

Mackerel

There is presently an ongoing dispute regarding the fishing of mackerel in the North East Atlantic (NEA) amongst the Coastal States. The current crisis erupted in 2009 after the Faeroe Islands withdrew from the mackerel management agreement in response to Iceland's increasing mackerel catch. The level of autonomous quotas set by both Iceland and the Faeroe Islands since have been strongly challenged by both the EU and Norway.

Currently every effort is being made to resolve this issue through formal negotiation at international level, so that mackerel management can be re-established and the stock sustainably fished at levels which will not compromise long-term resource productivity.

Mackerel is the most valuable stock to the Scottish fishing industry, representing about one third of the value of total landings by the Scottish fleet. There have been strong protests by Scottish fishermen at the continuing situation – including blockades at Scottish ports to prevent Faeroese vessels from landing mackerel.

The mackerel fishery in the NEA

The North East Atlantic (NEA) mackerel stock is comprised of three spawning components; the western, southern and North Sea, but is assessed by International Council for the Exploration of the Seas (ICES) as one stock^{1,2}. The stock has an extensive migration pattern with widely spread spawning areas.

Catch and survey data from recent years indicate that the stock has expanded north and west during spawning and summer feeding migration. ICES¹ states that the expansion seems to be less related to changes in environment conditions, than to the increase in the stock size.

Traditionally, the fishing areas with higher catches of mackerel have been in the northern North Sea (along the border of Divisions IVa and IIa), around the Shetland Isles, and off the west coast of Scotland and Ireland. The southern fishery off Spain's northern coast has also accounted for significant catches. In recent years significant catches have also been taken in Icelandic and Faeroese waters, areas where almost no catches were reported prior to 2008¹. A new research project by the Icelandic Marine Research Institute will run until 2014 to look at the stock structure and to give information on changes in the migration pattern³.

The issue is that there have been changes to the distribution and timing of migrations and spawning outside the traditional patterns in recent years, and the mackerel stock has increased in size. This has changed the perception of mackerel distribution and has resulted in the development of new fisheries. This is reflected in the fact Iceland was awarded Coastal State status in 2009.

This briefing note gives the background and explains the current position.

Management of the NEA mackerel fishery

According to the 1995 United Nations Fish Stocks Agreement (UNFSA)⁴ straddling fish stocks, and highly migratory fish stocks (such as mackerel) have to be managed by a Regional Fisheries Management Organisation (RFMO), which consists of Coastal States and relevant Distant Water Fishing Nations (other nations with a real interest in the fishery)⁵.

North East Atlantic Fisheries Commission

In the North East Atlantic there are several straddling stocks, including mackerel, and the relevant RFMO is the North East Atlantic Fisheries Commission (NEAFC)⁶. NEAFC comprises contracting parties which have all signed up to the Convention on Multilateral Cooperation in North East Atlantic Fisheries, which entered into force in November 1982. There are currently five contracting parties: the European Union (EU), Denmark (on behalf of the Faeroe Islands and Greenland), Iceland, Norway, and the Russian Federation.

Coastal States (CS)

According to the United Nations Convention on the Law of the Sea (UNCLOS)⁷, a Coastal State is a state where a migrating fish stock enters and is found in its waters (defined as a 200 mile Exclusive Economic Zone). Coastal States have both the right to harvest (utilize) the fish stock and the responsibility to cooperate with other Coastal States on the sustainable management of the stock. They have the responsibility to come to an agreement with each other on total allowable

catches from the stock to ensure sustainability and avoid overfishing.

Coastal States agreement up to 2008/9

Historically mackerel has been fished by several EU Member States, by Norway and the Faeroe Islands, and to a lesser extent Russia. This means that the three relevant Coastal States for mackerel have been the EU, Norway and the Faeroe Islands and they have been the signatories to the mackerel Coastal States agreement (in place for over 20 years), all under the NEAFC framework. The agreement includes allocating shares of quota based on a historical track record and in accordance with the latest scientific advice for the stock. The most recent management plan was put in place in 2008 whereby the parties agreed a total allowable catch and its appropriate division. A quota was set for 2009⁶.

Changes to the Coastal States Agreement

There were almost no reported catches from Icelandic waters prior to 2008. Iceland was noted to be conducting a very small mackerel fishery in its own waters in 2005, catches of which totalled 363 tonnes. Since then Iceland has greatly increased its mackerel catches, it is currently an EU candidate state and became a Coastal State for mackerel in 2009. At this point it became the joint responsibility of the four Coastal States to reach an agreement on the comprehensive management of the mackerel fisheries in order to ensure their sustainable exploitation.

Breakdown of Coastal States agreement

The reality is that the Coastal States have failed to reach agreement on quotas shares. Both Iceland and the Faeroes have set their own autonomous quotas. In the absence of a Coastal States agreement, the EU and Norway agreed on a 10 year mackerel management arrangement in 2010. They have continued to set a joint TAC based on the previously agreed sharing arrangements from the Coastal States agreement, and ICES continues to advise a scientifically calculated catch. But there has been no international agreement on mackerel since the TAC and quota were set in 2008 for 2009, and currently total catches are greatly exceeding ICES advice.

It is worth noting that disagreement on the management of straddling and highly migratory stocks is not new and has occurred before with both blue whiting and spring-spawning herring. The protracted disagreement on blue whiting (six years) led to a very grave depletion of this stock⁵. Agreeing and maintaining international fishing agreements is paramount but this requires the willingness of all parties concerned to cooperate. It is not uncommon that one or more of the third parties lack such a goodwill and chose to fish at a unilaterally established high intensity for a number of years before consultations are concluded successfully. Such behaviour may lead to considerable depletion of the fish stock in question, even if other parties engage in moderating their fishing rates.

TAC negotiations on NEA mackerel

Since the beginning of this dispute, many rounds of international negotiations have

taken place to try to resolve this issue. Most recently NEAFC met in December 2012 but could not agree international waters fisheries management arrangements for mackerel due to the Coastal States negotiation failure. Some progress has been made, but a final agreement has yet to be concluded.

For 2010

The advice from ICES⁸ was to allocate a total TAC of 527,000 to 572,000 tonnes (fishing mortality range agreed by management plan).

- Both Iceland and the Faeroese set their own autonomous quotas for the fishing year⁹. Iceland allocated a TAC of 130,000 tonnes and the Faeroese 85,000 tonnes. This was estimated to be 21% of the total reported landings
- Based on the historical sharing arrangements used in Coastal States agreements, the EU and Norway set a joint quota of 548,014 tonnes (ICES estimate⁹).
- The 2009 spawning stock biomass (SSB) was estimated to be 3 mt⁹.
- The total estimated catch in 2010 was 930,002 tonnes (compared to a TAC of 527,000 and 572,000 tonnes)⁹.

For 2011

The advice from ICES⁹ was to allocate a total TAC of 592,000 to 646,000 tonnes (fishing mortality range agreed by management plan).

- Both Iceland and the Faeroese set their own autonomous quotas for the fishing year¹⁰ of 146,818 tonnes for Iceland and 150,000 tonnes for the Faeroes. This was estimated to be 32% of the total reported landings¹¹.

- Based on Coastal States historical sharing arrangements, the EU and Norway set a joint quota of 586,663 tonnes (ICES estimate¹⁰).
- The 2010 SSB was estimated to be 2.93 million tonnes¹⁰.
- The total estimated catch in 2011 was 927,245 tonnes (compared to a TAC of 672,000 tonnes)¹⁰.
- This corresponds to a catch reduction of between 47% and 42% compared to the estimated catches in 2012. This would lead to an estimated SSB of between 2.61 and 2.56 million tonnes.
- EU and Norway have set preliminary mackerel quotas. A final decision will be announced once the EU-Norway bi-lateral consultations have been finalised.

For 2012

The advice from ICES¹⁰ was to allocate a total TAC of 586,000 to 639,000 tonnes (fishing mortality range agreed by management plan).

- The EU and Norway have continued to set their fishing allocation according to the conditions of the Coastal States agreement and set a joint quota of 576,670 (ICES estimate¹).
- Iceland and the Faeroe Islands made no change to their approach in setting their own autonomous quotas. Iceland allocated a TAC of 145,000 tonnes and the Faeroese a TAC of 148,375 tonnes respectively¹.
- The 2012 SSB is estimated to be 2.68 million tonnes¹.
- The total catch for 2012 is still unknown but ICES has assumed that quotas set by all countries may lead to catches of around 930,000 tonnes (compared to a TAC of between 586,000 and 639,000 tonnes)¹.

For 2013

The advice from ICES¹ is to allocate a total TAC of 497,000 to 542,000 tonnes (fishing mortality range agreed by management plan).

Current status of the NEA mackerel stock

Scientific advice is provided by ICES. An age based analytical assessment is carried out on the whole stock using catch data and a triennial egg survey to obtain a SSB estimate.

The latest ICES advice was published in September 2012¹. This shows that recruitment into the fishery has been strong since 2002, with the highest recorded year classes being 2005 and 2006. This has led to a substantial increase in stock size from 2002 to 2010. Currently there is insufficient information to reliably estimate the size of the 2009–2011 year classes.

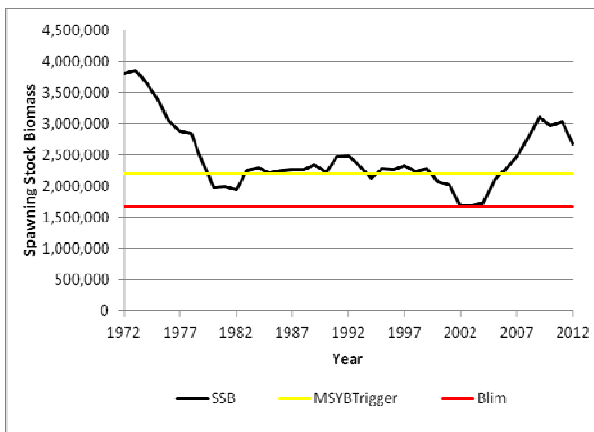
There is the potential for revisions in the estimates every three years when a new egg production estimate becomes available. The results of the next egg survey, due in 2013, will give an important indication of the status of the SSB, independent of fishery derived results. In addition a Nordic survey (to be carried out jointly between Norway, Iceland and Faroe Islands) will be carried out during summer 2013.

The overall picture of stock status has not changed from the position in October 2011. With regard to fishing mortality the stock is being fished above Maximum Sustainable

Yield (MSY) and above the levels agreed by the parties who signed up to the management plan designed to maintain or rebuild stocks. The 2012 spawning stock biomass (SSB - the stocks reproductive capacity) is estimated to be 2.68 million tonnes. This level is above the MSY($B_{trigger}$) level of 2.2 million tonnes, and is above that of the management plan and precautionary limits (B_{pa} and B_{lim}). This means that at present the stock is still at a level which is considered to be at full reproductive capacity.

Spawning stock biomass (SSB)

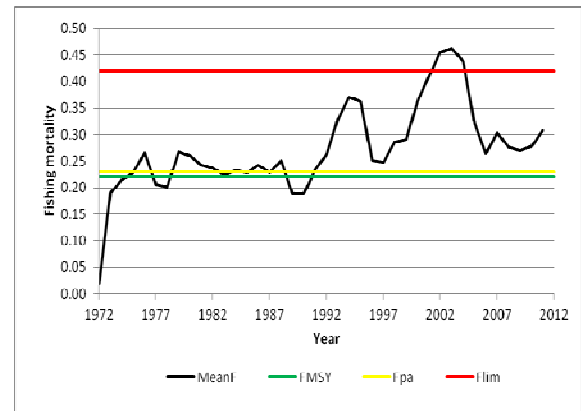
With regard to SSB the stock is still at full reproductive capacity and is of a sufficient size for reproduction to support a commercial fishery. However the trend is towards a decrease in SSB (see graph below).



Fishing mortality (see graph on the right)

The current rate of fishing mortality (F) is estimated to be 0.36. This is above MSY in the long-term (F_{MSY} - 0.20; green line), above management plan (0.20-0.22) and above precautionary fishing mortality (F_{pa} 0.23 - yellow line). Corrective action is required to reduce fishing mortality to levels which are

consistent with the management plan and long-term MSY.



ICES (and the Marine Research Institute in Iceland) have both highlighted changes in mackerel distribution. ICES¹ reports a temporal shift to an earlier spawning migration from March–April, to February, in the southern area (Cantabrian Sea) in 2012, suggesting very early spawning. Spawning distribution has expanded towards the north and northwest, but most of the eggs are still produced in the historical core spawning area located from the west of the Celtic Sea to west Ireland.

The record-high surface temperatures seen in the Nordic seas during summer in recent years, compared to long-term average, have largely increased the potential feeding habitat for mackerel, including a documented large spatial expansion of mackerel to the north and west. This expansion has resulted in increased overlap with Norwegian spring-spawning (NSS) herring in the outer edges of their distribution area, as well as other fish stocks utilizing these feeding grounds.

See glossary on page 8 for terms used.

Other influences

MSC certification suspended¹¹

The certifiers for seven MSC certified mackerel fisheries in the North East Atlantic had their fisheries' certificates suspended in April 2012. This is due to: the inability of all states targetting NEA mackerel to agree on quota allocations within the TAC, therefore compromising the management system such that the MSC standard has not been fully met. The suspension is not the same as a certificate withdrawal as suspended certificates can be re-instated on completion of a condition with no need for a new Full Assessment. Any mackerel caught after 30 March 2012 is not eligible to be labelled as 'MSC certified'. The fisheries affected are:

- Danish Pelagic Producers Organisation North East Atlantic mackerel (DK)
- Irish Pelagic Sustainability Association western mackerel (IE)
- Irish Pelagic Sustainability Group western mackerel pelagic trawl fishery (IE)
- North East Atlantic mackerel pelagic trawl, purse seine and handline fishery (NO)
- Pelagic Freezer Trawler Association North East Atlantic mackerel (NL)
- Scottish Pelagic Sustainability Group North East Atlantic mackerel (UK)
- Swedish Pelagic Producers Organisation North East Atlantic mackerel (SW)

Group action¹²

The MSC has welcomed an action plan aimed at solving the ongoing mackerel dispute in the North East Atlantic (June 2012). The plan was submitted by the

Mackerel Industry Northern Sustainability Alliance (MINSNA) – the seven MSC certified mackerel fisheries whose certificates are currently suspended as a result of the impasse. The successful development of the action plan means fisheries' certificates may remain suspended until 20 January 2014. If the situation is resolved in the interim period then certification can be re-instated without the need for a full reassessment.

Unsustainable fishing trade sanctions¹³

New rules empowering the European Commission to ban EU imports of fish from stocks which are being unsustainably fished were ratified by the EU Parliament and the Council of the European Union in October 2012. It is hoped the ban will discourage massive overfishing of mackerel by Iceland and the Faeroe Islands. The regulation opens the way to trade sanctions against third countries allowing unsustainable fishing of fish and fishery products from stocks of common interest (fish stocks available EU and third countries fleets whose management requires co-operation).

Vessel data collection

The pelagic industry has initiated a groundbreaking project which will research and implement a vessel data collection programme to hopefully enhance the quality of the scientific assessment. The working group will meet in February and comprises respected pelagic scientists and industry representatives from EU, Norway, Iceland and Faroe Islands

ICES benchmark

ICES will benchmark the mackerel stock during February 2014. This process involves reviewing all available data and assesses the

suitability of any new data. The output from this exercise is to refine the current assessment method in a bid to improve the quality of the advice. It will provide up-to-date information on biomass, mortality and recruitment.

Seafish position

Seafish believes that fisheries management must be based on sound scientific advice, underpinned by compliance with that advice. Everyone involved has a part to play and responsible practice by fishermen is fundamental to the sustainability of all fisheries.

Fish do not respect geographical boundaries so it is also imperative that fishing nations co-operate to jointly implement effective management regimes. Only in this way can we preserve both fisheries and the marine environment for the long-term. The unilateral increase in quotas by Iceland and the Faeroes is clearly at odds both with the goals of long-term sustainable practice and co-operative management. We therefore endorse the efforts of the EU, Norway, Iceland and the Faeroes to re-establish and ratify the Coastal States' agreement. Negotiation and compromise will be required because individual businesses could be affected by a protracted period without comprehensive management. Whilst mackerel management has been successful the long term interests of the stock do demand flexibility.

We are encouraged by the initiative taken by mackerel fishermen across the North East Atlantic to engage in a co-operative effort to help manage the stock effectively for the future benefit of all.

Key Points:

- There has been no internationally agreed catch in line with the management plan since 2009.
- The lack of international agreement has led to catches in excess of the advised TAC for the stock.
- Recent recruitment, notably in 2005 and 2006 were the largest recorded in the time series of assessments.
- Strong recruitment has increased the stock size significantly from 2002 to 2010. The stock remains at full reproductive capacity.
- Scottish MSC certification was achieved in 2009. This was suspended in March 2012.
- Scottish and other European MSC client groups have agreed an action plan to press for resolution of the issue. The current certification remains suspended while these efforts continue.
- This is not the first time there have been issues regarding Coastal States agreements on highly migratory fish stocks. It took six years of negotiations to reach an agreement on blue whiting (finally reached in December 2005).
- Changes to the distribution and timing of migrations, and mackerel spawning patterns, have raised both scientific and biological considerations, and questions over the political rationale behind each decision. Every effort must be made to re-instate an international agreement.

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Glossary of terms used

Management decisions for sustainable fisheries should restrict the risk that spawning stock biomass falls below a minimum limit, or that fishing mortality rates become too high.

- **MSY** (Maximum Sustainable Yield). Referred to as F_{MSY} – fishing at levels that catch the maximum proportion of a fish stock, that can safely be removed on a continuous basis; and B_{MSY} – spawning stock biomass that results from fishing at F_{MSY} for a long time.
- **PA** (Precautionary Approach). Referred to as F_{pa} – precautionary reference point for fishing mortality; and B_{pa} – precautionary reference point for spawning stock biomass.
- **Management Plan**. Agreed by all parties to maintain/rebuild stocks.
- **$B_{trigger}$** . Value of spawning stock biomass that triggers a specific management action.
- **B_{lim}** . Minimum level of spawning stock biomass, or limit biomass is defined. Below B_{lim} there is a higher risk that the stock reaches a level where it suffers from severely reduced productivity.
- **F_{lim}** . The limit to fishing mortality.
- **SSB**. Spawning stock biomass or stocks reproductive capacity.

Management should prevent spawning stock decreasing below B_{lim} and avoid fishing mortality above F_{lim} . Advice is generally aimed at avoiding the risk that spawning stock falls below the B_{pa} (precautionary biomass) and fishing mortality increases above F_{pa} .

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See also:

The Seafish Responsible Sourcing Guide on mackerel: <http://www.tinyurl.com/seafishrg>

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