

Toxic Phytoplankton



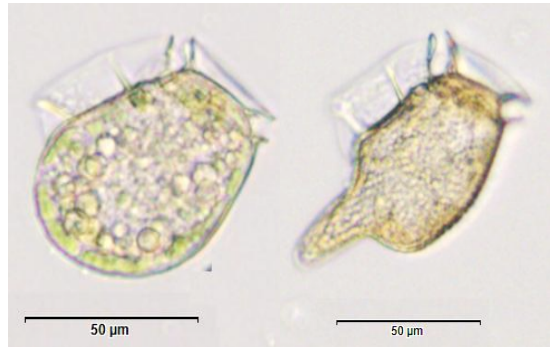
Alexandrium catenella

Armored **Dinoflagellate**

Length: 20-50µm

Width: 20-30µm

May form chains of 2 or more
Causative organism of Paralytic
Shellfish Poisoning (PSP)



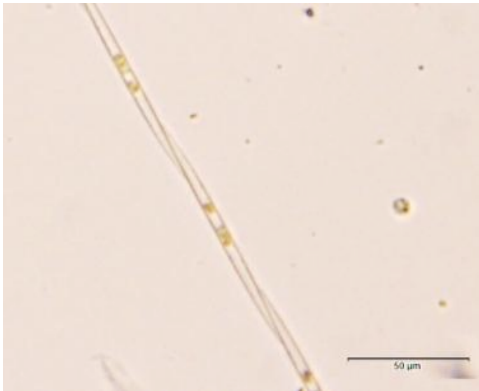
Dinophysis sp.

Armored **Dinoflagellate**

Length: 50-80µm

Width: 40-70µm

Many morphologies with distinctive
“collar”
Causative organism of Diarrhetic
Shellfish Poisoning (DSP)



Pseudo-nitzschia delicatissima size class

Chain-forming **Diatom**

“Skinnies”

Width: 2-3µm

Vacuole and chloroplasts less
pronounced than *seriata* size class
Causative organism of Amnesic
Shellfish Poisoning (ASP)



Pseudo-nitzschia seriata size class

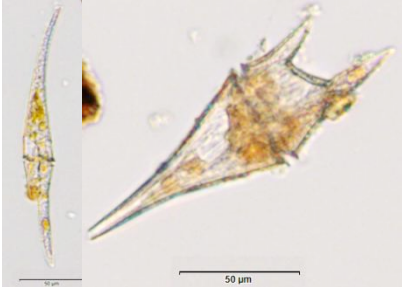
Chain-forming **Diatom**

“Fatties”

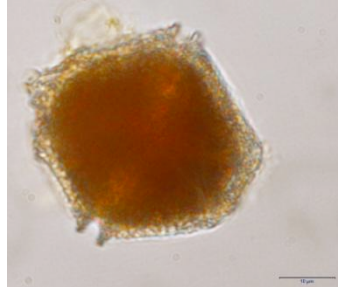
Width: 5-8µm

Pronounced central vacuole
Two large, distinct chloroplasts
Causative organism of ASP

Other Common **Dinoflagellates**



***Ceratium* spp.**
 Armored **Dinoflagellate**
 Length: 70-200 µm
 Width: 30-60µm
 Many “horned”
 morphologies present



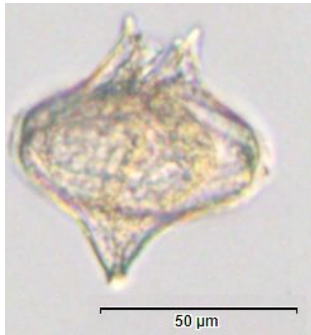
Lingulodinium polyedrum
 Armored **Dinoflagellate**
 Diameter: 40-55 µm
 Distinct polyhedron shape
 Brick red water discoloration
 Implicated in fish kills



Prorocentrum micans
 Armored **Dinoflagellate**
 Length: 35-70 µm
 Width: 25-50 µm
 Compressed laterally
 Spine distinctive
 Implicated in fish kill
 events



Akashiwo sanguinea
 Naked **Dinoflagellate**
 Length: 40-80 µm
 Width: 25-60 µm
 Compressed laterally
 Pigment may vary
 Implicated in fish &
 seabird mortalities

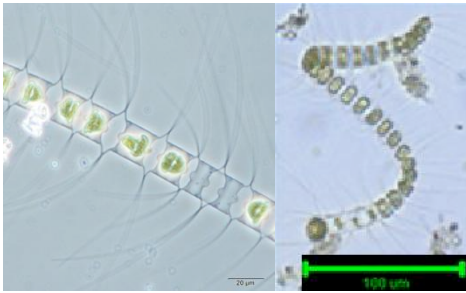


***Protoperidinium* spp.**
 Armored **Dinoflagellate**
 Length: 50-100 µm
 Lightly pigmented, often
 pinkish in color



Noctiluca scintillans
 Heterotrophic **Dinoflagellate**
 Diameter: 200 µm – 2mm
 Large vacuole space
 Thick, modified flagellum

Other Common Diatoms



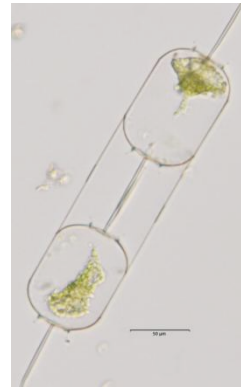
Chaetoceros sp.

Chain-forming **Diatom**

Width: <math><10-50 \mu\text{m}</math>

Many morphologies

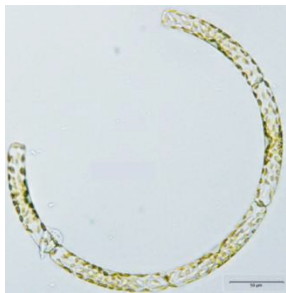
Distinctive Spines and fused cells



Ditylum sp.

Centric **Diatom**

Length: 80-130 μm

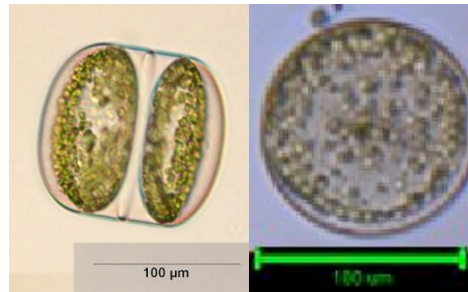


Guinardia sp.

Chain-forming **Diatom**

Width: 6-45 μm

Individual cells rectangular
with many small chloroplasts



Coscinodiscus sp.

Centric **Diatom**

Diameter: 30-500 μm

Circular, non-chain-forming



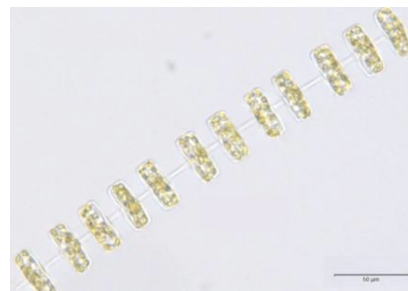
Asterionellopsis sp.

Chain-forming **Diatom**

Length: 30-150 μm

Star-shaped colonies

Individual cells triangular
with single spine



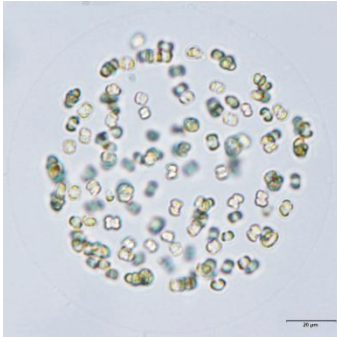
Thalassiosira sp.

Chain-forming **Diatom**

Diameter: 3-200 μm

Central thread distinct

Other Common Plankton



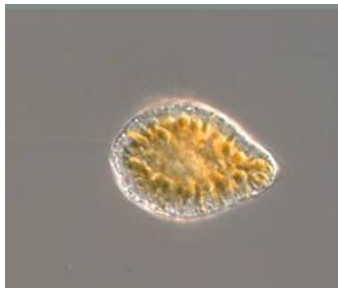
***Phaeocystis* spp.**

Colony-forming **Prasinophyte**
Individual Cell Diameter: 5 μm
Colonies can be visible to the naked eye



Heterosigma akashiwo

Small **Raphidophyte**
Length: 10-15 μm Width: 10-14 μm
Brownish-red water discoloration
Implicated in fish kills



***Chattonella* sp.**

Raphidophyte
Length: 20-100 μm
Brownish-red water discoloration
Implicated in fish kills



Tintinnids

Heterotrophic **Protist**
Length range: 20-200 μm
Many morphologies
Glass "house" distinctive
Darting-like swimming behavior



Oligotrich ciliates

Heterotrophic **Protist**
Length range: 20-200 μm
Many morphologies, anterior cilia