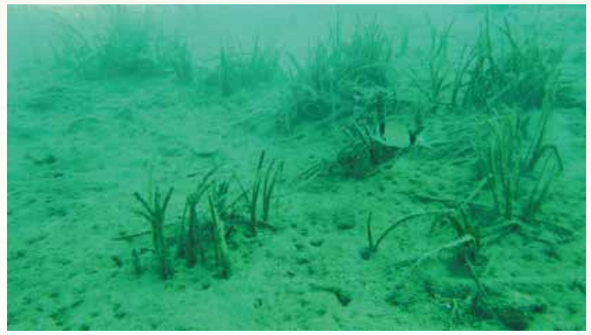
Threats

These important Posidonia meadows suffer from various anthropogenic pressures and have significantly declined, mainly since the 1950s and primarily in the western Mediterranean. For this reason, they are protected by national and European legislation. In the Habitats Directive of the EU, they are listed as «priority habitats».

Major threats are:

- Trawlers which sweep everything in their path clear away, dig into the sea floor with their huge metal «doors» (otterboards) in the opening of their sack-like net, massively uprooting the Posidonia plants.

- Suspended particles, e.g. from waste effluent or from large coastal projects such as tourist facilities, ports, etc., cloud the water or are deposited on the Posidonia´s leaves and prevent the sun from reaching the plants. The plants become stunted and slowly die out.



- Ships´ anchors uproot the Posidonia plants. Where vessels anchor repeatedly and en masse, Posidonia meadows get destroyed over time.

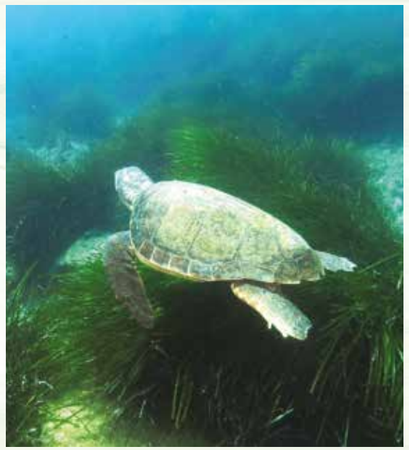
Conclusion

Posidonia meadows are a good indicator of clean and healthy seas and, at the same time, the nursery ground for numerous commercially important species.

They are the ecosystem with the highest economic value, ten times higher than tropical forests.

It is important to understand how useful these meadows are for fisheries and for protecting the coast against erosion, particularly taking into account the current sea level rise caused by climate change.

So let´s take care of our Posidonia meadows – they are precious!



Dear friends

The present brochure was created by the environmental NGO «Archipelagos - environment and development» in collaboration with the Management Unit of Zakynthos and Ainos National Parks and Protected Areas of the Ionian Islands, Argostoli branch. The pictures, the drawing and the text of this brochure were granted by members and friends of Archipelagos.

We hope that this brochure will contribute to the better knowledge of Posidonia or Neptune grass and the precious functions of this unique habitat which is a substantial part of the natural heritage of the Greek seas.

The Management Unit of Zakynthos and Ainos National Parks and Protected Areas of the Ionian islands is the 11th Management Unit of the N.E.C.C.A. It is based in Zakynthos Island, with branches in Argostoli/Kefalonia, and in Corfu, and is responsible for the protection and the management of all Protected Areas in the Ionian Region [E-mail: mdpp.ionian@necca.gov.gr].

The NGO «Archipelagos – environment and development», established in 1991, is active in the preservation of the natural environment. Among other issues, we are involved in the conservation of the Mediterranean monk seal, the registration of bird fauna, rare plants and marine resources of the area, environmental education and information of the public, etc. (www.archipelagos-org.eu). Our philosophy is best reflected in our slogan:

Destroying the environment is easy.
Protecting it is difficult and expensive
– but worth the effort.
Its rehabilitation tomorrow might be impossible.

Text and translation into English: © Aliki Panou
Drawing: © Tina Karageorgi
Pictures ©: Panagis Kavallieratos, Aliki Panou, Tulio Kokkolis, Tilemachos Beriatos, Angelos Stratis, Stelios Katsanevakis
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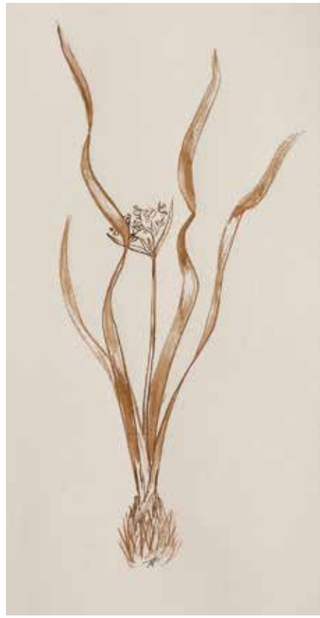
Posidonia or «Neptune grass» (Posidonia oceanica)



MAY 2025

Posidonia or «Neptune grass»

(Posidonia oceanica)

Posidonia is a marine plant growing in all Greek seas. It is often confused with algae – but Posidonia is not an alga!

Algae are lower, non-vascular plants without roots and flowers: there are green algae, brown algae (left) and red algae (right).

Posidonia on the other hand belongs to the higher plants. It has deep roots and flowers in the sea during autumn. It produces elongated green seeds that are sometimes washed up onto the beaches in early spring when they are ripe. A seed with its first little roots and shoots is shown here.

Posidonia is endemic to the Mediterranean and does not exist anywhere else in the world. In the heavily urbanized western Mediterranean Sea, it has disappeared from many places due to intensive trawling, massive coastal development, pollution, etc.

It grows in clear waters, mainly on sandy or gravel sea floors up to 45 metres of depth, thus as far as the sunlight -essential in plants for the production of organic matter through photosynthesis- can penetrate.

There, it grows in extended «meadows», large parts of the sea floor with dense plants like a forest: the Posidonia meadows.

Posidonia loses most of its leaves mainly during autumn and winter. The dead leaves are washed up by the waves on the beaches along with parts of their roots and form layers from some centimetres up to meters thick, the so-called «banquets».

The dead parts of Posidonia are often perceived as «rubbish» that needs to be removed from the beaches. Eventually, they end up in landfill at significant economic and environmental cost. Furthermore, valuable organic matter is wasted.

Cleaning activities require well-planned procedures.

Posidonia meadows and their functions

Posidonia meadows form a particular habitat (the space where various organisms live) with many important functions within the marine ecosystem: Numerous fish, shells, octopus and about one thousand other animal species find refuge and a place for reproduction here, as do ca. 400 species of marine plants.

Various other organisms such as hydrozoans and bryozoans (or moss animals)live attached on the leaves and roots of Posidonia. Posidonia meadows were once the preferred habitat of the fan mussel which, in recent years, has unfortunately disappeared from the whole Mediterranean due to a disease caused by a parasite.

With their multiple functions, Posidonia meadows are a refuge for 25% of the species in the Mediterranean. They are among the richest and most productive ecosystems on the planet and their biodiversity can even be compared with that of coral reefs.

Like all other plants, Posidonia produces oxygen that is essential to all marine organisms. The quantity produced on a daily basis -up to 15 litres per square metre- is comparable with that of the Amazon rainforest.

Posidonia meadows hold the seabed soil with their deep roots and do not allow it to be carried away by currents and waves. They also act as a kind of barrier and protect us from floods and disasters by reducing the force of the waves, at a time when sea levels are rising due to melting of the icecaps from global warming. But also, the «banquets» on the beach significantly protect the land from wave erosion, especially in winter with the storm surges.

Through photosynthesis, they capture considerable amounts of carbon dioxide (so-called «blue carbon») - even more than forests. Thus, they are particularly useful in our fight against climate change.

Posidonia leaves slow down the flow of water, facilitating the rapid settling of suspended particles, thus improving water clarity.

In Kefalonia, as elsewhere, persistent legend has it that the balls of fibrous material on the beaches are the faeces of the Mediterranean monk seal. This, of course, is not true: these are created from the hairs of the Posidonia´s roots which are swirled by the waves to round pieces very much like the balls of tar.

In southern Kefalonia and elsewhere, people used to collect large quantities of dead Posidonia, let the rain wash away the salt and then strew them onto fields as organic fertilizer. Some still use this traditional and particularly economical method of organic fertilizing.

Others have started businesses producing compost from the residues of Posidonia. There is also an innovative business close to Patra producing various items such as glass frames, mobile phone cases, etc., from Posidonia leaves, the first in the world.