

# Is the European eel nearly extinct?



Februari 2026

To: Euskadiko Angulero Elkartea,

You asked me to comment on recent media messages, in which it is claimed that the European eel is nearly extinct. I have checked the media, and indeed I find messages that the stock is in absolute danger of extinction – or even already extinct – but equally well, I find messages of remarkably quick recovery following the EU protection plans. I will sketch the issue and summarise what has been published about this in the scientific literature – as far as I am aware of it.

The eel has been slip-sliding away for a century or more, and from 1980 until 2011 the number of glass eels rapidly went down. Is there a realistic risk of extinction? Evidently, if nothing had been done, and the downward trends not halted, then a real risk of extinction would arise one day. But fortunately, the EU adopted a protection plan in 2007 – the Eel Regulation, backed-up by the CITES-listing – and protective measures have been initiated since, all across Europe. I must hasten to add here that the Eel Regulation has severe implementation problems (implementation has come about halfway, but is not progressing any further, anymore. Halted at a sub-effective level) - so there is no serious dispute that the eel rapidly needs further protection, but views differ on the way how to achieve that.

So how realistic is extinction right now? The mysteriousness of the eel has often been described. Many aspects of the eel's biology, including its reproduction in the far away Sargasso Sea, are still largely unknown. Not knowing these critical processes, how could anybody assess the extinction risk with any reasonable certainty?

To my knowledge, nobody – absolutely nobody – has ever assessed the extinction risk for the European eel in any serious way. There is one recent article, in which a potential mechanism is suggested, that could eventually lead to extinction. That mechanism occurs, when prices start to rise once the species gets less abundant, and consequently, the total profit increases the rarer the species becomes. With rising profit, the expenditures to hunt for the species can increase, while the species itself moves towards extinction. Though the authors of that article show that glass eel prices went up (in their study area in Spain), their data also show that the rise in price did not compensate for the decline in abundance completely, and the overall profit still went down. With less profit available, fishing effort has actually diminished – the claimed extinction vortex evidently did not occur. The rising prices only incompletely compensated for the declining abundance. Their own results (profits) indicate that the claimed extinction vortex was not there. Hence, “extinction” remains a castle in the sky for the eel.

However, there is another study, that might well have given rise to the confusion: the recent assessments of the eel's status by IUCN. The International Union for the Conservation of



Nature IUCN applies a rigorous framework of fixed criteria to all plants and animals alike, aiming to assess the risk of extinction for all those biotas. Based on these assessments, IUCN compiles a red-list of threatened species. Though the IUCN criteria do not address the peculiarities of any individual species, and certainly not those of the eel, the application of a standardised framework is definitely a major asset, which prevents a lot of trivial discussions (as we are having today). For the eel, IUCN ([2018](#)) concluded on a status as 'Critically Endangered' (CR). This CR-status is explained as 'Facing an extremely high risk of extinction in the wild'; that is the last status before becoming 'Extinct in the wild'.

Let's have a closer look at the IUCN criteria, that were tested on the eel. The CR-status has five main criteria (each subdivided in many sub-classes, which I will not discuss – see the original assessment):

- A. A reduction in abundance (indices) of 80-90% over a period of three generations. For the European eel, the glass eel has shown a downward trend of some 90-99% over such a period, while the landings went down by 90% - thus criterion A is absolutely positively fulfilled.
- B. A remaining distribution area of 100 km<sup>2</sup> or less. The European eel is distributed from the North Cape to the Nile Delta, and in all waters in-between – the total water surface area is estimated at some 1 million km<sup>2</sup>, rather far above the limit.
- C. A remaining population number of 250 mature individuals or less, and still going down. For the eel, we only roughly know that number, but if anything, it will be closer to 10 million than to 250. So, criterion C does not apply.
- D. As the previous, with a number of 50 or less (the condition "going down" is dropped, the limit is lower). As before, this criterion does not apply.
- E. A full assessment of the extinction risk, showing a risk of 50% or more. As said, nobody has ever attempted such a full assessment for the eel. So: criterion E does not apply.

Summarising: criterion A (prolonged decline) applies, the other criteria (on low abundance) do not.

For the CR-status, five criteria exist: four criteria (B-E) refer to the size of the population or the extent of its distribution area, and one criterion (A) refers to the rate of decline of those other abundance indices. Four criteria for the absolute abundance, one for a relative rate of decline. *Four criteria telling me that I am bankrupt, one criterion telling I am over-spending.* As relevant as both types of criteria can be, I consider that these have incorrectly been merged under one label: a worrying rate of decline is fundamentally different from a worrying state of near-extinction. *An over-spending millionaire has a much better chance to survive than a bankrupt pauper.*

For a prolonged decline (criterion A), there is time to identify the root causes of the downward trend and establish a recovery programme addressing those. For a near-extinction, emergency measures must be taken immediately, wherever possible, even when facing a risk that not all root causes are addressed. For the eel, we know the root causes pretty well (fishing, habitat loss, migration barriers, pollution), and in 2007, the EU adopted the Eel Regulation – all Member States agreed to develop a comprehensive recovery plan, achieving the required minimal protection (from the assembly of all root causes together). That Regulation was



adopted now nineteen years ago. With that coherent plan in place for such a long time, there is absolutely no reason to revert to blind emergency measures focused on a single root cause only (fishing), but there is all reason to ensure the comprehensive Eel Regulation is better implemented.

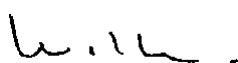
By merging all their diverging criteria into a single category, IUCN creates a misconception that the eel is nearly extinct, which the eel is not. The stock has been in a worrying multi-decadal decline, but it is still far away from extinction. It is still the most wide-spread fish in Europe, and it is still one of the more abundant species in continental waters, with numbers recruiting over the thousand million individuals each year. The state of the eel stock is worrying, since it is no longer so extremely abundant as it has been before, and until recently, abundance was consistently going down. The suggestion of a realistic extinction-risk, however, is currently misleading and distracts attention from the much-needed protection.

While their assessments are designed to inform policies, IUCN prevents the misuse in decision-making processes: an IUCN status should not be used as argument in political discussions (but refer to the worrying status of the stock itself). That restriction is explicitly mentioned in their guidelines – but the reality is different: the CR-status is widely used as argument, and what is worse: the categorisation as CR on the basis of a prolonged decline (criterion A) is misquoted as a status near extinction (criteria B-E). Though IUCN intended to avoid confusion and misunderstanding, that is what emerges: the “near extinction” of the eel is widely quoted in popular articles and even in some scientific articles, as an urgent argument for blind emergency measures.

“The eel is rapidly nearing extinction, and therefore all fishing must be unconditionally stopped, immediately” – the argument is false, the deduction unjustified and ineffective, and above all: anyone saying so distracts attention from the much more relevant discussion on improving the implementation of the adopted protection policies, and achieving the targets of the Eel Regulation (survival allowing recovery: 40%). Any new broom will inevitably come across implementation problems, the new brooms just considerable later than the Eel Regulation (i.e. now).

The gradually deteriorating status of the eel stock has been known throughout the twentieth century without effectively being addressed; since [1999](#), a comprehensive and coherent discussion has been held in Europe, leading to the 2007 protection policies ([Eel Regulation](#) and [CITES](#)), but their implementation faces serious problems. Simplifying the discussion to an exaggerated “extinction”, and narrowing it to an ineffective “close fishing” turns a blind eye on reality: the eel needs Europe-wide protection, comprehensively addressing all major human impacts (fishing, habitat loss, water management, pollution, more).

Uitgeest, 2026-02-02, Willem Dekker



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