



**The Quarterly  
Magazine of  
Fisheries  
Management**

# FISH



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# Eels in society, Is the European eel adequately protected?

– Dr Willem Dekker

The stock of the European eel (*Anguilla anguilla*) is currently in a difficult and uncertain condition. Twelve years after the adoption of a European action plan to protect the eel, it is time to review what has been done, and what has been achieved – and to consider the next steps. Is the European eel adequately protected?

The [Sustainable Eel Group](#) (SEG) is the European non-profit organisation, working on the acceleration of the recovery and responsible management. SEG requested [Dr. Willem Dekker](#) of the Swedish Agricultural University in Stockholm, to evaluate the past and current situation. He played a key role in bringing the eel problem to the political attention in the 1990s, and had a leading position in the design of the protection framework in the 2000s.

## History of the European eel fishery

Just over a hundred years ago, eels occurred in all rivers, lakes, ditches and marshland, all over the United Kingdom and Ireland, even all over Europe – eels were exploited by small-scale farmers, supplying a welcome source of food and fat. In England, a thousand years ago, eel fisheries were recorded in the Domesday Book, as a source of income to be taxed. Those eel fisheries were found at watermills, and probably also at dams and in some lakes, all over the country - near the coast but also all over the Midlands. By the end of the 1800s, however, water works increasingly had blocked





the immigration of young eels, water pollution increasingly troubled the production, and the small-scale fisheries largely vanished.

The fisheries adapted to the changing circumstances in the early 1900s, shifting focus to larger waterbodies closer to the sea, and developing new and larger fishing gears. It was in this period that the famous large-scaled eel fisheries in mainland Europe developed (the Baltic lagoons, the major rivers, many lakes), and that modern fishing gears emerged from their smaller and simpler predecessors.

Additionally, the “invention” of modern eel-smoking (in contrast to the dried or salted eel of before) turned this low-priced poor-man’s-food into a luxury product, for wealthy city customers. The UK played a relatively minor role in this, due to the distance to the main markets in central Europe, but eventually the modernisation penetrated here too.

This modernisation of the fisheries, however, did not stop the further degrading of inland waters, and the continuation of the decline of the eel stock. Until the 1960s, intensification, modernisation, and expansion of the fisheries more than compensated for the ongoing decline – the eel fisheries essentially prospered, hardly aware of the looming future. Since the 1960s, however, commercial catches have consistently been in decline. From over 20,000 tonnes in the 1950s, to not more than 2,500 tonnes now in Europe as a whole (circa 5% down per year, on average, for decades and decades). From around 2,500 tonnes in the UK before World War II, to around 400 tonnes in recent years – all now mostly from Lough Neagh in Northern Ireland. In addition to this, the situation deteriorated rapidly after 1980, when recruitment of young eel from the ocean crashed, falling down (circa

15% down per year, on average) for thirty years in a row! Though the details differed from site to site, this decline was observed all over Europe. The problem to manage, to protect and recover the eel stock is essentially a shared, European problem!

### Introducing protective measures

As early as 1850, people were aware that the eel stock was in decline, and actions were undertaken to mitigate or compensate the decline. Though the fishery expanded and prospered, the stock itself was not adequately protected, and slowly, slowly – very slowly – the stock declined. In the early 1990s, the need to protect the eel finally became recognised and unavoidable – but what to do? Specific protective actions in one country were impossible or ineffective in another. What appeared to be a main problem in one country (e.g. desertification in Spain), was irrelevant in others (e.g. Scandinavia, where hydropower and other migration barriers have much more importance). For years, the discussions continued, discussing different solutions (e.g. summer-closure of the fisheries, or a winter-closure? Setting a minimal size for all of Europe?).

By 2007, finally, a European action programme was adopted, that addressed both the urgent need to protect, as well as the diversity in impacts and circumstances. This European action plan comprised two actions: on the one side (the EU Eel Regulation, the internal protection plan), all EU Member States were obliged to develop a national eel management plan, adapted to their local circumstances but with a uniform goal (reduce impacts and mortalities, so as to enable a recovery). On the other side (CITES listing, setting international trade restrictions), the import/export of eel to/from the EU was regulated, in order to avoid that excessive international trade would undermine the internal-European protection programme - since 2010, the import/export to or from the EU has effectively been banned completely.

### Many threats for the eel

Commercial and recreational fisheries, water management, water pollution, migration barriers at sluices and pumps, new parasites

and diseases, cormorants, possibly climate change in the ocean – all of these factors are potentially involved in the decline of the stock. Eel management is not a simple issue, and national Eel Management Plans have to deal with all of these impacts. Europe has an open internal market: young eels, caught in one country, can easily be transported to another, and then flown to China. Police- and customs-actions within different countries are quite effective, but transport from one EU-member country to another brings you from one administrative region to another – and crossing the border, the paper-trail is often completely erased. After the trade of young eel to Asia was banned in 2010, illegal export began – or more correctly, the trade that was legal before, continued on an illegal basis. What is the largest wildlife-crime in Europe, in money terms? Yes, indeed: eel smuggling to Asia.

### **The Eel Regulation turns out a success**

Now, in 2020, after a century of negligence and decline, the EU eel policy appears to be a success: awareness of the situation is growing; protective actions are taken all over Europe; and debates on the causes, available options, and potential consequences have intensified. What has been the key to this accomplishment – that is: why did the Eel Regulation and the CITES listing become a success, where all earlier attempts (in the 1800s and 1900s) failed? First of all, this is a coordinated protection plan, covering the whole of Europe (and more). At the same time, it is not an authoritarian approach, dictating over-simplified actions to all involved. Instead, while the objectives and targets have been set internationally, the responsibility for implementing tailor-made action is handed over to national governments, triggering societal discussions between countrymen-stakeholders. And finally, the Eel Regulation advocates a comprehensive approach, addressing fisheries (legal and illegal, commercial and recreational), habitat-related issues, hydropower, and whatever impacts more. However, ten years after the start, it is also clear that both the EU Eel Regulation, and the CITES listing currently are having implementation problems and are not yet achieving the full desired effect. For the Eel Regulation, fisheries have been reduced, but non-fishing actions are

much harder to achieve (hydropower, water management, pollution etc.). For the CITES listing (closing the trade across outer borders of the EU), the discovery of extensive smuggling networks that violate the trade ban demonstrate the need for increased effectiveness. Have we paid a high price, but delivered too little, so that all of this is in vain and the eel demise is unstoppable?

### **When would the tide turn?**

In 2007, the political decision to protect the eel was taken in Brussels and the EU Eel Regulation was implemented in 2009. That year, the very first eels (silver eels) were actually protected; in 2011 (two years of ocean migrations later), the first positive effect could have occurred. Lo and behold, that was exactly what we observed! Since 2011, the thirty-year decline in recruitment of young eel from the ocean halted, turning into a slight but statistically significantly increase. Though the stock is still only a fraction of what it has been before, this indicates that protection policies can have an impact, and complex problems can be reversed, even if they involve all of Europe.

It will take a long time to achieve the full recovery (another period of thirty years? Or more?), and we have to acknowledge that so far it has only been a short range (8 years) yet of upward trend. Additionally, we have to face the fact that the level of protection for the eel is not yet as good as we intended to achieve, in many countries. The Eel Regulation is effectively providing a framework and setting a target, but not all EU Member states have implemented it effectively. At the bottom line, however, it is very hopeful to note that the trend is as positive as could have been expected – we could not realistically have expected much more. This improving picture strongly urges all parties involved, to implement the eel protection policies further and to polish up what actions have already been taken, all over Europe. Then, there will be good hope that the recruitment of young eel will increase even further!

Anyway, after more than half a century of gloomy deterioration, there are now good reasons for optimism: we've got the eel by its tail again!

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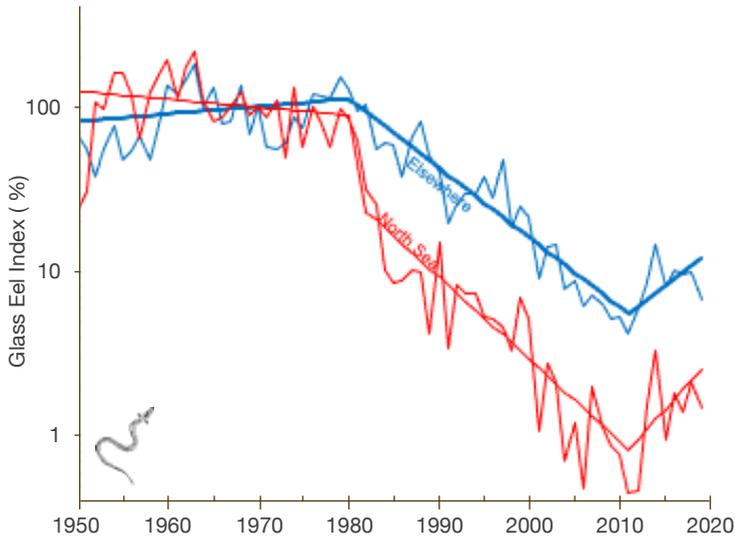


Figure 1 Trends in the abundance of young eel arriving at the European continent (Data: ICES 2019; linear trend lines added for 1950-1980, 1982-2011 and 2011-2018. Note the logarithmic scale of the vertical axis).

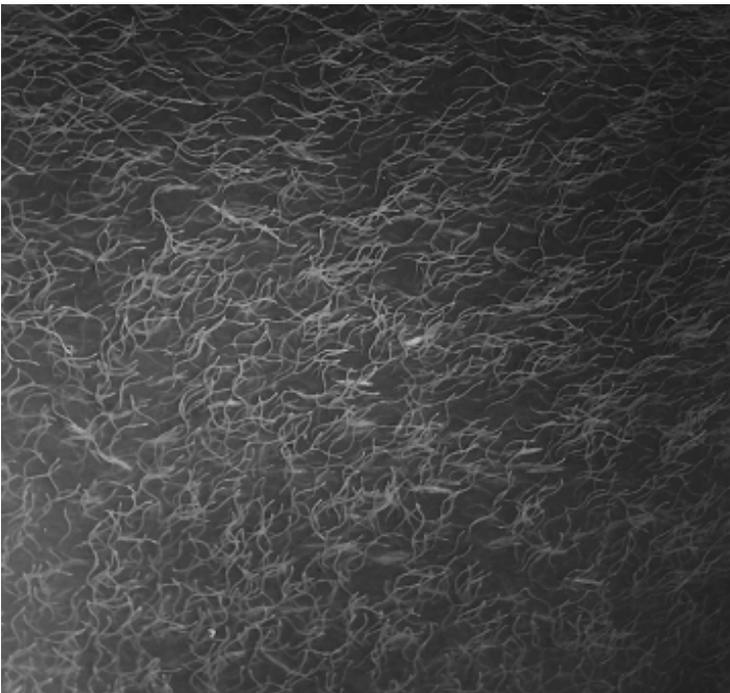


Figure 2. Young eel, in front of the Dutch coast – this photograph was taken in April 1958. Until 1980, abundances like this were the normal situation. Since, the recruitment of young eel gradually declined, to just one percent of this.



The painting "Proverbs" (1559) by Pieter Brueghel the elder (c.1525 – 1569), and a detail.



"We've got the eel by its tail again – Dutch proverb indicating "to achieve the impossible".



*Two silver eels along the Swedish east coast, on their way towards the Sargasso Sea.*

