

The North Sea Advisory Council



Advice on a Mixed Fishery Plan for the North Sea

1 Background

- 1.1 The Commission has announced its intention of producing a Multi-Annual Plan for the North Sea. One approach suggested by the Commission is to have a single mixed fisheries management plan covering the North Sea and Skagerrak (and possibly also the Kattegat and the eastern English Channel) that takes into account interactions between fish stocks, fisheries and the marine ecosystem. The plan is intended to achieve the overall CFP objective to *restore and maintain populations of harvested species above levels which can produce the Maximum Sustainable Yield (MSY)*, whilst recognising that a number of species are caught within the mixed fishery in this area, and as far as possible conflict must be avoided between management proposals for these different species. The Commission has launched a public consultation on its proposals. Comments should be submitted by 4 May 2015 at the latest.
- 1.2 The Consultation Paper from the Commission proposes:
- *That multi-annual plans should become the main repository for all of the elements and instruments necessary for the management of the fisheries and stocks.*
 - *This ambition would need to take into account the developments regarding the landing obligation and technical conservation measures that are also underway.*
 - *A new multi-annual plan for the North Sea would aim to fulfil the objectives of the new CFP i.e. to achieve an exploitation rate consistent with the maximum sustainable yield (MSY) objectives of Article 2.2, to ensure high and stable yields for the industry, while taking into account mixed-fishery and ecosystem interactions.*
 - *The plan should respond to the challenges under the landing obligation, and be delivered through a results-based approach that would allow tailor-made management measures to be proposed in close consultation with fishers and Member States at a regional level.*

- *The plan should pay attention to the objectives of the Marine Strategy Framework Directive (MSFD), scheduled for implementation by Member States, aimed at achieving high long-term yields while maintaining productive and healthy fish stocks within functioning marine ecosystems.*

1.3 The Commission has accepted that the Cod Management Plan, and the Plaice and Sole Management Plan, both of which have had a dominant effect upon the management of North Sea fisheries, are in urgent need of revision. These plans were conceived when there was no landing obligation, without foresight of the recent increase in the biomass of plaice and other stocks, and before the most recent reforms to the CFP. The Council Regulation (EU) No 1380/2013 on the Common Fisheries Policy (referred to subsequently as the CFP Basic Regulation) establishes new objectives and means for achieving sustainable fisheries. However, ambiguities in the 2009 Lisbon Treaty have led to a lengthy Inter-institutional dispute over who is responsible for Management Plans under the CFP, and has delayed the revision of existing plans and particularly the Cod Management Plan. A new agreement, arrived at by a joint task force in April 2014, has proposed a compromise between the Council and Parliament, based on a shared understanding of the main elements in a new approach. A new mechanism exists for approving and implementing management plans through co-decision, and is the basis for the current Commission initiatives for the Baltic Sea and North Sea.

1.4 If adopted, the North Sea Mixed Fishery Plan would be amongst the first of the new multi-annual management plans. It would need to:

- Recognise the need to manage the fisheries in line with MSY objectives of the CFP.
- Pay attention to the objective for Member States to achieve Good Environmental Status (GES) by 2020 under the Marine Strategy Framework Directive (MSFD).
- Include provisions that ensure coherence with the landing obligation.
- Ensure that any negative impacts of fishing activities on the marine ecosystem are minimised by adopting an ecosystem approach to fisheries management.
- Provide scope for a regional approach to management.
- Ensure that there is sufficient scope to review and revise the plan at appropriate stages, in the light of new scientific evidence; and avoid the problems of rigidity and inflexibility encountered with the Cod Management Plan.
- Begin with a relatively simple approach, building the plan incrementally to incorporate more species and broader ecological considerations over time as necessary and in accordance with scientific advice.
- Recognise the diversity of the mixed fisheries that are targeting the main species in the North Sea, and consequently recognise that trade-offs will have to be adopted, driven not only by scientific considerations.

- 1.5 It is generally recognised that, in its current stage of development, the ICES mixed fisheries advice is not be considered as full management advice, but as an evaluation of a limited number of scenarios. These scenarios are currently not sufficient to give a comprehensive view of all the trade-offs possible and there is a need to define specific objectives for mixed fishery management that ICES can evaluate, similar to the current reviews of single species harvest rules. For example there will be a need to revisit and adjust the harvest rules once the impact of the landing obligation is identified.
- 1.6 In preparing a North Sea Mixed Fishery Plan, the Commission is seeking scientific advice from ICES and STECF, and is also asking the Advisory Council and stakeholders to provide relevant evidence and information to help the Commission develop its thinking in this area. In preparing its advice the NSAC wishes to emphasise that the Advisory Council must play a full role in the development of the new plan. The NSAC has valuable experience of the likely impact of management measures and the most successful outcomes in terms of implementation. We must make best use of the time available; the NSAC does not simply want to comment on a fully developed plan from the Commission or respond only to questions posed by the Commission. The NSAC looks forward to full and transparent collaboration with the Commission at every step of the way.
- 1.7 Given the importance of introducing a mixed fishery plan for the North Sea that achieves the right balance between biological, economic and social criteria, the NSAC would urge the Commission to ensure that it requests and receives appropriate socio-economic advice from the STECF, as required for a full impact analysis, in addition to the biological/stock advice and environmental advice that also needs to be considered. The NSAC would welcome sight of any socio-economic advice on the development of the North Sea mixed fishery plan as soon as it becomes available.
- 1.8 Initially, it has been proposed by the Commission that stocks concerned in the Mixed Fishery Plan should include:
- Cod
 - Haddock
 - Whiting
 - Saithe
 - Plaice
 - Sole

There might also be a case for including *Nephrops*, which is already considered in the ICES mixed fisheries advice, if appropriate objectives can be defined. In any event, the plan will also have to account for fishing mortality for stocks in other fisheries. The Commission is proposing a simple plan initially, with relatively few stocks. However, the Commission does recognise that an important aspect of any mixed fishery plan will relate to how the plan will deal with minor or by-catch stocks. Furthermore it should be noted that some of the main species could be targeted or fished in a mixed assemblage, though they are not considered as being by-catch species.

- 1.9 Current management of North Sea fisheries considers the stocks independently from each other. The Commission remarks that: "*scientists and fishers consider it is not ideal, because it does not take in to account the inter-relationships between different fish*

stocks, and also between the fish stocks and the fleets and fishing gears used to target them". The Commission suggests that it may be impossible to continue to ignore these aspects when the landing obligation enters into force, and that this is the motivation for considering a management plan that covers multiple stocks and fisheries in the North Sea.

1.10 The Commission recognises that within a mixed fishery plan there is a need to make full use of the sustainable yield that is available. Any deviation from a single stock management plan to a multiple stock and "métier" approach implies a need to balance the objectives for each stock and fishery, within the constraints set by Articles 2 and 9 of the CFP Basic Regulation. The plan has therefore to search for optimal balance of exploitation across the main species' group, which will imply trade-offs; seeking to optimise the economic outcome of all stocks combined, whilst remaining within the biological constraints. The Commission proposes to set a range of target fishing mortalities for each stock (as originally suggested by the NSRAC). That is, set scientifically determined F_{msy} ranges rather than point estimates. The Commission also accepts the need to reduce the impact of any unavoidable associations between species (where targeting one species in a given area may result in the capture of another), by reaching agreement at regional level on technical measures, closed areas and other means for reducing the capture of the unwanted species.

1.11 Under Article 10 of the CFP, multiannual plans have several mandatory elements:

- Defined objectives, consistent with the relevant provisions of the CFP
- Quantifiable targets and deadlines
- Conservation reference points, consistent with the objectives set out in Article 2
- Objectives, and measures to achieve those objectives
- Be consistent with the landings obligation
- Contain safeguards
- Include provisions for revision of the plan

1.12 Preliminary discussions on a mixed fishery plan for the North Sea demersal fisheries took place at a Commission scoping meeting, held in Brussels on 29th and 30th September 2014. After discussion, the meeting concluded that a number of major issues would need to be resolved in preparing a mixed fishery plan for the North Sea. These issues included:

- Dealing with cod. How do we continue to rebuild the cod stock whilst maintaining other fisheries?
- Incorporating specific alternative conservation measures for dealing with by-catch species (both commercial and non-target) and species of lesser importance to fishers

- Defining the areas to be covered by a Mixed Fishery Plan for the North Sea and dealing with stocks that straddle the North Sea and other management areas
- Ecosystem-related issues should be considered in the context of the plan, where corresponding management tools would be required to minimise negative impacts of fishing activities on marine ecosystems and avoid degradation of the marine environment.

1.13 The NSAC accepts the need to explore a mixed fishery approach to management, and recognises that the current single stock regulatory approach has its limitations, especially in respect of the requirement to meet the landings obligation within a TAC management system. However, the current system does provide some safeguards for fishing businesses. Any mixed fishery approach that is adopted should be as simple as possible and not too prescriptive, at least at the outset; whilst incorporating the requirements set out in the CFP Basic Regulation. There are also technical aspects of a mixed fishery approach that are best dealt with at a regional level and/or through delegated acts and not under co-decision procedures. The NSAC should be continuously involved in any discussions on the proposals and their future development to ensure: (1) that the required actions are practical and make sense to fishers, and (2) the expected future outcomes, in terms of social, economic, and environmental impacts, are achieved.

2 Dealing with cod

2.1 Currently, the objective of restoring and maintaining populations of cod above levels which can produce MSY has not been met, although MSY fishing mortality is considered to be achievable within the anticipated timeframe and by 2020 at the latest. Indeed, the results of the latest surveys, provided in the Report of the ICES Benchmark Workshop on North Sea Stocks¹, suggest that a more positive picture is emerging for cod. The advice from the benchmark workshop has been sent to ICES ACOM and is expected to be signed off at the June ACOM meeting. Cod are now spawning at a younger age, and this has given rise to higher Spawning Stock Biomass (SSB) estimates in recent years, resulting in changes to the stock recruitment relationship as well as the reference points derived from it. Blim has now been increased and is now based on the spawning biomass in the last year to produce a good year class; Bpa has been revised downwards slightly. The associated precautionary fishing mortality reference points (Flim and Fpa) have not been revised. Fmsy is now estimated to be higher at 0.22. Thus, although effective measures for rebuilding cod stocks are still required, the position for cod is slowly improving.

2.2 There is a particular problem arising from the uneven distribution of cod in the North Sea. The cod stock is expanding more rapidly in some areas than others; that, combined with the management of quota under a landings-based system, has led to discarding of cod. TACs based on the abundance of cod estimated over the whole North Sea can lead

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http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2015/WKNS_EA2015/01_wknsea_2015.pdf

to the discarding of cod in areas where local stocks are especially strong. ICES has noted that there is evidence that cod form sub-stocks in the North Sea and that these may be responding differently to management measures, although there is currently no specific scientific advice available for these substocks. The absence of the disaggregated catch data and annual migration information necessary for comprehensive regional assessment of separate sub-stocks poses a problem. ICES advice notes that: *“the presence of subpopulations largely inhabiting different regions of the North Sea will mean that there is a potential for regional differences in fishing mortality... Management measures ensuring sustainable exploitation of substocks may be needed in addition to management for the stock as a whole. The change in spatial distribution of cod in combination with the relative stability criteria used to allocate the quota has changed the access of the different fisheries to the resource. This may create problems in managing the fisheries. In some areas, where the present abundance of cod is low, a quota based on historical allocation keys cannot be fully used while in other areas where abundance is relatively high, the quota may be exhausted prematurely and increases the incentive to discarding of catches of over-quota cod.”* There is a need to examine how spatial management of the North Sea quota can be developed to ensure that cod recovery is achieved throughout the North Sea.

- 2.3 Much has already been done by fishers to improve the status of cod through the adoption of more selective fishing methods and cod avoidance measures. It is clear that over time any mixed fishery management plan that includes North Sea cod will need to reflect and address these issues, possibly with mechanisms to achieve better management of the regional abundances of cod (based upon scientific advice when that becomes available), while restoring the whole stock as required by Article 2 of the CFP.
- 2.4 The Commission has confirmed that Article 2 of the Basic Regulation sets a timeline for reaching an MSY level of fishing mortality by 2015 where possible, and by 2020 in any event. Steady progress has been made towards reducing fishing mortality over the last eight years and SSB has responded by increasing steadily since the historic low point achieved in 2006. It will be important within the new plan to ensure that fishing mortality continues at levels that will meet the CFP objective of restoring and maintaining populations of cod above levels which can produce MSY. Annual TACs must be set in line with this fundamental legal objective, aiming for a projected increase in biomass.
- 2.5 Fmsy ranges will be part of any mixed fishery plan, to enable the setting of TACs for different stocks at levels coherent with each other. The cod stock is now rebuilding steadily, and the central management aim should be to continue that trajectory.

3 Incorporating measures for dealing with minor and by-catch species

- 3.1 Management measures are also required for non-target and/or non-commercial species. In mixed fisheries, it may be difficult to completely avoid catching non-target and/or non-commercial species. Adaptive changes to fishing patterns may go some way towards improving selectivity and/or catch composition; however it is unlikely that vessels will always be able to avoid all unwanted catches.

- 3.2 Although it may not be possible to have full analytical assessments of all species caught in commercial fishing activities, the objective of the reformed CFP to restore and maintain populations of harvested species above levels that can produce MSY still applies to all harvested stocks, and will be important for achieving GES under the MSFD.
- 3.3 There should be a commitment by all parties to obtain sufficient data to ascertain whether these legal obligations are being met, although some understanding of perspective, scale and achievability will be necessary.
- 3.4 Council Decision 2010/477, which deals with criteria and methodological standards on GES of marine waters, is currently under assessment. Under this decision, Descriptor 3 for achieving or maintaining good environmental status requires that F values are equal to or lower than F_{msy} , the level capable of producing Maximum Sustainable Yield (MSY). This means that in mixed fisheries and where ecosystem interactions are important, long term management plans may result in exploiting some stocks more lightly than at F_{msy} levels in order not to prejudice the exploitation at F_{msy} of other species.
- 3.5 Species caught in commercial fisheries can be grouped into six main categories (examples given are for illustrative purposes only and will vary by métier):

	Marketed	Landed to some degree/not widely marketed	Not landed
Species managed by catch limits	Main commercial /target species (e.g. cod, herring)	minor/by-catch species (e.g. dab)	Zero TAC species (e.g. spurdog)
Species not managed by catch limits (non-quota species)	Target species (e.g. sea bass, squid)	Minor/by-catch species (e.g. gurnards)	Prohibited species (e.g. common skate)

- 3.6 It is noted that where species fit within this matrix will vary according to their characteristics, especially with regard to whether there are markets for the species, and also seasonally for some species. However it may help to identify general approaches to managing minor or by-catch species in the context of a mixed fishery plan. Further complexity in approach arises where a species is judged as being targeted in one fishery and sea area but is an unavoidable by-catch in another. It will be difficult to deal with issues such as this where they sit within the same set of management parameters.
- 3.7 Currently, tools are being developed with the aim of helping managers make decisions about management of minor or by-catch species. One such method that is currently in development, including by ICES scientists, is a Productivity and Susceptibility Analysis (PSA)². This method has wide applicability to risk analysis. With this methodology, the *productivity* of species is scored based on attributes such as maximum age, maximum size, reproductive strategy and number of young, and growth patterns. This helps

² see pages 34-41 of the ICES WKLIFE III Report (2013)
<http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2013/WKLIFE3/Report%20WKLIFE%20III.pdf>

determine how vulnerable a species may be to fishing pressure; a species would be “high risk” or “highly vulnerable” if they have attributes like slow growth, old age at maturity, and few young. The *susceptibility* of species is related to how “catchable” they are in relation to fishing patterns. This metric is based on attributes such as the overlap of the geographical range of the species with fishing activities, how likely the species is to encounter the gear and be caught in it, and what its post-encounter survivability is likely to be.

- 3.8 Conducting a PSA for all the minor, by-catch and benthic species typically caught or impacted by the North Sea mixed demersal fisheries, as advice becomes available, might allow decision-makers to prioritise “high risk” species (those with low productivity and high susceptibility) for more precautionary management measures and closer monitoring. Such prioritisation may be useful for management and monitoring purposes, although such management must be in line with the CFP’s MSY objectives, which applies to all “harvested species”. Inter-linked with this obligation is the 2020 deadline for achieving GES under the MSFD, which includes related MSY-based targets. Thus, conducting PSAs might also allow decision-makers to better highlight the trade-offs that are possible.
- 3.9 It is clearly undesirable that a major fishery should have to close due to the poor status of a minor or by-catch species. This is why having good management measures in place to protect these species and prevent over-exploitation is important.
- 3.10 Management by Total Allowable Catches (TACs) may not be the most effective way of achieving the requirements of EU fisheries and environmental legislation (i.e. the CFP and MSFD) and/or may have undesired consequences regarding the exploitation of the main commercial species. It will be important to explore alternative measures for reducing the capture of minor and by-catch species. There are several measures that might be adopted through regionalisation:
 1. Selectivity improvements that are economically viable: Endangered, threatened and protected species with high vulnerability to fishing may benefit from changes to fishing gear design and/or spatial adaptations to help prevent unwanted catches.
 2. Spatial/temporal closures, either temporary or permanent.
 3. Best practice in terms of trawl duration, holding tanks and handling protocols should be applied to ensure maximum survival for the species that must or may be returned to the sea.
 4. A combination of measures may be required, such as seasonal or real time closures, specifications on gear type and specifications on vessel size or horsepower. If the state of the stocks relative to precautionary/conservation reference points or ranges indicate that additional measures are necessary, there should be an agreed framework in place so that these can be introduced quickly.

5. It would be sensible to take STECF's views in advance on the consequences of removing TAC status from any species. Under the CFP any decision to remove TACs has to be accompanied by measures to restore and maintain the population in question above levels capable of achieving MSY.

4 Areas to be covered by a Mixed Fishery Plan for the North Sea

4.1 It is understood that the mixed fishery plan will cover the North Sea and the Skagerrak. However, it will be important to ensure that the plan is compatible with plans in adjacent areas, which share the same stocks. Although the plan for the North Sea must concentrate on that core area for jurisdictional reasons, there needs to be coherence with plans for other areas. For the North Sea those areas include:

- Eastern Channel
- Kattegat
- West of Scotland

4.2 The focus in developing a plan has to be on the North Sea but the provisions must fit with plans for other management areas. Some fish stocks, such as saithe, are managed at scales larger than the North Sea, and fishers themselves may operate over several areas. We recognise that straddling stocks are important, although the NSAC is not putting forward specific advice at this stage.

5 The way forward

5.1 The NSAC accepts the need to explore a mixed fishery approach to management, provided that this approach is developed with due caution. It is recognised that the current single stock regulatory approach has its limitations, and can lead to unsatisfactory outcomes. However, the current system does provide some safeguards for fishing businesses. Developing ranges for Fmsy, rather than fixed points, would certainly be a step forward, and multi-species models may be required to enable the magnitudes of these Fmsy ranges to be estimated. A mixed fishery approach might also assist in mitigating some of the adverse effects of the introduction of the landing obligation. However, any approach that is adopted should not be too prescriptive. What is really being considered is the adoption of a mixed fishery approach to management. The NSAC will need to be centrally involved in discussion of any such proposals, to ensure that appropriate social, economic, and environmental safeguards are put in place.

5.2 The NSAC has taken note that ICES will provide further advice on mixed fishery assemblages to the Commission in due course. Currently, the ICES mixed fisheries advice has evaluated a limited number of scenarios, but these have not been sufficient to give a comprehensive view of all the possible trade-offs. The NSAC recognises that the science is evolving and emphasises that as new models come forward they will require close scrutiny to check them against reality. In particular the assumptions will

have to be revisited and adjusted with the introduction of the landing obligation. In using such models to evaluate different management objectives and options it will be especially important to ensure that the questions asked are appropriate and relevant. The outputs of such models are very dependent on the management strategies that are tested. The NSAC requests that some kind of infrastructure be created to bring together scientists, fishery managers and stakeholders to interrogate such models and pose the important questions. The NSAC wishes to play a full role in framing the terms of reference for ICES and STECF in providing such advice. This is best achieved through a regional framework.

- 5.3 The NSAC notes that the Commission intends to undertake a socio-economic impact assessment, and will then come forward with a final proposal for the second half of 2015 (before implementation of the landing obligation for demersal fisheries in the North Sea). The NSAC would like to have more information on the proposed impact assessment and the assumptions on which it will be based. The NSAC wishes to play a full role in the development of the new plan, in line with the intentions of a regionalised approach of the new CFP. The NSAC has welcomed the scoping meetings held by the Commission and notes that there will be a need for further scoping meetings involving the NSAC as the plan develops.
- 5.4 As the TACs for some of the most commercially important stocks in the North Sea are set jointly by EU and Norway, within the context of the annual reciprocal agreement, it will be highly desirable to secure Norway's understanding and agreement to any shift to a mixed fishery strategy.
- 5.5 Mixed fisheries plans will only be as good as the data and advice they are based on. A strong knowledge base built on sufficient scientific data is key to the success of the plans. It is therefore important to continue building on the improved cooperation and understanding between fishermen and scientists that has emerged in recent years. There is concern among scientists about the impact of the landings obligation on the quality of data, and whether there will continue to be sufficient quantitative scientific data to support a new mixed fishery plan for the North Sea. The landing obligation, if implemented well, does have the potential to acquire additional data on catches.
- 5.6 The overall purpose of a mixed fishery plan is to achieve a new management framework. Previous management plans, notably the cod management plan, have been too rigid. They have been developed and approved through legislative procedures that have rendered them incapable of being revised, even when changes are urgently required to safeguard fish stocks and fisheries. Plans should be adaptive, whilst providing a stable long-term framework. Simplicity is therefore desirable, although the content of multiannual plans must include measures to achieve the objectives of the CFP in line with the CFP Basic Regulation. Article 10 requires a multiannual plan to provide for its own revision after an initial ex-post evaluation, in particular to take account of scientific advice.
- 5.7 Previous management plans have not achieved all they set out to, because they were designed in the absence of stakeholder involvement. The introduction of mixed fishery plans will be a major step forward and the NSAC will need to be involved closely in all

future discussions of the plan. We will be able to present the views of industry and other stakeholders, and that will assist with achieving practical application of the plan.