

KΟΣΑ MARE



Annual Report January 2021

Kefalonian Organisation for the **Study & Awareness** of the **Marine Environment**

Welcome to the 2021 annual report for the Kefalonian Organisation for the Study and Awareness of the Marine Environment. This year we made some significant steps in our research and awareness work, from wider monitoring of the Mediterranean monk seal to data collection on invasive lionfish. We welcomed our first volunteers, who took part in a scientific diving program to study seagrass ecosystems in the north of the island. It is our hope that work like this will lead to the protection and restoration of marine habitats around Kefalonia, with benefits for biodiversity and livelihoods.

In the background, we have been continuing to develop our cultural and awareness program, with some exciting plans for 2022. In the coming year we will continue our research with seagrass and expand our volunteer program to help gather more crucial information on the marine ecosystem around Fiskardo.

We are always looking for people to get involved, so please take a look at our website, facebook and instagram for updates. You could become part of our work as a volunteer, collaborator or donor.

*Cedric Georges, President
Alma Gombert and Alex McMaster, Directors*



Monk Seal Monitoring

Since 2018 we have been working closely with the Octopus Foundation to monitor the Mediterranean monk seal on Kefalonia and the Inner Ionian Islands. It is a highlight of our year when the Swiss team arrives in the 'octo-bus' and invades the dive centre for a couple of weeks. This year, we worked fast to install a new camera system, bringing the total number of sites monitored up to five. So that the Kosamare team can efficiently repair the systems in case of a problem, Octopus technical expert Andy gave practical lessons in the garden and set us up with a full repair kit. Fortunately, as the camera systems get better and better, we only had to respond to a very small number of issues in the year that were easily resolved.

The data from the cameras was used this year by masters student, Hollie London, from the University of St Andrews in Scotland. Since the data can be accessed remotely, she was able to write a thesis on the relationship between boat activity and cave occupancy by monk seals. After completing her degree, Hollie travelled to Antarctica, where she is now working as a diver with the British Antarctic Survey.

The Octopus Foundation brought their wild enthusiasm to Fiskardo, and their photographer, Philippe, spent a number of days working with Alma and Alex to train them in underwater photography. Not only this, but they kindly donated an underwater camera and housing that allows us to take high quality photographs and video. Alex and Alma have since been gathering photographs that we intend to use in a street exhibition in Fiskardo as part of our cultural and awareness program in 2022.



*Mediterranean monk seal (Monachus monachus);
Installing the new camera system;
Andy gives a technical briefing to the team*

The monk seal monitoring program had its highlight in October, when we observed the birth of three seal pups. This is great news for the conservation of an endangered species with less than 800 left in the world. By gathering this data, it is hoped that we will be able to contribute to measures that serve in the protection and recovery of the monk seal population.

Underwater and Beach Cleaning

In the aftermath of Hurricane Ianos in September 2020, many of the beaches and harbours of Kefalonia became polluted with trash washed from the island in heavy rain. Our normal cleaning activities were heightened as we collaborated with a number of organisations throughout the year. It started in April when we joined Aegean Rebreath in a huge clean up of Sami harbour. Shortly afterwards, we carried out our usual cleaning of Fiskardo Harbour. Our intern, Charlotte, counted and divided the trash so that we could get an idea of the kind of waste entering the harbour. She found that almost half of the items collected were plastic, with the second highest portion being glass.



Trash collected from Sami Harbour with Aegean Rebreath; beach cleaning near Agia Jerusalem with PAL.

By far the largest initiative we have taken part in this year was the clearing of an abandoned fish farm on our neighbouring island of Ithaca. Led by the Dutch NGO, Healthy Seas, over 30 divers were joined by a shore team for one week on the east side of Ithaca. The operation involved a crane and barge, several boats and a vacuum cleaner! Kosamare staff and volunteers were mostly involved with clearing polystyrene from two beaches, which is a major component of the floatation buoys used in fish farms. The operation was recorded by the BBC, who made a short documentary.



We were financially supported in our cleaning work this year by Political Animal Lobby, who joined for cleaning work near Jerusalem Bay and in Fiskardo Harbour. We also worked on small beaches near Fiskardo and in the north of Ithaca. In one day of cleaning we gathered approximately two tonnes of plastic waste. With several beaches inaccessible except for by boat, we were making multiple journeys in the Fiskardo Divers RIB, Monachus, to transport waste from the beaches, which was then dealt with by the municipality.



Volunteers collect polystyrene on Ithaki. Photograph by Ghost Diving.

Later in the season, we worked with Aquatic Dive Centre and Project Plastic Extinction to clear some of the large items swept into Agia Efimia harbour during last year's hurricane. With the help of a crane, the two dive teams worked together to lift a sunken boat, as well as bins, trees and windows from the harbour. A few days later, the team from Project Plastic Extinction joined us to clear the remains of an abandoned refugee camp in the north of the island. This was a camp that was left a few years ago, with many personal belongings, tents and blankets left behind.

Seagrass Surveys

Posidonia oceanica is a flowering plant that covers much of the coastal seabed of the Mediterranean. It is a crucial ecosystem for the support of fish life, stabilisation of the seabed, and protection of coastlines. It is also a huge carbon sink, absorbing up to 35 times more carbon than tropical rainforests per area. But the seagrass meadows in our area are being damaged by anchors from recreational sailing and motor yachts. This has wider effects for the marine environment that even extends to affect small scale fishing livelihoods.

To understand the situation facing *Posidonia* ecosystems in our area, we have been working to develop and practice a survey methodology that can be easily carried out by divers. Using simple equipment, we are able to assess *Posidonia* health and coverage, as well as the abundance and biomass of associated fish populations.

As we developed the method, we are already seeing significant damage in the bays around Fiskardo that are heavily used as anchorages. Foki and Kimilia bays are significantly deteriorated, as well as Emblissi and Dafnoudi. It is our aim to expand this research in the coming season, and to use the information we gather to inform a restoration project in the near future. Restoration has been successful in the Balearic Islands and in parts of Spain. But they have not yet taken place on a large scale in Greece. By installing permanent moorings, these projects have been able to reduce the need for anchoring in fragile habitats. It may even be possible for seagrass to be actively replanted by divers, as has been done elsewhere in Greece and wider Europe.

There will be a lot of information appearing on our social media and website during 2022 about the research we are doing on *Posidonia* seagrass. Keep a look out!



Divers survey *Posidonia oceanica*; the degraded seabed in Foki bay; a healthy seagrass meadow.

Volunteer program

In May we welcomed our first volunteers to the island from universities all over Europe. Staying for two or three weeks, they participated in a training course in scientific diving and were able to assist with our research on *Posidonia* ecosystems. The volunteers also learned about other aspects of our work, like the monk seal monitoring program, and took part in beach cleaning activities. Some of the volunteers were not divers when they arrived, so we provided them with training to a basic level that allowed them to contribute to the surveys.

We received some really good feedback from the first volunteers, and are using this to adapt the program for 2022. The focus for this season will be on training students with our PADI Introduction to Scientific Diving Speciality course. They will then take part in daily surveys of *Posidonia* and fish biodiversity assessment throughout their visit. With the help of this year's volunteers, we will be able to carry out meaningful research that contributes to the protection of our seagrass meadows and the ecosystems they support.

There is information on our website for anyone interested in taking part!

Invasive species

Last year our annual report provided a summary of lionfish invasion taking place in the Eastern Mediterranean. Lionfish threaten native marine species through their generalist diet, high reproductive rate and long range of larval dispersion. They possess a set of poisonous spines that makes it difficult for predators to hunt and consume them.

Divers and fishers are well placed to record sightings of lionfish. Since they do not move a lot, they can be seen several times in the same location. We worked with local dive centres in the Ionian Islands to gather data on lionfish sightings, collating information that could then be shared with our collaborators at the Hellenic Centre for Marine Research. In total we recorded 191 individuals between Fiskardo Divers, Aquatic Scuba Diving Club, Blue Manta Diving and Aquanautic Club, and Odyssey Diving Club. Our database includes information on size and location, which can help to track the spread of the species.

We have also been working with fishers throughout the island to gather information on the location of lionfish, as well as collecting specimens. It is our intention to use this information to advocate for an eradication program that removes lionfish and uses them as a source of food. Once their spines are removed, they are delicious to eat. A similar invasion took place in the Caribbean and promoting the use of lionfish as food has been a large part of minimising their impact.

To culminate this year's efforts with the lionfish, Alma presented our work at the East and South European Network for Invasive Alien Species symposium in December.



A medium sized lionfish; collecting an injured turtle from a sailing boat

Animal Rescue

While we do not have the facilities to deal with injured animals, we are always available to rescue animals at sea and work with our partners for their treatment and rehabilitation. During the 2021 season we were called twice by sailors to collect turtles that had become entangled in fishing lines. The Loggerhead turtle (*Caretta caretta*) is often seen around Kefalonia and is threatened by boat collisions and entanglement in fishing gear. The turtles were collected by Wildlife Sense and taken to their station in Argostoli, where they were able to recover. Unfortunately, we also discovered the body of a turtle that had drowned after becoming wrapped in a fishing line near Fiskardo. On a more positive note, we sighted several healthy turtles while diving in the north of Island this year.

In Fiskardo itself, we have been feeding the village cats and once again provided a large feeder for the harsh winter. We were also able to take some cats to Argostoli for sterilisation.



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