



CONSEIL CONSULTATIF POUR
LES EAUX OCCIDENTALES
SEPTENTRIONALES

NORTH WESTERN
WATERS
ADVISORY COUNCIL

CONSEJO CONSULTIVO PARA
LAS AGUAS
NOROCCIDENTALES

EU Transparency Register Id. No: 8900132344-29

NWWAC Recommendations

On the development of alternative management strategies for skates and rays

24 March 2017

The NWWAC exchanged views on options for alternative management strategies on skates and rays at a Focus Group on skates and rays held in Dublin, on 16th and 17th November 2016. The NWWAC recognised the limitations of the current management framework and sought alternative management options to improve the sustainable exploitation of skates, rays and sharks (elasmobranchs).

The NWWAC noted that the EC in its proposal for the 2017 TACs (COM (2016) 698) put forward a partial subdivision of species within the combined TAC approach, but recommended that alternatives were investigated before restructuring the management of these stocks. The NWWAC requests that it is involved in any dialogue concerning future management proposals for elasmobranchs.

General comments

The NWWAC has several observations on the current management of elasmobranch fisheries in EU waters:

1. The combined TAC regime does not allow for adequate protection of stocks that are in a bad or unknown state, while for some stocks scientific evidence suggests that increasing abundance levels could support increased exploitation;
2. Although data availability has improved since the recording of species separately within the logbook became compulsory, data collection for most species remains incomplete:
 - There is still a need for improved identification skills at point of capture and upon landing,
 - Some elasmobranch species do not show up in the main fisheries independent surveys,
 - Some species are not very abundant in EU waters, or show a patchy distribution.
3. Without mitigation measures in place, the current management regime, which uses a combined TAC for all species, will lead to an almost immediate choke situation under the application of the landing obligation for skate and rays.

The NWWAC highlights the declining trend of the combined TAC for skates and rays in areas 6 and 7 since 2009 and, in contrast, the scientific advice, which indicates positive abundance trends for some commercial species in this period. This has created an inconsistency between the level of combined TACs and the abundance observed at sea for some stocks. Particular examples are undulate ray (*Raja undulata*, Divisions 7.d.e) and thornback ray (*Raja clavata*, Subarea 4 and Division 7.d). Despite positive trends in scientific surveys and ICES advice suggesting that the landings of these stocks could be increased, the EU fisheries management process does not allow for a rapid adjustment of the catch opportunities. The inconsistency between the trends in biomass and the TAC limits the potential profitability of the fishing industry that exploits these stocks, which could lead to a loss of involvement of fishermen in the implementation and advancement of relevant projects on skates and rays.

Currently, elasmobranchs are being discarded for different reasons, mainly because of TAC restrictions, but also due to catches of undersized individuals or catches with no commercial value. In response, a number of initiatives have taken place in different Member States to improve the selectivity of elasmobranch catches. For example, the French industry has proposed that they use 90% of their quota in the eastern channel to fish thornback ray and 10% for other species and have introduced a daily catch limit for some fisheries and implemented a Minimum Conservation Reference Size (MCRS) of 45cm Total Length (TL) for all species. Belgium applies a MCRS of 50cm TL for all species and the Producers Organisation (PO) applies a penalty system for rays landed under 1kg, in order to protect young individuals. Dutch PO's (mainly in the North Sea) have introduced a MCRS of 55cm TL for all species and a limit of 125kg by week or by voyage taking longer than a week. In English, Inshore fisheries, different MCRS apply depending on area and the North Devon Fishermen's Association has operated a seasonal ray box in the Bristol Channel on a voluntary basis, to protect juvenile ray and spawning stocks.

Individual Member States have carried out research projects, e.g. to improve the biological knowledge of elasmobranchs in the Channel, and pilot studies have improved survival estimates. Industry members of the AC are frustrated that all of these efforts have scarcely been taken into account when TACs are set. The French industry is particularly dissatisfied with the inconsistency between the observed trends in biomass and the catch opportunities for undulate ray.

It is the objective of the NWWAC to provide advice to the European Commission on more appropriate management alternatives for elasmobranch fisheries, which could be investigated, in order to achieve an improved level of confidence in the European system of resource management.

1. Priorities for dealing with the Landing Obligation

1.1 Survivability exemptions

Survivability exemptions under the landing obligation are a tool to avoid choking of the fisheries for stocks that have a good chance of surviving the discarding process, like skates and rays (see STECF evaluation¹). The NWWAC notes that STECF consider that a discard ban for elasmobranchs should not be introduced unless more reliable stock specific estimates of survival rates are available. There are generally insufficient data on elasmobranchs to evaluate the most appropriate choke mitigation measures, (e.g. a quota uplift, survival exemption).

Some industry members of the NWWAC consider that a survival exemption should be applied to skate and rays in the interim, on the condition that guidelines are distributed to fishermen on good deck handling and release practices that increase survivability. This would allow suitable time to collect data in support of the longer term application of a survival exemption.

The representatives of the Other Interest Groups stress the importance of having scientific evidence that demonstrates high survival rates before such an exemption is granted, because this essentially removes the stock from the landing obligation and thus the incentive to change fishing behaviour.

The NWWAC requests an evaluation of the current data to identify knowledge gaps (see 2) and advocates for the collection of new data in order to determine the most appropriate mitigation measures to avoid elasmobranchs choking fisheries.

Preliminary research data on elasmobranch survival are available only for certain technical measures (e.g. gear, area) and few species. Despite the increased number of studies examining elasmobranch discard survival, comparisons between disparate studies can be problematic due to differing methods of catching and handling target species (Ellis *et al.*, 2016), which is compounded by the fact that not all studies provide full descriptions of the gears, fishing operations, handling and environmental conditions.

In advance of any new management regime, and considering that it will not be feasible both practically and financially to conduct scientific studies for each species, by metier and area, it is the NWWAC's objective to prioritise species, gears and areas, for which further studies to support exemptions or investigate additional measures, are needed. If a stock is likely to choke a fishery, choke mitigation measures should be tailored to that stock.

1.2 Prioritising species

In general, it is considered that species with high discard rates will most likely cause fisheries to choke when the landing obligation is implemented. More data is required before a decision can be made to determine the most appropriate mitigation measure for use in these fisheries (e.g. survival exemption, quota uplift etc.).

¹ STECF plenary meeting 16-20 April 2012, Brussels (see [Link](#), in English only)

Preliminary results of survival studies suggest that there are differences in survivability in individual skate and ray species, often related to tow duration (see table II in Ellis *et al.* 2016²).

It is the conclusion of the NWWAC, following discussion on landing and discard estimates for different commercially exploited elasmobranch species (STECF [Fisheries Dependent Information database](#)³), that the species with high landings and discards in North Western Waters are thornback ray (*Raja clavata*), blonde ray (*Raja brachyura*), undulate ray (*Raja undulata*) and cuckoo ray (*Leucoraja naevus*), with the latter showing the highest discard levels.

NWWAC recommendations:

The NWWAC requests that the Commission assess whether exemptions could be granted based on preliminary research⁴, and on the conditions that: additional data will be collected and that 'good practice' handling guides will be distributed.

The NWWAC suggests that survivability studies are prioritised, focussing first on those ray species that have a high discard rate and suggests that studies are conducted on one species with a low chance of survival and one with a high chance of survival, (e.g. cuckoo ray and thornback ray⁵). The outcome of such studies would provide guidance on the need for future survivability work.

1.3 Prioritising areas and gear types

Following discussion on landing and discard data by area and gear type, the NWWAC concludes that those areas and gears with the highest discards are likely to cause fisheries to choke when the landing obligation is implemented.

NWWAC recommendations:

The NWWAC recommends that survivability trials are established, which focus on: the Irish Sea, Channel and Celtic Sea for gear types: BT2 and TR2. At a later stage, studies could be conducted on static gear, such as trammel nets.

If it is demonstrated that the fisheries and species composition in the Celtic Sea for a specific gear type is similar to that in the English Channel, trials could be set up in only 2 areas instead of 3.

Additional research could consist of:

- Programs to collect additional information on vitality (at-vessel mortality), which is a relevant indicator of survival (e.g. Observers, self-sampling);

² Ellis *et al.* 2016 A review of capture and post-release mortality of elasmobranchs. Journal of Fish Biology doi:10.1111/jfb.13197

³ The STECF database has been assessed by STECF, but the quality and completeness of the data are under the responsibility of the Member States. Information about the coverage of the data provided by Member States can be found in the [Fisheries Dependant Information data call coverage report](#).

⁴ This proposal has also been included in the NWWAC advice to the NWW Member States in response to their request for advice for the Joint Recommendation for 2018 ([Link](#))

⁵ Based on expert knowledge and research (Enever *et al.* (2019), The survival of skates (Rajidae) caught by demersal trawlers fishing in UK waters ([Link](#))).

- Quantification of the effects of ‘best practices’ to improve survivability (i.e. handling on board, change of fishing practice (e.g. spatial management, gear design, tow or soak time etc.(see 2 below));
- Large-scale tagging programs involving industry-science partnerships.

1.4 Uplift

When the landing obligation is implemented for elasmobranchs, quota top-ups must be calculated to compensate for previous discards. It is relevant to take into account any regulatory discards as a consequence of inconsistencies between the TAC or quota available at fleet or vessel level, and the actual abundance. Examples are thornback and undulate ray fisheries, where a discrepancy exists between the scientifically evidenced abundance and the combined TAC.

The NWWAC notes that uplifts can only be calculated when discard rate information is available. ICES advice indicates that this type of information is currently unavailable for most species of elasmobranchs.

The industry seeks recognition that their data is included in stock assessments as it is not currently evident in ICES advice⁶, although it is referred to as input data in WG reports⁷.

NWWAC recommendation:

The NWWAC recommends that fishermen receive incentives to expand the collection of catch data at species level for all elasmobranchs and that fisheries scientists and managers are encouraged to use all available data.

⁶ ICES (2016) advice on fishing opportunities, catch, and effort Celtic Seas Ecoregion ([Link](#))

⁷ ICES (2016) Report of the Working Group on Elasmobranch Fishes. ICES CM 2016/ACOM:20

2. Evaluation of data availability

Data deficiency is a big issue for the scientific assessment of elasmobranchs. Since 2009, some ray species have been recorded in the logbook separately, which has improved data availability and has led to the possibility of selling each species under the appropriate FAO code. The identification guides that have been distributed in different Member States have increased the species-specific data quality. For example, guides have been distributed in France since 2010, SharkTrust guides⁸ have been distributed in the UK and Ireland and FAO guides are generally available. Shark Trust has also developed two apps for the identification of [sharks skates and rays](#) and [egg cases](#). Experiences across Member States has shown that practical guides should be a single page and list the main species caught in a specific area (e.g. HaroKit project (Belgium), [link](#) in Dutch only). In the Netherlands, an education module on elasmobranch biology has been developed for fisheries schools, which includes the identification of elasmobranchs.

NWWAC recommendations:

The NWWAC recommends that practical identification guides should consist of a single page, which is robust and waterproof. Guides should be standardised across all Member States, regionalised (e.g. Channel, Celtic Sea, West of Scotland and Ireland, North Sea) to reduce confusion with species that do not occur in specific areas and available to download online in different languages. Efforts should also be made to actively engage with fishermen to increase the uptake of available identification tools.

At the same time, scientific, stock-specific data should be collected to increase the biological knowledge. The combination of these new data sources should be used for assessments as soon as possible.

2.1 Re-evaluation of existing data

NWWAC recommendation:

The NWWAC suggests that an expert group (e.g. ICES or STECF) is asked to evaluate all existing data sources and to provide feedback on their quality, suitability and usefulness and to identify data gaps.

2.2 Additional data collection

Improved data collection, beyond the recording of catches, is needed to improve the stock assessments for skates and rays. Fishermen recognise this, and would like to continue collaborating with scientists to improve data quality. At present, however, reduced observer coverage on fishing vessels is an issue in several regions. Reasons mentioned for this are:

- The data collection framework only requires coverage of the main métiers by Member State;
- Small boats (<10m LOA) cannot accommodate observers on board for safety reasons,
- Some fishermen do not see (positive) results of sharing information with science;

⁸ For example identification guides for British sharks by SharkTrust (see [Link](#) in English only)

- Some fishermen are reluctant to share data of commercial interest.

This situation has the potential to be aggravated by the implementation of the landing obligation.

The NWWAC is confident that many fishermen would like to be more closely involved in scientific projects where the objectives are to improve the management of the fishery and develop practical solutions to operational problems. A need exists, therefore, for more transparent and improved communication between industry, science and policymakers.

Communication on the following topics is needed to incentivise additional data collection:

- The political will to change the stock management policy following the outcome of science-fisheries partnerships;
- A clearer demonstration of why observer data are needed for the development of a good fisheries policy;
- Feedback for fishermen who participate in research projects on the data collected on board their vessels and on how these data have been and will be used;
- The continuation and improvement, where needed, of an active dialogue with fishermen about incentives for additional data collection;
- Education and training on how to help improve knowledge and implementation.

The NWWAC will continue to address this topic at its meetings, by inviting scientists to explain the use of fisheries dependent data in stock assessments and in the calculation of quota top-ups².

NWWAC recommendations:

In combination with the practical identification guides, the NWWAC recommends that guides should also be developed in different languages on good handling practices, possibly adapted to gears fishing areas and/or for inshore and offshore fleets. Good examples are the one page guide from the HaroKit project ([link](#) in Dutch only) the 'best practice' guide developed by SharkTrust⁹ and guides developed for the tuna fisheries to address large pelagic elasmobranchs bycatch (French SELPAL project, [link](#) in French only).

The NWWAC recommends that Member States provide access to EMFF funding to support short-term science-fisheries partnership projects (Article 28, Reg. EU 508/2014 (EMFF)) on the condition that data needs and usage are clearly stated from the beginning. At the same time, the NWWAC will continue to engage and collaborate in relevant scientific projects (e.g. H2020, Atlantic Action Plan (Interreg), DG MARE call for tenders).

⁹ Commercial Fisheries Advisories and 'best practice' handling guide by SharkTrust (see [Link](#), in English only)

3. Rethinking the group TAC

The NWWAC notes the problem of translating ICES advice for individual skate and ray stocks into combined TACs for skates and rays in North Western Waters. The NWWAC has considered a number of alternative management options to improve the protection of sensitive species and at the same time allow the sustainable exploitation of abundant stocks.

The result of this consideration is as follows:

3.1 To split the group TAC into single-species TACs

The NWWAC considers that this option is not practical because:

- It would necessitate the establishment of new relative stability keys for each TAC, which would require species-specific catch data, which is currently limited;
- It would require scientific consensus on the exact stock unit by species, whilst many parts of the wider area are data-limited.

3.2 To introduce sub-TACs within a combined TAC, as proposed by the EC's non-paper in November 2016

This option would create a sub-TAC for stocks with a poor or unknown status, thus limiting catch opportunities for susceptible stocks, whilst allowing an increase in catches for healthy stocks like the thornback ray. Nevertheless, the EC should discuss the criteria and choice of species for a sub-TAC with scientists and the industry, considering that:

- This does not reduce the mortality of stocks with a poor or unknown status;
- This may still create choke situations if no survival exemption is granted;
- This may necessitate the establishment of new relative stability keys for the sub-TAC

This option could be combined with option 3.4 (see below) and there is the possibility that it could be implemented at a national level.

3.3 To split the group TAC into families

This option would split the TAC into inshore and offshore species, based on the separation of *Raja* and *Leucoraja* genera .

- Although there are data-limited species in both genera, this has the potential to partly differentiate between the main commercial, data rich species and the less commercial, data deficient species;
- This type of TAC split will not prevent a fishery from choking once the elasmobranchs are included in the landing obligation (the *Leucoraja* are mainly data poor species);
- Splitting the group TAC into families would make sense from a biological point of view, and may also match the activities of different fleets;
- Such a split may necessitate the establishment of new relative stability keys.

- Splitting the group TAC into families may still create choke situations.

3.4 Dividing the large management areas into smaller, logical management areas

Biologically meaningful management areas could be, for example, the Channel, Irish Sea, West of Scotland and 7.b and c, and the Celtic Sea.

- This would allow regional or localised management to better address stocks of concern and better reflect the status of the main commercial stocks;
- This could better reflect the existing knowledge of stock units and species distributions, and so be more biologically meaningful;
- This may still create a choke issue;
- This will not resolve the problem of protecting stocks with poor or unknown status;
- This would be a more practical solution that is workable for the fishing industry;
- This may necessitate the establishment of new relative stability keys.

3.5 Dividing the family-based TAC over large management areas into smaller management units (by genus and smaller management areas)

This option combines options 3.3 and 3.4

NWWAC recommendations:

The NWWAC suggests that the EC establishes an expert group to:

- 1) evaluate if the options described above are precautionary,
- 2) identify the options most effective to achieve biological and socio-economic sustainability and
- 3) list the main advantages and disadvantages of each option.

The NWWAC recommends that the management areas are adjusted in order to match the most effective, biological meaningful areas.

4. Alternative Management Solutions

4.1 Use of technical conservation measures

Selectivity can improve both the escape of unwanted catches as well as the survival of species caught. Improving selectivity in certain gears for skates and rays will require innovative solutions due to the specific shape of some elasmobranchs.

- Selectivity options need to be developed, and existing options assessed, in close collaboration with the industry;
- Exchange of information on proposed projects and project results across regions is necessary, in order to optimise the use of funds and avoid overlapping research.

The NWWAC encourages the EC and Member States to cooperate on projects and exchange information on active and proposed trials of technical conservation measures and the results obtained (e.g. selectivity and survival).

NWWAC recommendation:

Provided that funding is made available, the NWWAC can facilitate the organisation of meetings (in addition to its workplan) to bring together stakeholders, the EC, scientists and experts in skate and ray fisheries to discuss the possibilities of improving selectivity and avoiding unwanted catches.

4.2 Integrated spatial management

In order to predict areas that can most effectively protect depleted and/or rare stocks with minimum displacement of current fishing practices, integration of economic and ecological data should be evaluated.

A risk-based approach could be used to identify those species most at risk through the use of Productivity Susceptibility Analysis (PSA), which assesses how likely a stock is to be adversely impacted by fishing activity. Subsequently, the most effective management units and conservation measures could be identified for these stocks.

This could be achieved by:

- Combining objectives with existing protected areas (MPAs);
- Considering spatial management options (e.g. a project on skates and rays in the Irish Sea).

NWWAC recommendations:

The NWWAC recognises that other human factors, such as gravel extraction, mud dredging, large coastal developments and marine renewable energy, can also impact skate and ray stocks in areas of high biological value (e.g. nursery, reproduction areas). These impacts should be taken into account when developing spatial management plans.

The NWWAC considers that more collaboration is required to develop spatial management tools that can help fishermen improve their fishing strategies and avoid certain areas (e.g. fishing exclusion zones in the English Channel are implemented to protect both sensitive species and juveniles). More specifically, the NWWAC finds the results of the Irish project on rays in the Irish Sea very promising, and encourages the EC and Member States to cooperate in expanding the project to other countries and species.

4.3 Real-time information sharing to guide fisheries behaviour

In order to be able to adapt fishing patterns to avoid elasmobranch catches, methods for fishermen to exchange information to enable them to make better informed decisions on their fishing behaviour are needed (e.g. the UK spurdog project).

This could be achieved by:

- Using an automated system for data collection, storage and exchange;
- Working through Producer Organisations;
- Providing training and coaching, which is essential in order to convince fishermen of the advantages of data exchange and changes in fisheries behaviour.

An additional advantage is that this approach could also be applied to other species (e.g. fish below the MCRS).

NWWAC recommendation:

The NWWAC positively supports the existing UK project on spurdog and encourages the EC and Member States to cooperate in expanding the project to other countries and species.

The NWWAC considers that there are many benefits to these kinds of initiatives, but French industry members note that fishermen do not want to focus on this option, in the first instance.

4.4 Prohibited species list

In recent years, species of elasmobranchs have been added to the prohibited species list at the December Council. Such impromptu additions raise questions, in view of the fact that small-eyed ray (*Raja microocellata*), one of the most common skate species in the Bristol Channel, was considered as a prohibited species (not to be retained as a footnote in the global TAC) at the start of 2016, only to be removed several months later and then proposed by the Commission as a candidate for a sub-TAC in area 7.fg and 7.d. Similarly, as of 2017, spurdog is listed on the prohibited species list despite ICES indicating an increase in abundance of spurdog and advising that a small TAC could be allowed for vessels engaged in by-catch avoidance programmes¹⁰. As of 2014, tope (*Galeorhinus galeus*) when caught with longlines have been included on the prohibited species list without clear justification. ICES advice indicates, however, that tope is highly vulnerable to overexploitation⁷.

¹⁰ Piked dogfish is listed as prohibited species in the EU regulation 2017/127 ([Link](#))

NWWAC recommendation:

The NWWAC recommends that there should be more transparency on the criteria, justification, procedure and timetable whereby species can be nominated for inclusion on, or removal from, the prohibited species list.

5. Conclusions

In conclusion, the NWWAC has consolidated a comprehensive list of management possibilities for rays and skates. In order to decide on the most effective management strategies, the NWWAC suggests the following options be further explored:

5.1 Survivability

The NWWAC suggests that survivability studies are prioritised to focus, in the first instance, on species with high discard rates. Results of this work could potentially provide information about the minimum and maximum survivability rates for these species.

Trials should primarily focus on BT2 and TR2 gears, specifically in the Irish Sea and the Channel if it can be demonstrated that the fisheries and species composition in the Celtic Sea for a specific gear type is similar to that in the Channel.

Furthermore, the NWWAC advises that survivability studies should take into account:

- a) Information on vitality (at-vessel mortality), that could be collected through observer and/or scientifically acceptable self-sampling programs;
- b) Quantification of the effects of 'best practices' to improve survivability (i.e. handling on board, changing fishing practice (e.g. spatial management, gear design, tow/soak time etc.));
- c) Large-scale tagging programs involving science-fisheries partnerships.

5.2 Data availability

Data deficiency is a big issue for the scientific assessment of elasmobranchs. The NWWAC suggests that an expert group (e.g. ICES or STECF) are asked to evaluate all existing data sources and to provide feedback on their quality, suitability and usefulness and to identify data gaps. The NWWAC will endeavour to convince fishing industry members to collaborate with scientists to improve data quality.

The NWWAC recommends that standardised, practical guides are developed that can be used easily on board vessels to enable fishermen to quickly identify different skate and ray species and provide instructions on best handling practices. These guides should be made available online and in different languages.

The NWWAC recommends that the Member States provide access to EMFF funding to support short term, science-fisheries partnership projects.

5.3 Rethinking the group TAC

In order for the NWWAC to provide advice on the most appropriate management strategy for skates and rays, an evaluation of alternative management options (see 3) is needed in order to:

- a) Identify options, which are precautionary;
- b) Identify those options, which are most effective in achieving biological and socio-economic sustainability, and;
- c) List the main advantages and disadvantages of identified options.

5.4 Spatial management

The NWWAC can facilitate the organisation of meetings in order to bring together stakeholders, the EC, scientists and experts in the fisheries to discuss possibilities to improve selectivity and the avoidance of unwanted catches and to develop spatial management tools that can help fishermen improve their fishing strategies and avoid certain areas.

In this context, the NWWAC supports the Irish project on rays in the Irish Sea as well as the UK project on spurdog and encourages the EC and Member States to cooperate in expanding these projects to other countries and species.

5.5 Prohibited species

The NWWAC recommends that there is more transparency on the criteria, procedure, justification and timetable whereby species can be nominated for inclusion on, or removal from, the prohibited species list.