



**55 European Marine Biology Symposium**

Poland, Gdańsk 19 - 23 September 2022

**Institute of Marine Biology of the NAS of Ukraine**

*Department of Morphofunctional Ecology of Aquatic Vegetation*

**Epiphytic algae of seagrasses  
in the northwestern part  
of the Black Sea**

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# *Underwater seagrass meadows*



*Seagrass communities are among the most valuable ecosystems in the biosphere - they are highly productive, affect the structural complexity of habitats, increase biodiversity, and play an important role in the global carbon and nutrient cycles. The seagrasses also provide the living substrate to which many benthic organisms.*

*In recent decades, there has been a reduction in the area of seagrass meadows around the world, which leads not only to a decrease in their functions, but also to a reduction in the surfaces for the development of many organisms*



# *Epiphytic algae of seagrasses*

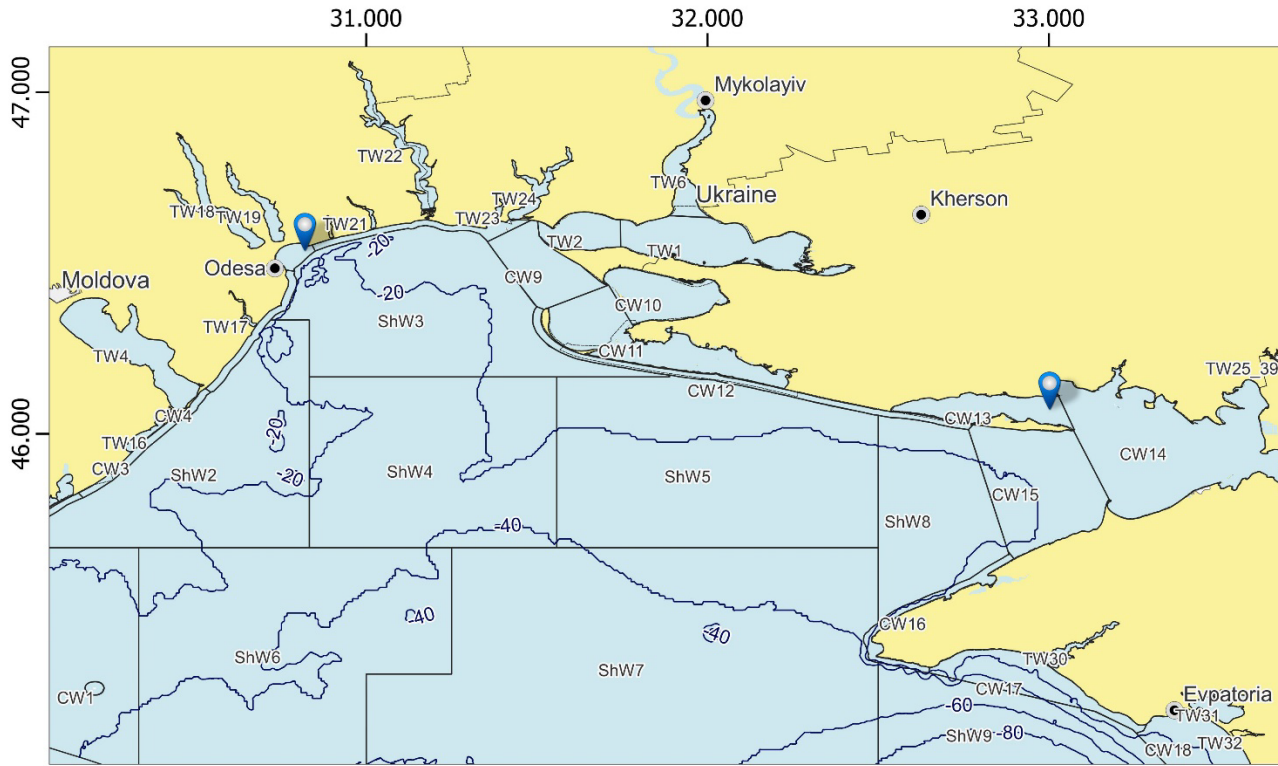


*Epiphytic algae are the most abundant and diverse group of organisms on seagrass leaves, they increase the biodiversity and total biomass of seagrass meadows, contribute significantly to primary production, and are a food source for herbivores*

*Epiphytes are indicators of the state of water bodies, since they are more sensitive and respond faster to changes in environmental conditions than the host plant*



# Northwestern part of the Black Sea



*The most extensive seagrass meadows in the Black Sea are found in its Northwestern part, on the territory of Ukraine, where they grow in large bays and gulfs, estuaries and coastal lagoons.*

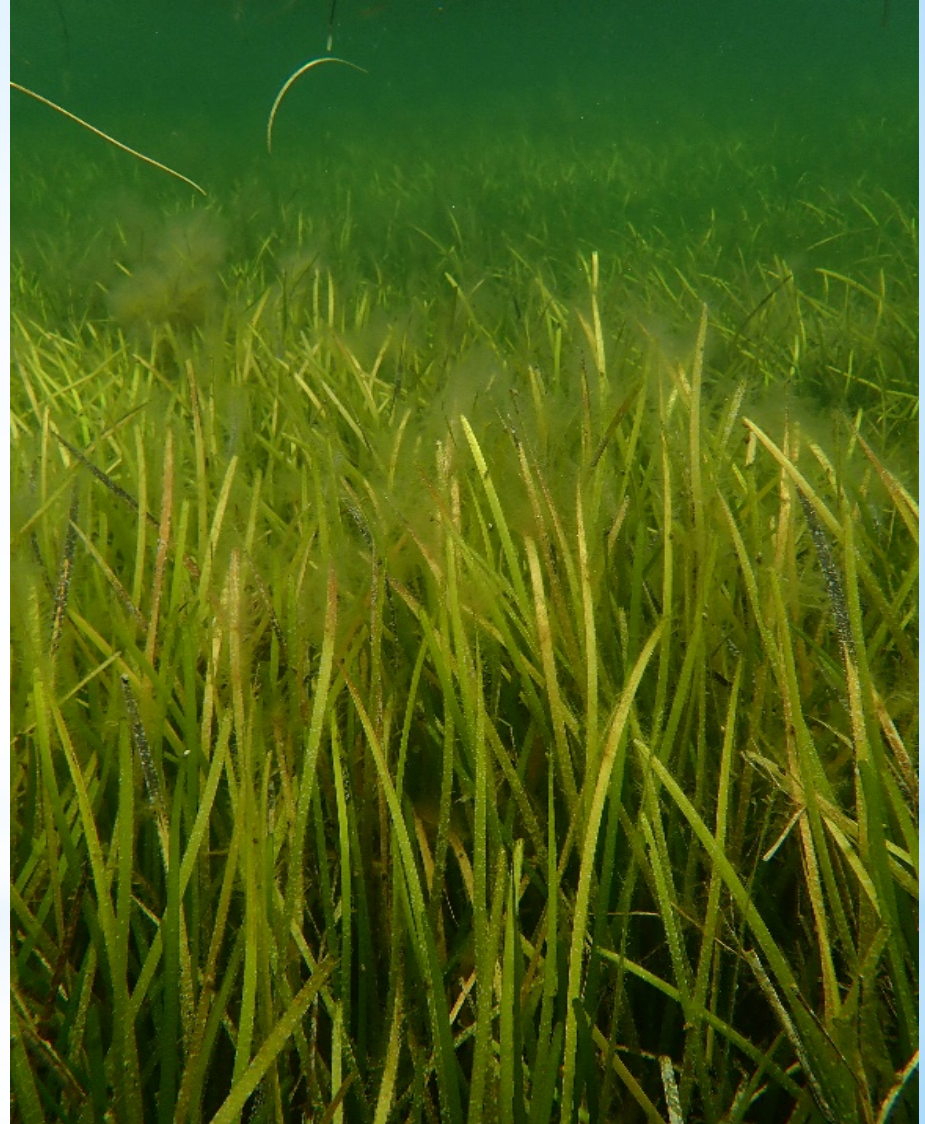
# Seagrasses of *the northwestern part of the Black Sea*



*Ruppia cirrhosa* (Petagna) Grande



*Zostera noltii* Hornem.



*Zostera marina* L.

# *Dzharylgach Bay*



*Sampling period -  
July-August  
2020, 2021  
Sampling depth  
from 1 to 2 m*

# Species composition of seagrass epiphytes

## CHLOROPHYTA – 7 SPECIES

*Chaetomorpha linum* (O.F.Müller) Kützing  
*Cladophora liniformis* Kützing  
*Cladophora vagabunda* (Linnaeus) Hoek  
*Rhizoclonium riparium* (Roth) Harvey  
*Ulva clathrata* (Roth) C.Agardh  
*Ulvella lens* P.Crouan & H.Crouan  
*Ulvella scutata* (Reinke) R.Nielsen, C.J.O'Kelly & B.Wysor

## PHAEOPHYTA – 1 SPECIES

*Ectocarpus siliculosus* (Dillwyn) Lyngbye

## RHODOPHYTA - 10 SPECIES

*Acrochaetium secundatum* (Lyngbye) Nägeli  
*Carradoriella denudata* (Dillwyn) Savoie & G.W.Saunders  
*Ceramium diaphanum* (Lightfoot) Roth  
*Ceramium virgatum* Roth  
*Chondria capillaris* (Hudson) M.J.Wynne  
*Chondria dasyphylla* (Woodward) C.Agardh  
*Hydrolithon farinosum* (J.V.Lamouroux) Penrose & Y.M.Chamberlain  
*Lophosiphonia obscura* (C.Agardh) Falkenberg  
*Pneophyllum confervicola* (Kützing) Y.M.Chamberlain  
*Polysiphonia pulvinata* (Roth) Sprengel

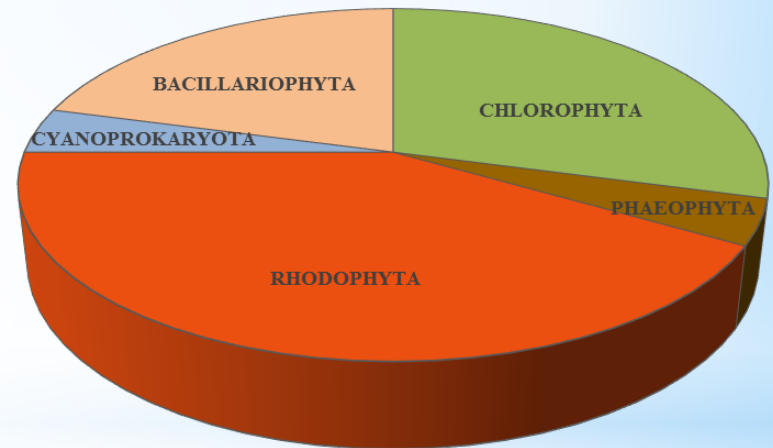
## CYANOPROKARYOTA – 1 SPECIES

*Lyngbya majuscula* Harvey ex Gomont

## BACILLARIOPHYTA - 5 SPECIES

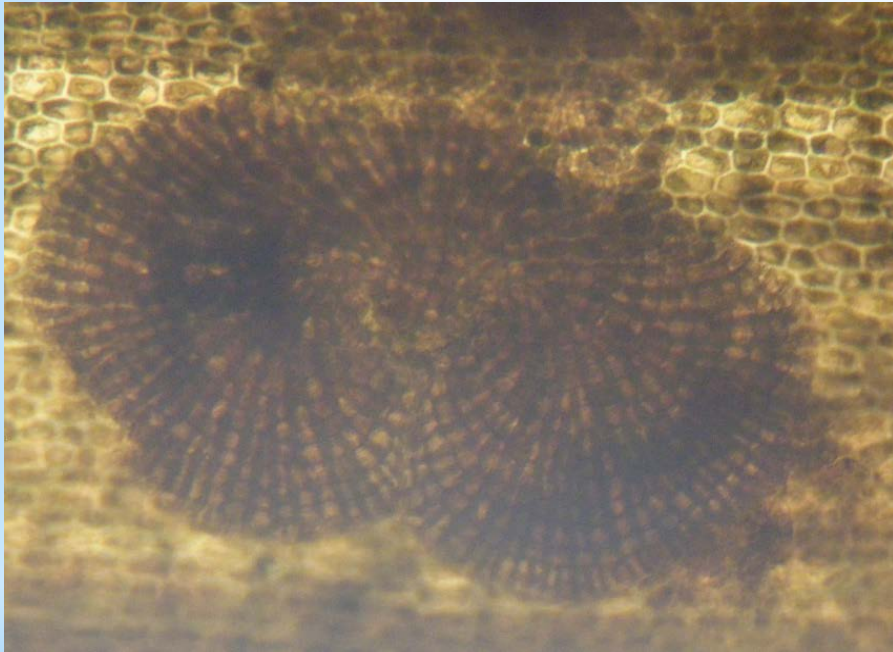
*Cocconeis scutellum* Ehrenberg  
*Cocconeis maxima* (Grunow) H.Peragallo & M.Peragallo  
*Cymbella* sp.  
*Navicula* sp.  
*Striatella* sp.

Total – 23 species



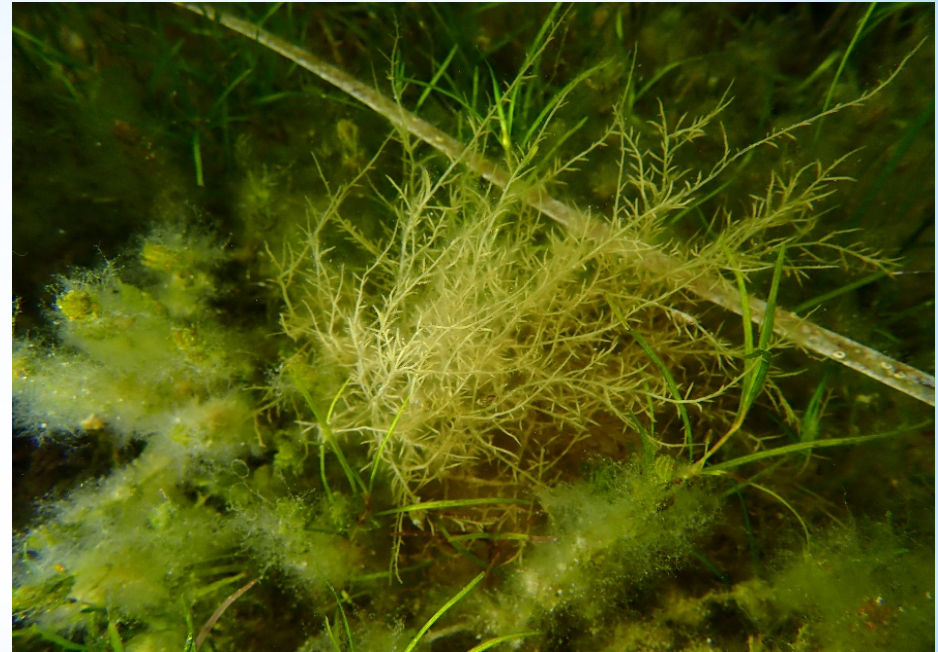
# *Epiphytic algae of seagrasses*

*Microscopic thallus*



*Hydrolithon farinosum*

*Macroscopic thallus*



*Chondria capillaris*



# Conclusions

- *During the summer period 2020-2021 23 species of epiphytic algae of seagrasses were identified : Chlorophyta – 7 species, Rhodophyta – 10 species, Phaeophyta – 1 species, Bacillariophyta – 5 species, Cyanoprokaryota – 1 species.*
- *The coverage of seagrass leaves with epiphytes depended on the age of the leaves.*
- *It was noted that annual epiphytic algae settle on sea grasses, which have time to develop during the life of sea grass leaves, although even after falling, leaves continue to function as a substrate.*

An underwater photograph showing a dense thicket of green and brown aquatic plants. The water is clear, and sunlight filters through from above, creating a bright area at the top of the frame. A white, irregularly shaped object is visible near the surface. The text "THANK YOU FOR YOUR ATTENTION!" is overlaid in the center in a white, italicized font.

*THANK YOU FOR YOUR ATTENTION!*