

# North Sea Advisory Council



## NSAC Advice Ref.13-1617

### Letter to the Director General of Fisheries Concerning the State of the European Eel

This advice was approved by the NSAC Executive Committee via a written procedure on the 5th September 2017. This is not consensus advice. A minority position is presented in the final section dealing with fisheries management measures in marine waters.

This letter presents the views of the NSAC on possible ways forward in protecting the European eel, prepared in response to the letter of consultation from the Commission on this topic. The reply takes account of the answers provided in the ICES Advice in response to the EU request to provide advice on fisheries-related anthropogenic impacts on eels in EU marine waters (Published 8 May 2017).

***Although some members of the NSAC are involved in national groups that have been formed to examine eel management issues, a full range of eel stakeholders is not represented within the NSAC. Therefore, the NSAC recommends that the Commission also seeks the advice of stakeholders with specific knowledge about eels.***

The EC Eel Regulation (EC, 2007) requires each Member State with eels to produce Eel Management Plans (EMPs) with the long-term objective of “*reducing anthropogenic mortalities so as to permit with high probability the escapement to the sea of at least 40 % of the silver eel biomass relative to the best estimate of escapement that would have existed if no anthropogenic influences had impacted the stock*”. The Regulation also prescribes that there should be a 50% reduction in marine catches or in effort compared to the 2004–2006 average. ICES reports that the reduction in these marine catches has been attained for some countries, but information from many other countries (including non-EU countries) is not available. ICES reports that many Eel Management Plans (EMPs), as submitted in 2015, are not yet achieving the EC Eel Regulation biomass escapement targets for the defined management units (the country as a whole or watershed areas).

ICES has emphasised that exploitation of eels in marine areas is only part of the overall anthropogenic impact. ICES considers that, given the current status of the eel stock, the



prescribed 50% reduction in marine catches/efforts is not likely to achieve the objectives for the Common Fisheries Policy (CFP) **as the reduction only applies to exploitation by marine fisheries**. According to ICES, a number of the EU Member States (including some North Sea Member States) have not provided full information on spawner escapement for their Management Units. ICES also mentions that the values of current reported biomass of escapees are uncertain and incomplete and not suitable to provide stock-wide estimates by main maritime area or sea basin. ICES further notes that catches in marine waters can be quantified, but the effect on spawning potential and stock recruitment cannot be estimated.

***The NSAC advises that all Member States should fulfil the basic requirement of data provision within their respective Eel Management Units, including data on marine catches, as well as improving data collection outside of the EMUs. This will allow ICES to provide better estimates of eel escapement. Then the potential effects of various measures can be better estimated.***

ICES advises that none of the measures proposed in the EU request to reduce eel fisheries in EU waters seaward of the baselines would be enough to achieve the 40% escapement target. Fishery-specific management measures aimed at reducing fishing mortality for both yellow and silver eels in the marine environment would likely have a positive impact on the stock, with measures for silver eels having the most immediate effect. ICES could not identify any management measures for human activities in the marine environment, other than fisheries, that could be taken to protect eel escapement in support of the recovery of the stock. ***Other sources of mortality, including commercial and recreational fisheries in freshwater habitats, were not considered in the ICES advice, as the Commission only requested advice on fisheries-related impacts on eels in EU marine waters. Analysis of the effects of other factors, including the catches of wild elvers and glass eel (taken for transfer to hatcheries and the restocking of rivers) should also be taken into account when considering management options for the European eel. Restocking is a conservation measure, intended to improve eel production.***

***Though ICES advises that fishery-specific management measures in the marine environment are likely to have a positive impact on the stock, there are differences of opinion within the NSAC on the extent to which this may be the case. There is concern by industry representatives that the low productivity of the stock may be the result of low survival of silver eels after they leave the fishing areas – i.e. on the migratory routes to the Sargasso Sea and that further measures affecting marine fisheries will achieve very little. There is, however, agreement within the NSAC that measures to reduce fishery-specific mortality should be supplemented by intensified measures in other sectors. Ensuring the recovery of the European eel stock requires a holistic approach to management, as many other factors are contributing to the mortality of eels. National Eel Management Plans have to take account of all causes of mortality to eels. It is now ten years after the implementation of Council Regulation 1100/2007, establishing measures for the recovery of the stock of European eel and requiring national Eel Management Plans. Each EMP should now be assessed in terms of its achievement of any decline in eel mortality.***

The most relevant impacts on the eel stock, in addition to mortality caused by marine fisheries, include:



## 1. Habitat Reduction and Reduced Survival in Fresh Water Habitats

In many Member States, habitat availability for eels has been reduced to such an extent that the 40% escapement target cannot be reached. However, reduced habitat availability is not only caused by permanent habitat loss. The upstream migrations of juvenile eels may be seriously inhibited by the presence of dams and other barriers associated with water management, hydropower turbines, water pumps etc. The downstream movements of adult silver eels may also be affected, with high eel mortalities often taking place at pumping stations for water management and hydropower turbines. The effects of these migratory barriers can be mitigated. For example, by employing fish passes and ladders specifically designed for eels, by diverting silver eels away from pumps and turbines, or by adjusting the operating regimes of such facilities to avoid periods when large numbers of eels are migrating. By these means, habitat availability and eel survival can be greatly increased. Unfortunately, progress on this in some Member States has been limited – particularly where expensive engineering is required to enable migration past the many thousands of dams and other obstructions that exist across Europe. ***Greater attention must be paid to increasing the freshwater habitat available for eels by promoting their free upstream passage through rivers, and ensuring maximum survival.***

## 2. Recreational Eel Fisheries

Throughout the distribution area of eels, recreational eel fisheries have developed. Many anglers and recreational fishermen catch eels, often in freshwater habitats. However, ICES has stated that the impact of these fisheries on the stock is largely unknown. It could be that the total landings by recreational fisheries in some areas exceed the commercial eel fisheries catches. ***There is a need to monitor catches taken by recreational fishers, and in some cases there may be a need to further regulate the recreational fisheries and to ensure that existing regulations for the recreational fisheries are adequately enforced. It is also advisable to evaluate the impact and relevance of catch and release measures for recreational eel fisheries.***

## 3. Commercial Fisheries

ICES has suggested that glass eel fisheries have a negative impact on the recruitment and subsequent adult biomass, and the impact may be significant. The European eel has been listed in Appendix II of the Convention on International Trade in Endangered Species (CITES) since 2007. Despite this listing, the trade in eels, mostly glass eels, is still of considerable concern. Even though glass eel catch recording systems are set in place, the destination of about 32% of the 2015 catch was not recorded<sup>1</sup>. In the light of this: ***Better monitoring and control of the glass eel fisheries and associated trading of glass eels is urgently required to ensure that management measures are being implemented. This is also very important in the light of the obligation within the EC Eel Regulation (EC 1100/2007)***

<sup>1</sup> Report of the ICES Working Group on Eels (WGEEL) 2016



***which requires that 60% of the glass eels caught should be reserved for restocking purposes within the EU.***

ICES observed that the best possible silver eel escapement ( $B_{best}$ ) has not been realised by most Member States. This would not only require resolving the problems posed by migration barriers but also reducing (freshwater) anthropogenic mortality. So, even though it can be argued that the full escapement target is not feasible due to reduced habitat availability, at least the anthropogenic mortality should be reduced sufficiently to a level to allow for a recovery of the eel stock. ***Management of eel fisheries should be further improved in order to reach 40% escapement of silver eels ( $B_{best}$ ) within all Member States. Reduction of eel mortality at all life stages is necessary to reach the best possible escapement target. The NSAC recommends that the Commission examine the way eel management is undertaken in the different Member States to identify those management regimes that have proved to be most successful.***

#### 4. Increased Predation Levels

A number of predatory species, both in fresh water and in the sea, have increased in abundance in recent years<sup>2</sup>. They include some predatory birds, fishes, otters, seals and cetaceans. These increases may have resulted in higher levels of natural mortality for European eels. The German and Dutch fisheries sectors are especially concerned about the impact of predation by cormorants on recovering stocks. Cormorant colonies can be very large and may therefore cause locally significant eel mortality. In general, the European eel is a small part of the cormorant diet (approximately 7%). A study covering 19 European countries estimated that cormorants consume 2-5000t of fish yearly (ICES CM 2006/J:06). It is important to note, however, that many of the predatory species have strong legal protection under the EU Habitats & Birds Directives, including the two cormorant species. At present, it is unclear to what extent predation by different species is having an impact upon the eel stock. ***It would be sensible to seek to quantify the levels of natural mortality created through predation upon eels, both in the sea and in fresh water.***

#### 5. Additional Threats to Eels

A number of threats have been implicated in causing the decline in European eel recruitment and stocks. The Sustainable Eel Group has pointed out that a healthy freshwater habitat is an obvious pre-requisite to achieving a healthy eel stock. The destruction of wetlands, damming of rivers, and deterioration of water quality are all potential contributors to the decline in the recruitment of glass eels, as well as in the numbers of silver eels entering the sea. Without major improvements to all these factors wild eel populations may never experience the recruitment levels observed in the sixties and seventies of the previous century. Within rivers, changing hydrology, increased pollution levels, diseases and parasites may affect body condition and survival. Only 54% of the European surface waters reached 'good ecological status' in 2015. This is far below the objective of the Water Framework Directive to achieve a good ecological status in *all* surface waters.

<sup>2</sup> DASSH - MEDIN data archive centre for marine species and habitats data at <http://www.dassh.ac.uk/>



The parasitic nematode, *Anguillicoloides crassus* lives in the swim bladders of eels and appears to spread easily among eel populations after introduction to a body of water. It is considered to be one of the threats to the sustainability of populations of European eel.

The impact of these freshwater threats individually or synergistically, are likely to be regionally specific. One of the most widely practised measures for promoting the recovery of eels is restocking with juveniles. ***Greater attention needs to be paid in Eel Management Plans to improving the quality and accessibility of freshwater habitats and protecting eels from environmental deterioration, and to developing, improving and supporting suitable restocking programs. ICES should be requested to come up with estimates of optimum glass eel recruitment levels in rivers like the Severn in the UK and the Ardour and Loire in France. This is urgently needed in order to resolve the current debate about the net benefits of taking glass eels from these areas of abundance and transferring them to other areas of much lower recruitment.***

Within coastal waters, there may also be problems with water pollution, and eels may also be affected by coastal and offshore industrial developments. In addition, in the sea climate change and changes in oceanic currents may be affecting the ability of silver eels to migrate to their spawning grounds in the Western Atlantic. Water currents and the climate regime may also play an important role in the survival and transport of the leptocephalus larvae and affect the recruitment of glass eels to coastal, brackish and freshwater habitats. However, there are few management measures specific to eels that can alleviate these marine environmental problems. ***Implementation and enforcement of EU climate, chemicals, and water pollution policies may contribute to the recovery of the European eel in the longer term.***

## Other Important Considerations

Conditions for eels are different within different countries, and the NSAC supports the devolvement of eel management to the different Member States, through the provision of Eel Management Plans, in order to ensure that appropriate national measures are introduced. The formation of national groups, bringing together scientists, industry and conservation interests, will be necessary to fully address the problems faced by eels and to ensure the restoration of healthy aquatic ecosystems. In some countries, such groups have already been formed to bring together the relevant stakeholders and assist the implementation of national eel protection plans and introduce appropriate protective measures. In some other countries, very little has been done to involve stakeholders and to develop effective national action plans.

There is a need to evaluate protective measures internationally, and to exchange information between Member States, so that national action plans can be strengthened and made more effective. There is a particular need to evaluate the protective actions and assessments taken by each country and to ensure that all sources of eel mortality are being considered. Currently the absence of reliable feedback on how protection is working in different countries is making it difficult to evaluate and adjust protective measures.

ICES has highlighted the need to consider mortality from all sources. However, the ICES advice, and the request from the Commission, only relates to what can be done for the European eel stock in marine waters. It is important to consider the management of eel





mortality from all sources. Eel Management Plans are the responsibility of the Member States and each Member State must ensure the measure will contribute to the recovery of the eel stock. However, it seems that some of the plans are inadequate and others are not fully enforced. The ICES advice inevitably ends up, year after year, recommending a reduction in all sources of mortality to as close to zero as possible. As part of a holistic approach to the recovery of European eel it will also be important for there to be advice on ongoing management actions under the Eel Management Plans. In the absence of adequate international cooperation, and feedback on progress with the national plans, the common goals are not being met. ***The problem of insufficient attention being paid to Eel Management Plans and the lack of enforcement of such plans by some Member States must be addressed by the Commission.***

### **Fisheries management measures in marine waters**

A minority position has been taken by a number of NSAC fishing industry members<sup>3</sup> who do not agree with this entire section. They are opposed to any additional management measures in marine waters.

In its letter to NSAC, the Commission requests advice on fisheries management measures in marine waters, providing a number of examples. We consider these options below, as well as some connected measures. At this point, however, it is not possible for the NSAC to conclude which of these measures, if any, would be most effective in contributing to the recovery of the eel, which is subject to a number of other pressures. For such conclusions to be considered, it will be necessary to have clear information regarding the nature of the vessels and gears that fish for eel in marine waters, as well as the proportion of bycatch and target catches. According to information recently compiled by ICES, such information is limited<sup>4</sup>. This information will, in turn, be necessary for identifying fleet segments upon which such measures would be likely to have socio-economic impacts, for quantifying these impacts and for developing relevant mitigation measures. As such, the Commission should prioritise the compilation of this information to inform its decision-making.

### **TACs**

The introduction of a zero TAC for European eel would prevent targeted fishing for the species. However, it is likely that European eel would become a choke species under the Landing Obligation, particularly where it was caught unintentionally as bycatch (unless an exemption was justified). A better understanding of the reductions in mortality that could be expected and

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<sup>3</sup> The following fishing industry organisations do not agree with this final section of the advice; NFFO; CNPMM; UAFP; Deutscher Fischerei Verband; Sveriges Fiskares Riksförbund; Rederscentrale; Danish Fishermens' PO (2 seats); Stichting van de Nederlandse Visserij (2 seats).

<sup>4</sup> Moreover, ICES responded to one reviewer's comment on the WKMAREEL report asking for further details on the main marine fisheries reporting eel bycatch and the quantities of bycatch, that the WK did not have access to the relevant data to answer these questions (pp27 and 31)



the impacts to various fleets is needed before the use of a zero or low TAC could be considered.<sup>5</sup>

### **Bycatch quota**

Where a species is subject to a bycatch quota, data collection requirements would apply and could continue to inform management of the stock/species. If this approach is to be used, the bycatch quota must be based on scientific data regarding unavoidable bycatch levels to avoid exceeding the levels and potentially increasing catches of eel.

### **High Survivability**

Certain gears in certain areas could be granted an exemption from the Landing Obligation on the basis of high survivability. Currently, information on survivability of European eel is limited, and survival rates are likely to differ significantly between different fishing methods. More studies would therefore need to be undertaken for relevant gears and areas, and if the evidence from these studies demonstrates high survival, the resulting exemption could alleviate potential choke situations. However, the possibility of such an exemption should not prevent the fisheries from continuing to work on selectivity and avoidance measures.

### **Prohibition of fishing**

One of the examples given by the Commission of a fisheries management measure was the prohibition of fishing. This may relate to one or both of the following options:

#### **1. Prohibition of targeted fishing**

The proportion of eel catches caught in targeted fisheries, as opposed to being caught as bycatch, will determine the effectiveness of this approach for the recovery of the stock. Data on landings and discards of European eel reported by Member States indicate that the overall level of discards is very low compared to the overall landings<sup>6</sup>, which may suggest that the quantities of eel taken as unwanted bycatch are relatively low. However, as highlighted above, a more in-depth analysis quantifying these proportions for all fisheries involved is needed to draw more reliable conclusions.

#### **2. Prohibited species list**

Prohibition of fishing may also refer to entry onto the prohibited species list. Listing as a prohibited species has the potential to decrease fishing mortality to very low levels. The prohibited species list means that it is prohibited to fish for, retain on board, tranship or land the species. However, if the species is accidentally caught, it must be promptly released unharmed. There would need to be clearer data on post-release survivability in such situations

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<sup>5</sup> French fishers' representatives (the CPNEM) point out that the introduction of a low TAC would involve quota management by each Member State for each life history stage (glass, yellow and silver eels). Currently, few eel fisheries are managed by quota.

<sup>6</sup> Joint Research Centre database on data reported in response to the Commission's data call on Fisheries Dependent Information (<https://stecf.jrc.ec.europa.eu/dd/effort/graphs-annex>), data on landings and discards reported by Member States retrieved on 27 July 2017.



to ascertain the level to which this management option would contribute to the recovery of the eel.

### **Data collection**

One of the key problems in relation to the management of eels in marine waters is a lack of data upon the state of the stock and the overall effects of marine fisheries. There is a need for more data on the vessels and gears that catch European eels, the quantities of both targeted catches and bycatches, and the levels of mortality resulting from marine fisheries in relation to those levels caused by other factors affecting the lives of eels.

