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IMPROVING EEL MANAGEMENT IN THE MEDITERRANEAN

TAKING ACTION FOR EEL

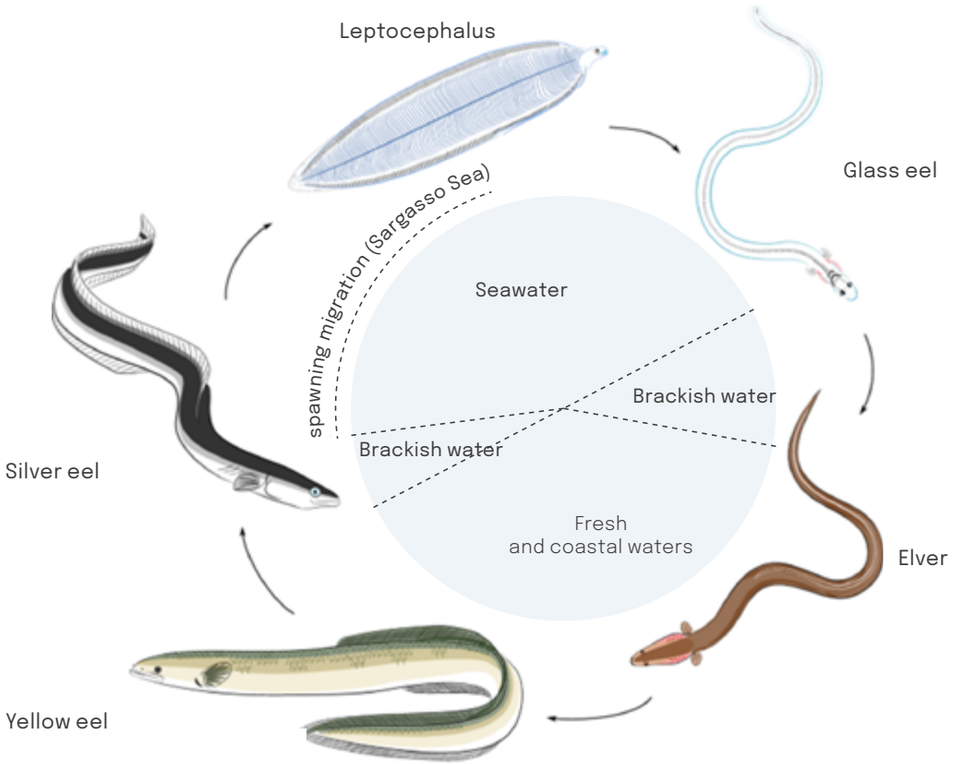
A CALL FOR STRONGER RECOVERY MEASURES IN THE MEDITERRANEAN

The European eel (*Anguilla anguilla*) is a remarkable and enigmatic species that has fed people and the human imagination for millennia. It is one of 15–18 species of eel found around the world.
All European eels belong to the same, very widespread population inhabiting coastal and inland waterways from the Baltic region to the Mediterranean, including the north and north-western parts of Africa.

Since the 1960s, European eel has declined dramatically and recruitment - the spawning and survival of young eels, which can then grow into adult eels and one day give rise to new eels – is now very low. Today, only 0.5 percent of historical numbers of glass eels arrive in the North Sea region and less than 10 percent elsewhere in Europe[1].
Changes in the marine environment, such as ocean currents and rising temperatures, as well as overfishing, habitat destruction, pollution, parasites and hydro-electric power turbines have all contributed to the sharp decline in the once so abundant eel population.

1. ICES. 2023. European eel (*Anguilla anguilla*) throughout its natural range. In: Report of the ICES Advisory Committee, 2023. ICES Advice 2023, ele.2737.nea, doi.org/10.17895/ices.advice.21907860.

THE LIFE CYCLE OF EUROPEAN EEL



The life cycle of European eel and the journey it undertakes is amazing. After spawning in the Sargasso Sea, the newly hatched larvae begin a passive 5 000 km ocean migration towards European and Mediterranean continental waters. After about two years, the young larvae transform into translucent glass eels, many of which will migrate into freshwater habitats, gradually transforming into yellow eels as they grow.
Several years later, the mature adults transform once more into silver eels and begin their return trip. The silver eels will leave inland and coastal waters and migrate back to the Sargasso Sea, where they spawn, i.e. lay eggs, and die.

Since 1970, over 50 percent of European eel habitats have been lost, with the greatest loss observed in rivers, mainly due to migration barriers, such as dams. In Spain, Turkey and France large proportions of eel habitats are no longer accessible.

Still, the European eel is found in almost every European country and throughout the Mediterranean, linking habitats as divergent as the high seas, coastal waters, lagoons, large lakes and small ponds, big rivers and the smallest streams. However, stock abundance and fishing yields have declined by about 5 percent annually, down to less than 10 percent of their historical levels[2]. Despite being so depleted, its exploitation remains a source of income and employment.

2. Dekker, W., 2019. The history of commercial fisheries for European eel commenced only a century ago. Fisheries Management and Ecology, 26: 6–19. doi:10.1111/fme.12302.

INTERNATIONAL MANAGEMENT FRAMEWORK

The European eel has been listed as Critically Endangered by the International Union for Conservation of Nature (IUCN) since 2008[3] and is currently the focus of several international and national conservation measures.

In 2007, the European Union agreed on a recovery plan[4] and European eel was included in the CITES Appendix II for species threatened by international trade[5]. As a result, a unilateral EU trade ban was put in place in 2010, and is still in force.

European eel is also listed under Annex II of the Convention on Migratory Species (CMS), as a species that would benefit from international cooperation.

The EU recovery plan and other measures, such as the annual eel fishing closures first agreed in 2017 and the transitional management measures adopted the following year by the General Fisheries Commission for the Mediterranean (GFCM)[6], have all strengthened the management

framework for European eel. So far, however, the eel population shows little sign of recovery. While the decline may have slowed down, recent years have seen the lowest recruitment levels ever recorded[7] in the Mediterranean and elsewhere, and a recent scientific assessment[8] showed no overall progress on the objective of the EU recovery plan, indicating that more needs to be done.

3. Pike, C., Crook, V. &Gollock, M., 2020. Anguilla anguilla. The IUCN Red List of Threatened Species 2020: e.T60344A152845178.
4. EU. 2007. Council Regulation (EC) No. 1100/2007 of 18 September 2007 establishing measures for the recovery of the stock of European eel. Official Journal of the European Union, L 248: 17–23. data.europa.eu/eli/reg/2007/1100/oj
5. FishSec, 2022. Time to stop fishing and start restoring habitats - zero catches and zero anthropogenic mortality advised for European eel. Press Release; GFCM, 2023. European eel in the Mediterranean sea. Outcomes of the GFCM Research programme.
6. Recommendation GFCM/42/2018/1on a multiannual management plan for European eel in the Mediterranean Sea, www.fao.org/gfcm/decisions/en/.
7. SAC, 2022. General Fisheries Commission for the Mediterranean – Report of the twenty-third session of the Scientific Advisory Committee on Fisheries, FAO headquarters, Rome, Italy, 21–24 June 2022. FAO Fisheries and Aquaculture Report No. 1395. Rome. doi.org/10.4060/cc3109en.
8. EU request for technical evaluation of the Eel Management Plan progress reports. In Report of the ICES Advisory Committee, 2022. ICES Advice 2022, sr. 2022.07. doi.org/10.17895/ices.advice.19902958

EEL MANAGEMENT IN THE MEDITERRANEAN

Since 2018, the GFCM has been on the forefront of European eel management and conservation, taking steps going further than those adopted by the European Union, which also apply to key eel fishing countries such as Egypt, Turkey and Tunisia. Measures currently include a >30% reduction in fishing effort or catches, a total ban on recreational fisheries and a six-month fishing closure.

However, it is unlikely that the recent strengthening of these measures will secure eel recovery. They are still far from aligned with the scientific advice of zero catches provided by the International Council for Exploration of the Seas (ICES)[9] and the call for implementing additional measures addressing glass eel fisheries from the GFCM Scientific Advisory Committee.

In order to formulate scientific advice on eel management in the region, the GFCM requires Contracting Parties to submit catch data each year. In 2020, the GFCM launched a regional eel research programme to identify suitable management and protection measures, as well as establish a joint framework for long-term monitoring.
The preliminary results highlighted the continued lack of consistent reporting on, for example, eel catches and fishing effort, that is not only a major obstacle to transparency and accountability but also for the sound management of a critically endangered species.
Despite repeated calls for better reporting, the data remains piecemeal, with countries like Egypt, Turkey, Montenegro, Libya and Tunisia providing only some or none, and even EU countries failing to report consistently.

Moreover, illegal fishing and trafficking are further undermining eel conservation efforts. The GFCM Compliance Committee has been tasked with playing a stronger role in assessing the level of implementation and compliance with measures, and require States to meet their management obligations and fight illegal eel fishing.

9. ICES, 2021; 2022; 2023 – the scientific advice on fishing opportunities for European eel has been zero catches for all life stages and in all habitats for these past years; and before that “as close as possible to zero” for almost 20 years.

THE NEED FOR FURTHER RECOVERY MEASURES

While the Mediterranean region has been moving ahead in recent years, adopting progressive eel management measures, these are likely insufficient to ensure the recovery of this critically endangered species for the future of eels and fishers.

Until a clear recovery can be seen in the population, a full fishing closure should be introduced in line with current scientific advice. If this is not politically feasible, a total closure of the glass eel fishery to protect recruitment and a better application of the eel fishing closures to protect the spawners, should be applied as first steps.
Fishing for glass eels in the Mediterranean can no longer be justified given the low recruitment levels, as stated by GFCM eel research programme, which also support a reduction of all glass eel fishing mortalities to zero[10]. Spain and Italy are the only countries in the Mediterranean with glass eel fisheries[11], although catches are limited.

In 2024, the GFCM is expected to adopt a long-term management plan for European eel in the Mediterranean Sea. To protect the future of this iconic species and the fishers that rely on it, these measures should

include, as a minimum:

- a ban on glass eel fishing in all Mediterranean waters to protect recruitment;
- alignment of the six month closures with peak migration periods to protect the spawners;
- better implementation, reporting and compliance with management measures;
- better traceability and control to curb illegal fishing activities;
- addressing, together with the UNEP Mediterranean Action Plan program (UNEP/MAP), the restoration of key eel habitats in marine waters, including aspects such as water quality and pollution.

The GFCM Contracting Parties should also extend efforts to restore and protect key eel habitats into freshwater.

10. "*Given such low recruitment levels, carrying out any type of fishing activity for glass eels in the Mediterranean for any use, including for restocking, does not seem to be justified*". In: Ciccotti, E. & Morello, E.B. (eds). 2023. European eel in the Mediterranean Sea – Outcomes of the GFCM Research programme. Studies and Reviews No. 103 (General Fisheries Commission for the Mediterranean). Rome, FAO. doi.org/10.4060/cc7252en.
11. GFCM, 2023. European eel in the Mediterranean Sea. Outcomes of the GFCM Research programme.

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