



*European Parliament Forum on Recreational Fisheries and Aquatic Environment*

## REPORT

# More big fish in the sea! Questioning the MSY paradigm for a sustainable long-term marine fisheries management

Co-chaired by MEP Caroline Roose and MEP Isabel Carvalhais

25 April 2023

12:30 – 13:30

Room ASP 5E&, European Parliament, Brussels

### *Introduction*

**MEP Niclas Herbst (Germany, EPP), Chair of the Forum on Recreational Fisheries and Aquatic Environment**, opened the meeting by thanking all the panellists and guests attending the conference. He warmly thanked MEP Caroline Roose and MEP Isabel Carvalhais as well as Christopher Griffiths and all the stakeholders gathered for the occasion. He then passed the floor to MEP Caroline Roose to introduce the conference.

**MEP Caroline Roose (France, Greens/EFA)** reminded that in 2020 she was rapporteur on the **“MSY: More Big Fish in the Sea” Initiative Report**, for which she dived into the concept of Maximum Sustainable Yield for the first time. Since its reform in 2013, the MSY concept is at the heart of the Common Fisheries Policy (CFP), establishing that fish stocks must be exploited at or below the level allowing the reproduction of fish species. However, **other factors need to be considered** to ensure the actual sustainability of fisheries.

She expressed her delight of chairing this event which will hopefully help understanding better the MSY, its limits, and how other criteria such as fish age should be considered in the management of commercial fisheries.

### *Presentations*

#### **Limits of the Maximum Sustainable Yield and importance of improvements for a long-term sustainability of fish stocks**

Presentation by **Markus Lundgren**, Biologist, Regional Manager - Sportfiskarna (EAA Sweden).

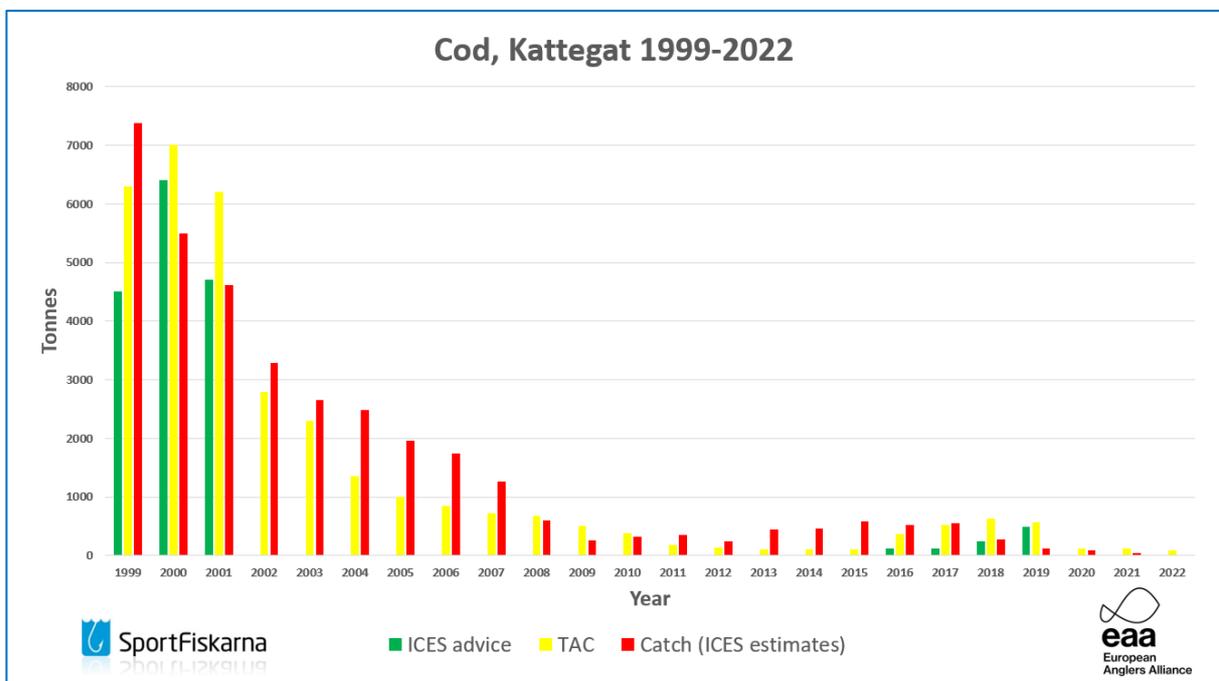
**Markus Lundgren** reminded that anglers are not only fishers but also people caring about biodiversity and its protection. Nature conservation is at the core of angling associations’ activities. They contribute



“The current situation is one of officially sanctioned overfishing. As it is now, I am not sure about what the ‘S’ means in ‘MSY’ but I doubt that it can mean ‘sustainable’” – **Markus Lundgren**

to protecting species, restoring waters and monitoring nature.... **This is how anglers have been first-hand witnesses of the fish stocks structures’ deterioration.** Not only fish sizes factually diminished but fish are ever younger, which lowers their possibilities to reproduce several times before being caught. This situation jeopardises the survival of entire species. Other concerns causing fish to disappear, such as the acidification of waters, have also been witnessed by anglers.

**Lundgren** expressed his concern about many fish stock fishing levels, with the example of the Kattegat area (between Sweden and Denmark) in which the cod quotas has been systematically set over the levels advised by the International Council for the Exploration of the Sea (ICES) every year for the last 20 years, with total catches going even beyond that.



**His presentation clearly shed light on the degradation of the fish stocks structure:**

- For cod, Swedish trawl surveys from 1923 to 1956 showed a wide diversity of size and age among fish. The average size of fish was between **40 cm and 50 cm**. In 2000, the same surveys showed that the average size decreased to **25cm** with almost **no fish bigger than 40cm**. The only way, today, to catch bigger cod is to reach a **trawl-free** area.





- A similar observation has been made for herring in the Baltic and the Bothnian sea, with a reduction of 4 cm in the average size between 2005 and 2021, which is enormous for such a small fish.

One key factor that has been put in evidence is the systematic misreporting of herring and sprat catches by industrial pelagic large-scale fishing. This fishing means huge coastal catches that is not impacted in terms of sales price when the fish are smaller, since the catch mostly is used for fish meal production. One of these giant boats can land more herring in one day than the whole Swedish small-scale fishing fleet do in one year. These coastal catches from large boats not only threatens the existence of local fish stocks but is also an issue for small scalers: the lack of big fish to catch is, jeopardize their activity and profit because they get only sell at higher prices for bigger fish and can't use the smaller fish for human consumption.



The situation is so alarming **that scientists announced a disclaimer in the area**, which does not often happen. The disclaimer highlighted the fact that MSY management does not consider the age and size distribution of the exploited stock, amongst other preservation parameters.

**Lundgren** reminded that the MSY is a production target which is conflicting with other EU legislations (e.g., the Marine Strategy Framework Directive; MSFD) within which size and age is given equal importance. **The sustainability of decisions taken on the sole basis of MSY is jeopardizing**, given the lack of consideration for size distribution and the focus on single species management.

**Lundgren** ended his presentation by underlining the importance and the value of big fish.



- Big fish present a greater resilience to climate change and eutrophication. They are key to ecosystems sustainability. Bigger fish are more likely to become “mega-spawners” ensuring the survival of species.
- Big fish mean better pay for small scalers.
- Big fish make happy anglers – by far, the lowest-impact activity generating the most economic turnout.

According to him, even though a change of mindset is absolutely needed, **there is no need to introduce new legislation but to implement the Marine Strategy Framework Directive legislation that is already in place for the assessment of Good Environment Status.**

## **Including older fish in fisheries management – a new age-based indicator (ABI<sub>MSY</sub>) for exploited stocks**

Presentation by **Dr. Christopher Griffiths**, Swedish University of Agricultural Sciences.

**Christopher Griffiths** presented a new age-based indicator (ABI<sub>MSY</sub>) developed by him and his team at SLU AQUA. The ABI<sub>MSY</sub> broadly translates to the proportion of older fish in the population as a relative metric to the proportion of older fish expected under long-term fishing at MSY (fishing mortality set at species-specific  $F_{MSY}$ ). According to him, the past and current fishing has led to a **deterioration in the age-structure of commercial stocks**, and management targets have often been **incompatible with sustainability**, as low proportions of older fish are not taken into account.

To evaluate management, scientists often use Management Strategy Evaluations (MSE). During MSEs, they take the current level of a stock, including the a stock’s size and information on the biology and the exploitation pattern of a stock, and simulate forward to equilibrium, assuming fishing mortality and the biological aspects are fixed. Those simulations allow scientists to build graphs which enable the comparison between different types of management.

“We could potentially catch the same number of fish and bigger fish in the long run, by integrating an age-based indicator to the MSY and ensuing stocks have the age structure they need to sustain an advised level of catch”  
- **Christopher Griffiths**

ABI<sub>MSY</sub> is based on MSE and allows the current age structure of a stock to be directly compared to sustainable long-term management targets; an approach that is identical to how we currently assess stock size and fishing mortality and provide fisheries advice within ICES. Within his presentation, Dr. Griffiths showed that 62% of stocks in the Northeast Atlantic currently lack the number of older fish that might be expected under MSY. He also showed that 31% of stocks had severely low numbers of older fish.

**This lack of old (and big) fishes makes current management unsustainable in the long run and is likely to negatively impact replenishment rates, recovery, and resilience to both fishing and climate change.**

To conclude the first part of his presentation, the ABI<sub>MSY</sub> indicator can:



- Provide information on the age structure of exploited stocks that aligns well with current ICES stocks assessments.
- Meet the European Commission's recommendations and those described by the scientific literature for the Marine Strategy Framework Directive's criterion D3C3 of Good Environmental Status, which refer to the age and size distribution of exploited stocks.
- Establish reference points (age structure at  $F_{MSY}$ ) that **match policy objectives**.
- Address two general needs in fisheries management:
  - The definition of an age structure capable of sustaining an advised level of catch.
  - The existence of enough older fish in the stock for it to recover as expected from fishing.

In the second part of his presentation, Dr. Griffiths shifted focus to the setting of long-term management targets. In his view, current choices on **Harvest Control Rules (HRC) are not helping fish stocks and are often only beneficial in the short-term**. His solution would be in favour of a more precautionary approach, whereby management targets are set based on biomass, and not  $F_{MSY}$ . Such an approach is already used in New Zealand and Canada and will help ensure that fish stocks are sustainable and more capable of maintaining ecosystem function, structure, and service. Moreover, he commented that **ideas of reducing F to gain better levels of biomass, catch and sustainability in the long term** are not new and have been around for much for the last 20-30 years.

Currently, the Harvest Control Rules used to manage fish stocks are based on two performance criteria:

- The probability of that biomass falls below the ICES biomass limit called "Blim" cannot exceed 5% in any given year;
- The catch levels stick as close as possible to MSY.

"The key question here remains: what would happen if we fished differently? If instead of aiming for MSY, what if we were ready to accept a small reduction – in fishing mortality, in order to boost biomass, catches and resilience of the stocks in the long term?" - **Christopher Griffiths**

**Griffiths** shed light on two case studies showing that current **Harvest Control Rules do not necessarily contribute to more sustainable fish stocks**. In fact, considering the Northern shrimp case, we understand from his figures that a same level of catch could be achieved under a more precautionary HCR, boosting biomass by 20%, despite a reduction in fishing pressure. In the case of herring in the central Baltic Sea, the benefits in terms of **biomass could reach up to a 50% increase**. This increase in biomass would also result in a 10% increase in the proportion in older

and bigger fish, with only a 5% reduction in long-term catch.

To sum up, fishing differently and having a more precautionary approach can result in:

- Increased biomass;
- Increased abundance of older and larger fish;
- Very limited loss in long term levels of catches.



## Discussion

### Discussion on the possibilities to consider the fish stocks' age and size in the future fish stocks management decisions

Moderated by MEP Caroline Roose (France, Greens/EFA).

MEP Caroline Roose (France, Greens/EFA) gave the floor to Ms. Raluca Ivanescu Deputy Head of Unit "Fisheries Management Atlantic, North Sea and Baltic Sea" at the European Commission's Directorate General for Marine Affairs and Fisheries (DG MARE).

Raluca Ivanescu (DG MARE) reminded that the European Commission acts in favour of one shared goal: making fisheries more sustainable. However, the points of view and the tools to get to that point might differ.

Over the past ten years, **the MSY tool has proven successful in improving European fisheries**. Still, we must learn from past experiences with using MSY, but also from using Harvest Control Rules (HCR) and management strategy evaluations, to adapt where and if possible, our policies. For the time being, the EU has a legal framework in place within which the EU has to work, and the requested scientific advice follows this legal framework. The ICES has been slowly but surely moving away from an MSY-only approach **to include more mixed fisheries and ecosystems considerations** in its advices. These considerations are very much taken into account by the Commission to set TACs and quotas.

The overall context needs to be kept in mind when looking at specific stocks. While some of the examples in the presentations looked at the Baltic Sea stocks, it is clear that many other factors must be considered to comprehend the situation that go beyond the mere fishing pressure on fish stocks, such as pollution. We also cannot ignore the mixed fisheries context for cod in the North Sea and the Baltic Sea when addressing quotas issues. However, presentations such as this one could be very well taken into account when looking at adjusting the current policies.

Silvia Bartolini from the Directorate General for Environment (DG ENV), Head of Unit C.2, Marine Environment & Clean Water services then took the floor to add that DG ENV is currently evaluating the Marine Strategy Framework Directive (MSFD) in view of revising it. She welcomed the very interesting angle of this event to contribute to the Commission's reflections. The MSFD objective is clear: achieving good environmental status of EU seas according to 11 descriptors. One of these descriptors is related to commercial fish and shellfish with three criteria used to assess the state of these species – mortality (F<sub>msy</sub>) and biomass (SSB) which are the most used, and age and size distribution of individuals as the third criterion. The third criterion (D3C3) is the one where the least progress has been made. She argued that science needs to improve and because the whole D3C3 concept was new at the time of the adoption of the MSFD, policy changes could not be implemented immediately. Member

"Member States have focused on mortality and biomass because the science was lagging behind to include size and age criteria" – Silvia Bartolini (DG ENV)



States chose to develop policies on other criteria, scientifically supported. However, 15 years after the adoption of the Directive, more efforts are needed in order to put this criterion in practice.

ICES clearly stated in 2022 that at the time, current indicators based on age or were not yet operational, which means that more work is needed to further develop this aspect. **Scientific contributions such as Dr Griffiths' are more than welcome to support this process.**

The floor was then opened to other participants to contribute to the discussion.



**Jan Kappel (European Anglers Alliance)** raised a question in relation to the lack of selectivity of the European fisheries, dominated by trawling. How would you provide bigger fish when everything over a certain size is caught by trawlers?

**Bjorn Stockenhauser (Greens/EFA group PECH Committee advisor)** noted that this presentation reminded him that in 2015, DG MARE asked ICES to provide a MSY range for the North Sea and the Baltic's stocks.

He also noted that the main point remains that catches reductions would be needed for some years. Benefits will come afterwards but there is resistance to that. He asked Christopher Griffiths about the possible solutions to overcome this transition period of catches reductions and to increase acceptance.

**Christopher Griffiths:** agreed with Stockenhauser's words. He specified that even though shifting paradigm will have a cost in the short run – namely, the reduction of commercial fisheries' opportunities - the consequences in the long run are far more important, **particularly on the biomass and the fish age and size structures.** He agreed that change will be difficult from a practical point of view, but it's essential to ensure sustainability.



**Raluca Ivanescu (DG MARE)** reminded that **the Commission is very supportive of improving selectivity**, including through financial instruments. There has been a lot of progress in the recent years.

The Commission hopes to count on all stakeholders to work in favour of healthy stocks through mastered fishing selectivity, but change will take time. MSY proved to be a successful tool to get European fisheries to a better state. She quoted the example of stocks in the Bay of Biscay, where the latest STECF assessment indicates that stocks are in good shape. However, a lot of work is yet to be achieved in areas where there are other factors at stake. For instance, in the Baltic Sea **a further look to deeper ecosystems considerations is clearly needed**.

**MEP Pierre Karleskind (France, Renew Europe)** asked whether there are examples in Europe of stocks fished below FMSY and if so, whether there is have information about **the impacts on stocks structures**. Do we have examples and scientific analysis of these?

**Christopher Griffiths** replied that there are indeed very good examples of stocks for which **ICES does not only use MSY anymore** but also a percentage of B0 (virgin biomass) as its reference point, as it is the case in Canada, the US or New Zealand. He agreed that such examples must be highlighted so that conclusions can be drawn.

**Raluca Ivanescu (DG MARE)** complemented saying that there are situations in which the lower FMSY range is applied but it is usually in **highly challenging situations**, where the main stock is in a bad state or in the case of mixed-fisheries with either the target or the bycatch stocks being in opposite conservation situations. The Commission could look case by case to draw conclusions on age and size distribution but she feared that general conclusions cannot be made because **commercial fishery data may not provide accurate age and size distribution information**.

**Brian O’Riordan from Low impact fishers of Europe** reminded the social and economic implications of fish stocks age and size structures. **Bigger fish and more diverse species are essential to small scale fishers** unlike large scale fishers who can rely on trawling techniques to catch big amounts of fish. Currently, the Baltic Sea is not profitable anymore for small scale fishers, even if they could access the cod stock which they cannot at the time. Different approaches are required to address small- and large-scale fishers. **They both answer to completely different logics**. Depressing effect on prices are a reality because large-scale fishers are price takers delivering huge amounts of small fish on the market. There are both biological and economic reasons to address the fish stocks structure.

**Max Wahlund, advisor for the Swedish Green MEPs** asked Markus Lundgren how the objective of having bigger fish could concretely be achieved with the **current legislative framework**.

**Markus Lundgren** answered that there is a contradiction between the MSY-based management, the MSFD and the ecosystem-based approach. What the anglers would like is that the **Commission asks ICES to include all the MSFD criteria and ecosystem considerations too in its advice to efficiently move forward on this issue**.

“What the anglers would like is that the Commission asks ICES to include these considerations on the stocks structure in its advice to efficiently move forward on this issue.” – **Markus Lundgren**



**Olivier Portrat from the European Fishing Tackle Trade Association (EFTTA) stated that anglers are usually under-estimated.** Yet, their activities generate 25 billion EUR across Europe every year and they represent more than 3% of the European population. Recfishing is an experience with nature, not only focused on killing fish – and in the case of catch & release not even killing it. **Recreational fisheries are the most adding-value sector for European water resources, far more than commercial fishing activities.** Anglers are also promoting better fishing techniques as regard to the environment and fish welfare. **We are asking for consideration.**

**Fred Bloot (EAA)** underlined that a **better fish stocks structure would benefit to everyone**, including commercial fishermen, in social and economic aspects. He hopes to notice paradigmatic political changes to save those fish stocks.

### *Conclusion*

**MEP Isabel Carvalhais (Spain, S&D), co-chairing the event,** thanked everyone for taking part in this discussion.

**She acknowledged the need to consider age and size but also ecosystems, social and economic aspects into the fisheries management.** The MSY as a management tool is not questioned, it remains an important tool. However, the issue comes from its application. It cannot solely rely on tonnage targets. **A more holistic approach is required** including the consideration of fish stocks structures, as well as taking as the ability of species to survive and adapt climate change and avoiding discards.

She understood the importance of considering the recreational fishing voice when deciding on this matter. Small scale fishers too, as they represent 17% of the fishing industry. **That is why more coordination and dialogue must be conducted to better manage our resources.** She welcomed the will of DG MARE and DG ENVI to work together towards more sustainable strategies.

“Recreational fisheries is an important sector that must be considered when managing fish stocks” – **MEP Isabel Carvalhais**

**To conclude, MEP Caroline Roose (France, Greens/EFA)** thanked the panellists and all the participants for contributing to this discussion and expressed her hope that anglers will be considered in future discussions on fisheries management.

