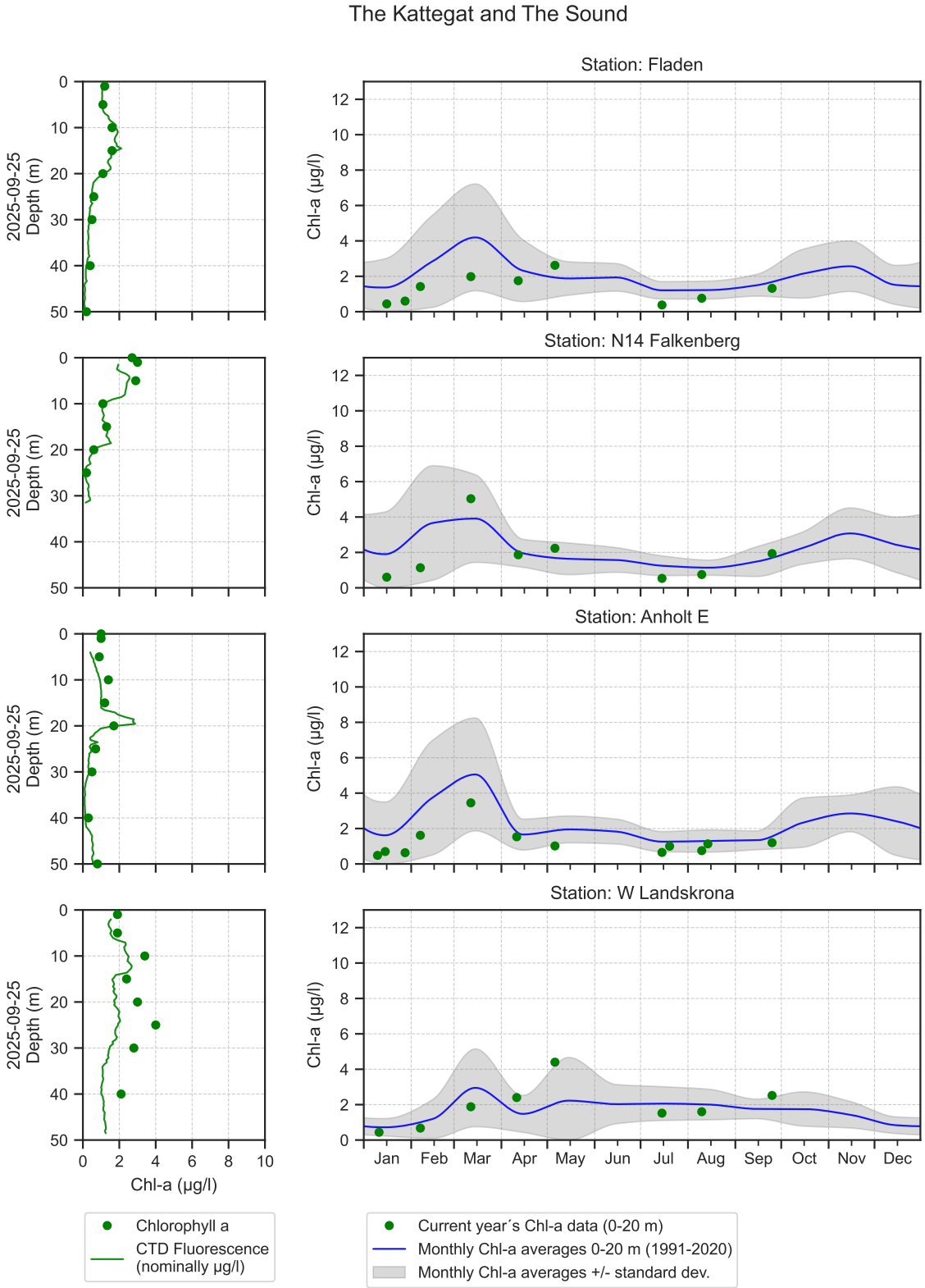
Fig. 2. The dinoflagellate *Gymnodinium verruculosum* was abundant in the Baltic Sea samples. The species is identified by its shape, size and conspicuous dark spots, one in the hypotheca and epitheca respectively. Photo: A. Skjevik.

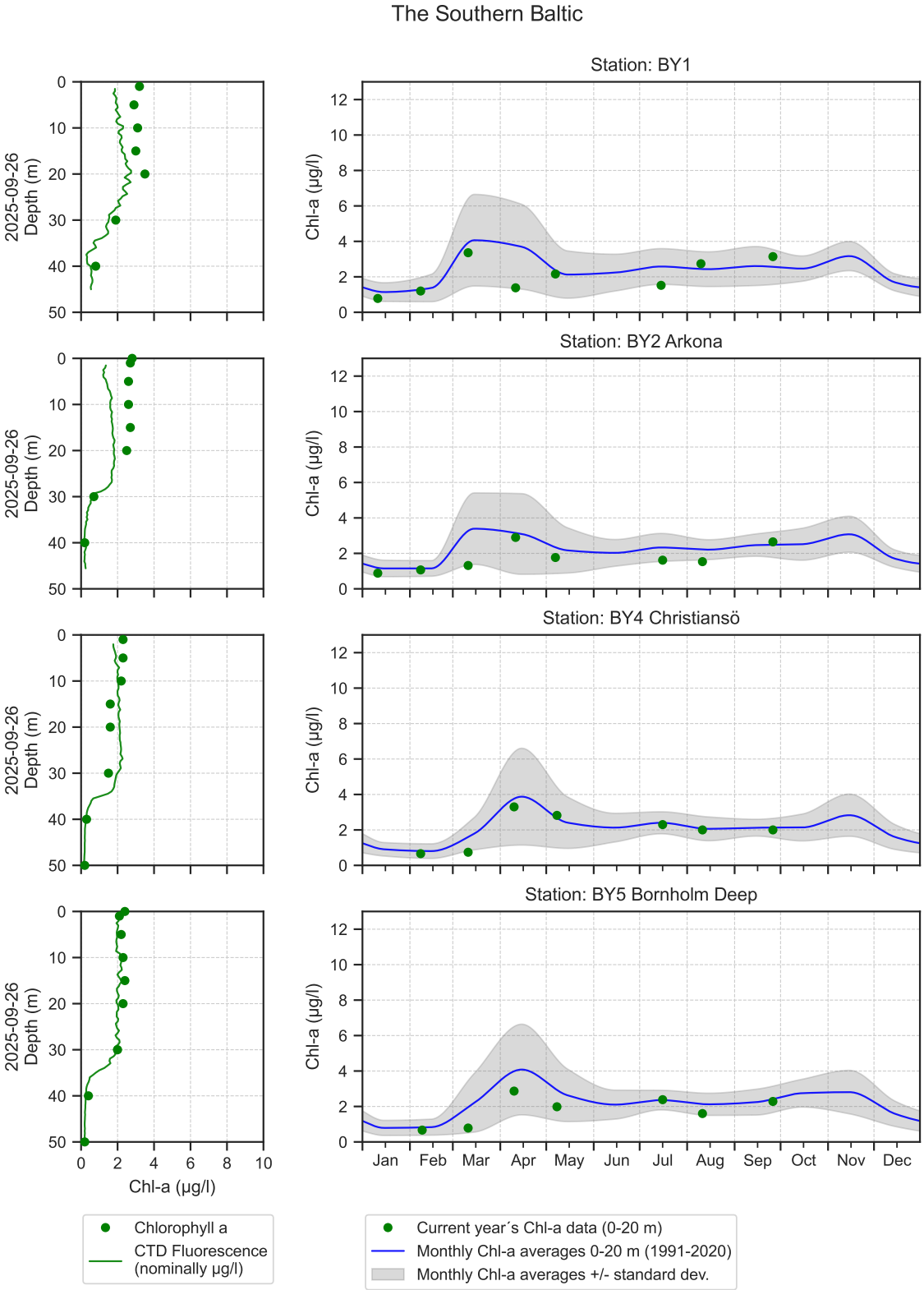
Phytoplankton analysis and text:
Marie Johansen and Ann-Turi Skjevik.

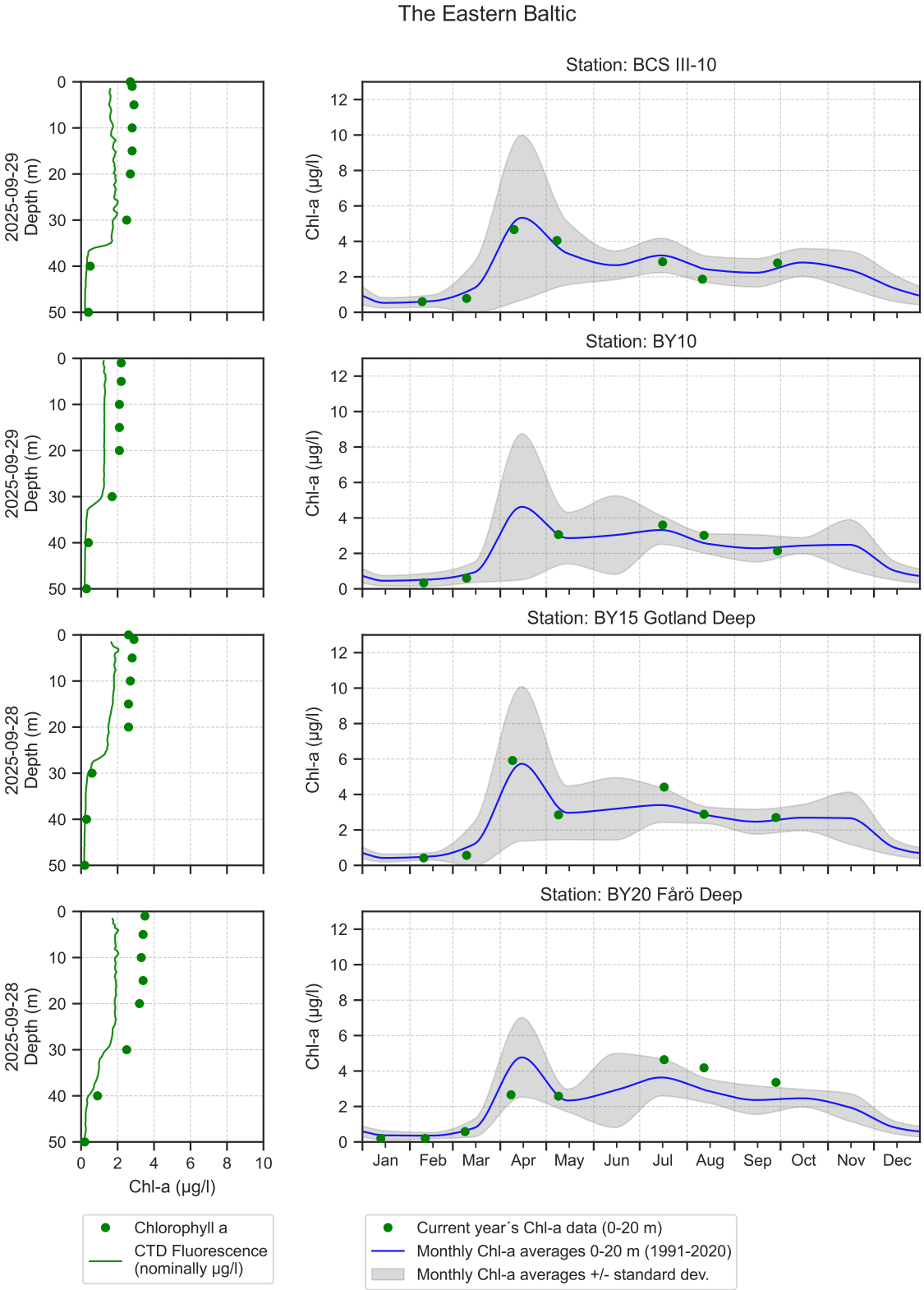
Selection of observed species	Anholt E	N14	Släggö	Å17
Red=potentially toxic species	25/9	25/9	24/9	24/9
Hose 0-10 m	presence	presence	presence	presence
Bacteriastrum hyalinum			present	
Cerataulina pelagica			common	present
Chaetoceros			present	
Chaetoceros cf. convolutus		present	present	
Chaetoceros curvisetus			present	
Chaetoceros danicus				present
Chaetoceros didymus			present	
Chaetoceros socialis				present
Coscinodiscus concinnus			present	
Cyclotella cf. choctawhatcheeana			present	
Dactyliosolen fragilissimus			present	
Leptocylindrus danicus			common	present
Leptocylindrus minimus			present	
Nitzschia longissima	present		common	common
Pseudo-nitzschia				present
Pseudosolenia calcar-avis	very common	common	common	very common
Rhizosolenia setigera f. pungens		present	present	present
Striatella unipunctata			present	
Dinophysis tripos		common		
Gymnodiniales	present	present	present	common
Heterocapsa rotundata	present	present		
Katodinium glaucum	present		present	
Prorocentrum compressum		present		
Prorocentrum micans				present
Protoperidinium claudicans			present	
Protoperidinium divergens	present			
Tripos furca	present	common		
Tripos fusus		present	present	
Tripos lineatus	present	present		
Tripos longipes			present	
Tripos macroceros				present
Tripos muelleri	present	common		
Dinobryon				present
Emiliania huxleyi	present	present	very common	common
Cryptomonadales		common	common	present
Dictyochales			common	
Octactis speculum			present	
Ciliophora	present	present		present
Laboea strobila	present		present	

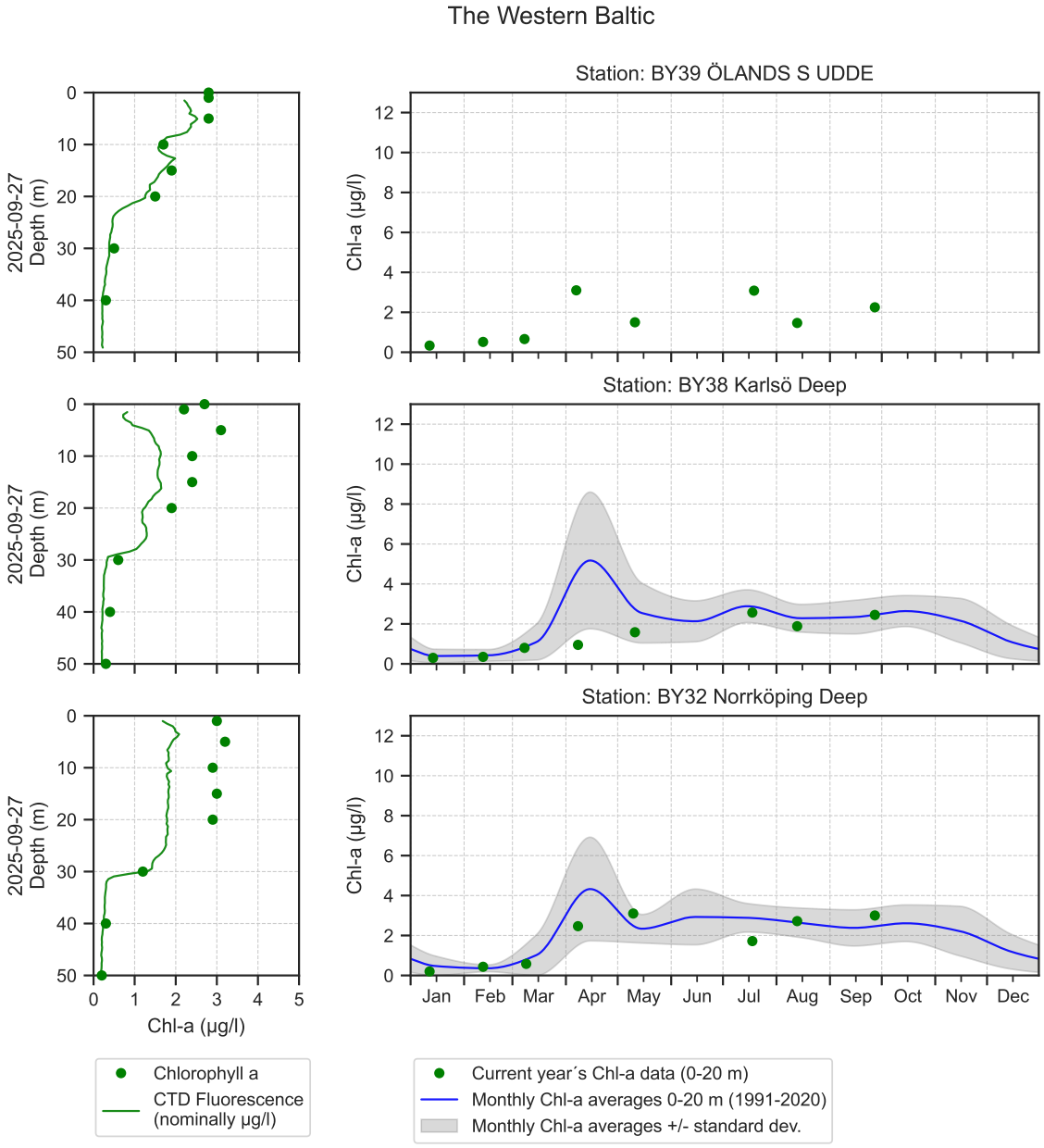
Selection of observed species	BY2	BY5	BCSIII-10	BY15	BY29	BY31	BY38	BY39
Red=potentially toxic species	26/9	26/9	29/9	28/9	28/9	27/9	27/9	27/9
Hose 0-10 m	presence	presence	presence	presence	presence	presence	presence	presence
Actinocyclus			present	present				
Centrales	present	present		present	present			
Cerataulina pelagica	present							
Chaetoceros castracanei	present			present	present	present	present	
Chaetoceros convolutus	common							
Chaetoceros danicus	present	present	present	present	present		present	
Chaetoceros debilis	common	present						
Chaetoceros subtilis	present							
Chaetoceros wighamii		present						
Cyclotella choctawhatcheeana				present	present	present		present
Cylindrotheca closterium	present						present	present
Dactyliosolen fragilissimus	common	present						
Leptocylindrus minimus	present							
Pseudosolenia calcar-avis	present							
Skeletonema marinoi								present
Amphidinium crassum		present						
Dinophysis acuminata					present			present
Gymnodinium verruculosum	common	common	common	present		present	present	
Heterocapsa	present	present	present	present		present	present	
Heterocapsa rotundata	present	present		present	present	present	present	
Heterocapsa triquetra					present			
Karlodinium veneficum							present	
Katodinium glaucum	present			present	present		present	
Prorocentrum cordatum	present							present
Tripos muelleri	present							
Aphanizomenon flosaquae	present	present		common	common	present	present	common
Aphanothece paralleliformis				present				
Dolichospermum								present
Lemmermanniella				present	present			
Nodularia spumigena	present	present					present	
Snowella						present		
Woronichinia				present	present	present		
Binuclearia lauterbornii				present				present
Apedinella radians	present							
Pseudopedinella	present	present	present	present	present	present	present	present
Pseudopedinella pyriformis			present	present		present		
Dinobryon faculiferum	present		present					
Ollicola vangoorii							present	
Prymnesiales	present	present	present	present	present	present		
Cryptomonadales	common	common	common	common	common	common	common	common
Eutreptiella	common	present	present	present	present	present	present	present
Monoraphidium					present	present		
Commation			present					
Heterosigma						present		
Pyramimonas	present	present		common	present	present	common	present
Oocystis			present		present	present		present
Telonema	present				present			
Telonema subtile				present				
Katablepharis remigera						present		
Leucocryptos marina	present			present				present
Ebria tripartita	present	present	present		present	present	present	present
Calliacantha natans	present							
Choanoflagellatea	present	present	present	present				present
Mesodinium rubrum			present		present	present	present	present
Helicostomella subulata				present	present	present		present
Strombidium						present		
Ciliophora	common	present	common	present	present	common	common	common


The Skagerrak
Station: Å17
Station: Å15
Station: Å13
Station: Släggö
Station: P2
2025-09-24
2025-09-25
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
2025-09-25
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
2025-09-26
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
2025-09-29
2025-09-28
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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