

# *Coscinodiscus wailesii*



Taxon	Family / Order / Class / Phylum
<i>Coscinodiscus wailesii</i> (Gran & Angst 1931)	Coscinodiscaeae / Biddulphiales / Bacillariophyceae / Bacillariophyta

## COMMON NAMES (English only)

### SYNONYMS

Unknown [after its first record in Europe *C. wailesii* was first described as *Coscinodiscus nobilis* Grunow – but this was a mis-identification, i.e. it is not a synonym.]

### SHORT DESCRIPTION

This very large centric diatom, typically 175-500  $\mu\text{m}$  in diameter, is a primary producer in brackish and marine waters.

### BIOLOGY/ECOLOGY

#### Dispersal mechanisms

Water currents.

#### Reproduction

Most cells complete their first cell division within 48 hrs. They then continue to multiply by binary division. In the sea a doubling of biomass has been estimated in 70 hrs. In blooming conditions a biomass of 1,400  $\mu\text{g}$  carbon  $\text{l}^{-1}$  may be reached. The seasonal cycle in the North Sea includes highest abundances in April and September to October. However, annually the abundance oscillates.

#### Known predators/herbivores

The cells are too large to be easily grazed by zooplankton.

#### Resistant stages (seeds, spores etc.)

Resting cells are known to survive dark conditions for long periods (at least 15 months) and may be found in sediment. These resting cells can rapidly rejuvenate under favourable light, temperature and nutrient conditions.

### HABITAT

#### Native (EUNIS code)

A7: Pelagic water column. Occupies the upper water layers in coastal waters and also offshore.

#### Habitat occupied in invaded range (EUNIS code)

A7: Pelagic water column. Occupies the upper water layers in coastal waters and also offshore.

#### Habitat requirements

It shows a wide tolerance to temperature (0-32  $^{\circ}\text{C}$ ), salinity (10 – 35 PSU) and nutrients.

### DISTRIBUTION

#### Native Range

The diatom is native to the North Pacific.

#### Known Introduced Range

It was first detected in Europe near Plymouth in 1977. It reached the Atlantic coast of France and the Irish Sea by 1978 and Norway by 1979. The first record in the (western) Baltic occurred 1983. Today it is observed from the Atlantic coast of France to Norway.







## Trend

Unknown.

## MAP (European distribution)



### Legend

	Known in country		Known in CGRS square		Known in area
	Known along coast				

## INTRODUCTION PATHWAY

It was probably introduced with ballast water discharges. Its resting cells were found in sediment samples from ballast tanks. Another possible introduction vector is shellfish movements. Cells may be carried within the gut/pseudofaeces of shellfish.

## IMPACT

### Ecosystem Impact

This non-toxic species is considered as a nuisance as it forms dense blooms which produce copious amounts of mucilage and due to its large size it is inedible to most grazing zooplankton. Blooms may occur with highest abundances in the southern North Sea and Skagerrak area. During blooms the species may form up to 90% of the total algal biomass. Especially in blooming situations benthic organisms are threatened. The damage is caused by the copious mucilage, which can aggregate, sink and cover the seabed. The decay of a bloom is likely to cause anoxic conditions. It may also compete with phytoplankton and macroalgae species for space and nutrients.

### Health and Social Impact

Unknown.

### Economic Impact

Impact on fisheries and aquaculture is known as the mucilage causes extensive clogging of fishing nets, cages and other equipment.

## MANAGEMENT

### Prevention

Unknown.

### Mechanical

Unknown.

## Chemical

Unknown.

## Biological

Unknown.

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Author: Stephan Gollasch

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