THE PLIGHT OF THE EUROPEAN EEL

AN INVESTIGATION INTO EEL CONSERVATION IN THE STATE OF SCHLESWIG- HOLSTEIN

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THE EUROPEAN EEL IS UNDER THREAT

The European eel (Anguilla anguilla) is a "critically endangered" catadromous species. Even today knowledge is lacking surrounding its complex ecology, life cycle and migration patterns. This lack of understanding has led to difficulties in implementing successful management and conservation of the species and numbers have declined by 95% since the 1960s due to increased anthropogenic stressors. Threats include:

- Overfishing
- Pollution
- Climate change
- Habitat degradation
- Hydro-power stations hindering migration routes
- Parasites introduced from farmed eels

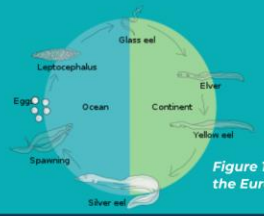

Figure 1: Life cycle of the European Eel

THE SITUATION

The species is distributed throughout the Baltic in the HELCOM area in coastal zones, rivers, streams, and lakes. It is currently listed in CITES and the exportation of the species outside the EU is prohibited.

.On a regional level, Schleswig-Holstein regulates the eel population through eel stocking. Stocking is the practice of adding eels to a waterbody from another wild source to supplement existing populations or to create a population where none exists.

The Elbe-Lübeck canal has been stocked since 2006 with glass and pre-farmed eels. As eel maturation can take 14 to 20 years, long-term monitoring is a critical part in order to evaluate stocking programs. Long-term monitoring revealed that 90% of eels in the area have been stocked. Without that the population would have collapsed.

MEASURES ARE NEEDED ON AN INTERNATIONAL SCALE

Threats to the animals occur in all life stages and at all stations of their migration routes. Thus, international cooperation and management action is needed, which so far is lacking.

National mitigation measures include:

- The ban or restriction of eel fisheries
- Habitat improvements: e.g. achieving passability of running waters and improvement of water quality
- Eel stocking
- Seasonal shut down of hydropower stations
- Management of the great cormorant and other predators

OUR PROJECT

The aim:
To raise awareness about the conservation status of the European Eel and to provide a critical evaluation of eel stocking in the Baltic and Schleswig-Holstein regions.

How?
The documentary: A short film was produced following eel stocking, eel farming and interviewing experts from the Thünen research institute and the Landessportfischerverband SH.

The petition: Developing a petition to remove the Schleuse Achterwehrer Schifffahrtskanal barrier.

Figure 2: Filming eel stocking in Einfelder See. Figure 3: Eel monitoring in Elbe-Lübeck canal

THE CONTROVERSY

There is a controversy between scientists and fisheries as to the efficacy of eel stocking for the preservation of the species. A criticism of eel stocking which has originally been established to support fishery, is the high mortality rate (15-40%) when catching glass eel.

The eels are brought to fish farms to be grown before they are stocked resulting in additional mortality. The fishing association state pre-farming could reduce the natural mortality at this stage in life.

When the eels arrive in Europe, certain areas record particularly large numbers. It is argued that it is sensible to distribute them into several suitable areas to make to biggest use of the available individuals. This would only be true, however, if the carrying capacity of the natural glass eel arrival is exceeded or if other habitats are of higher quality, a fact that is not scientifically proven.

It is argued that without stocking the eel population would have collapsed in many regions, like the Elbe-Lübeck canal with adverse impacts for the habitat. Fishery associations like the LSFV also play a role in collecting vital data for much-needed research.

EVALUATION: DOES EEL STOCKING MAKE SENSE?

So far, there is still a lack of scientific studies and evaluation regarding the success or failure of the method. From a conservation point of view, eel stocking only makes sense if specific conditions are fulfilled i.e.

- The carrying capacity of the natural arrival of glass eel is reached in certain areas. Considering the significant drop in numbers, this remains questionable.
- There is international coordination to develop criteria and choose the most suitable bodies of water to produce mature eels (e.g. low pollutants, few predators, none or low fishing activity, no obstacles for migration)
- More research is needed to prove a positive net effect: the high mortality during the initial catchment and transport must be offset by a higher production of mature eel

FURTHER RESEARCH IS NEEDED

Even today, there is still a significant gap in knowledge about the ecology of the eel. Researchers lack reliable data to evaluate the effectiveness conservation measures like eel stocking. Thus, long-term monitoring and the collection of data is of key importance to create successful management strategies.

It is unclear whether stocking contributes to the recovery of the species. Therefor it is suggested to apply the precautionary approach and concentrate efforts on measures that are proven to increase escapement which includes the reduction of eel fishing. This could be realized with the support of compensation schemes for fishermen for example. After a certain period of time the effect of the reduction should be evaluated and measures can be adapted.

Furthermore international coordination is needed to develop a cohesive protection plan of the species beyond national boarders in order to secure the future of the species.

please scan for references

MEET THE TEAM

Link to documentary:

Link to petition: