



CONSEIL CONSULTATIF POUR
LES EAUX OCCIDENTALES
SEPTENTRIONALES

NORTH WESTERN
WATERS
ADVISORY COUNCIL

CONSEJO CONSULTIVO PARA
LAS AGUAS
NOROCCIDENTALES

ACTIONS TO UNDERTAKE AND CONSIDERATIONS FOR REDUCING MORTALITY OF SKATES AND RAYS ONBOARD

By Member States and Other Interest Groups

By Fishing Industry

1. Data Collection

1. What type of skates and ray species are collected

- 1.1. Sampling programmes collect data on skates and rays during observer programmes, from industry-sampling or self-sampling programmes, and logbook data. These programmes cover areas that are determined by the spatial extent of the national fisheries.
The temporal resolution as well as the type of data collected for skates and ray species varies between countries.

The NWWAC recommends standardization and harmonisation of national data collection programmes.

ICES working group WKSHARK 3 has summarised data in a common format
[full report available online](#)
see 3.2 (page 7)
see 4.1 (page 38)

- 1.2. 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.

Examples of identification guides are:

- Shark Trust has also developed two apps for the identification of sharks skates and rays and egg cases
- HaroKit identification and best handling practice guide (only available in Dutch)

- 1.1.

The NWWAC recommends that the fishing industry should actively participate in self-sampling and observer programmes to increase data availability and quality.

- 1.2. Efforts should be made to actively engage with fishermen to increase the uptake of available identification tools (see 6).

The NWWAC recommends that training of both scientific observers and crew should be organised on a regular basis to guarantee uptake, and illustrate and quantify improvement (see 6).

2. Fishing Process

On-board of fishing vessels, unwanted fish are sorted and discarded at sea and other valuable fish are kept on-board. Discarding of unwanted catch is limited to one phase: sorting.

Fishing process:

- Setting
- Phase 1: net
- Phase 2: Fishing practice (e.g. BTT max 2h trawl duration)
- Phase 3: Hauling net - start when net is pulled onboard (duration 10min)
- Phase 4: Catch is released on conveyer belt (duration 20min, without discards)
- Phase 5: Sorting (duration depends on catch)

The NWWAC recommends that EMFF funding is made available for on board modifications.

2. Technical modifications on deck

Examples of technical modifications are:

- Conveyer belt positioning + add water supply
- Adjustment of hopper (size, shape, trap door system...)
- Modification of ship's side vail

The NWWAC recommends that the best available technological modifications are identified and exchanged by means of, for example, stakeholder meetings. To increase uptake of the technical modifications measures, improved communication, involvement of the industry and funding availability are essential.

3. Selectivity

Improving selectivity of skates and rays will require innovative solutions due to the specific shape of the species.

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

The NWWAC recommends that a permanent working group is established

3. Selectivity

- 3.1 Size Selectivity
Limited options available due to their morphology (BTT: 2 cod-ends instead of 1 (less pressed fish); adjustment on the codend so they would feel the flow/turbulence of the water less)
- 3.2 Species Selectivity

Some options like escape panels may be optional in certain fisheries (e.g. *Nephrops*)

[see Research for PECH Committee - Landing Obligation and Choke Species in Multispecies and Mixed Fisheries - The North Western Waters](#)
[see STECF report on Long-term management of skates and rays \(STECF-17-21\)](#)

The NWWAC recommends that the fishing industry actively participate in this working group

4. Avoidance

4.1

Studies are on-going in NL and FR using survey and discard data to investigate the distance that would be required to change the catch composition and potentially avoid certain ray species. Preliminary result show that fleet displacement would be required over 240km to avoid catching certain ray species in subsequent hauls. (Brunel, T., Verkempynck, R., Batsleer, J. (2019). Best practices II : spatial distribution of the discards of the Dutch beam trawler fleet. IJmuiden, Wageningen Marine Research)

4.2

4. Avoidance

Options available to the industry are:

- Sharing information voluntarily between fishermen to avoid hotspot real-time

This further illustrates that closures needs to be very large areas. It should be taken into account that closures are only effective if they control mortality and little is known about the effects of when the area re-opens.

- Temporal closures of spawning and nursery areas if known (improved data collection will widen the scope potentially)

The NWWAC recommends that a wider study is conducted to evaluate the effectiveness of closures in the control of mortality of skates and rays and the economic viability. The NWWAC recommends the evaluation of the current MPA network established for other purposes with regards to their impact on skates and rays.

The NWWAC recommends that the fishing industry actively participate in this study.

5. Survival

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5.1 Fishermen interact with various types of skates and rays that range in size, weight, shape and pose various degrees of danger to the crew. The complexity of handling process increases with the size of the individual.

5.1 Release strategy should be planned in advance as actions need to be taken collectively onboard. It is crucial that each crew member understands their role in the operation

5.2 Handling animals safely begins with knowing the animals biology and behaviour, especially those that make the animal vulnerable

5.2 Under water, rays can suffocate (blood circulation is reduced)
Once caught, fish are landed on a conveyer belt and transported to the sorting belt. Unwanted catch are manually sorted.

The **manual** on good handling practices should recommend safe handling practices "Do's" and "Don'ts" for both the animal and the crew, include basic biology to provide background on the weaknesses and could provide different release options depending on the type of ray and fishery.

The NWWAC recommends that manuals are evaluated and harmonised across members states to establish best practice.

Taking into account that several tagging programmes are being conducted as part of survivability studies, the NWWAC recommends that the manual include information on the different types of tags, their position and actions to be taken in case a tag is discovered.

The NWWAC recommends the fishing industry to return tags when discovered.

The NWWAC recommends that specific training is provided (see 6).

Example of a best practice manual:
[- Good practices to reduce mortality of sharks and rays caught in tropical tuna purse seiners](#)

6. Training

6. Raising awareness and increasing uptake

Communication, education, post-implementation monitoring and long-standing collaboration are the **key factors to success** of this programme. Transferring the mitigation methods to the entire fleet by training the crew on the practices proposed and monitoring the implementation of these practices onboard should be part of the implementation of the fishing plans.

The majority of crew are likely to improve their handling practices if they are presented with practical solutions that are not time consuming or difficult to employ.

The NWWAC recommends to distribute the fishing plans to the fishing industry and provide information posters to display onboard vessels. In addition, disseminating information on best practice via video and/or training workshops increases fishers knowledge on the bycatch issue, improves their ability to remain alert, and increase buy-in.

The NWWAC recommends that fishermen's knowledge is integrated into the design of a best practice guide.

For example, as part of best practice, a 'tool kit' could be distributed consisting of soft rags to cover eyes, canvas to use when lifting large individuals, pair of protection gloves, etc.

Role of the crew

1. Skipper: maintaining vessels course, communication with other vessels, planning next set - primary location is on the bridge
2. Crew: handle catch, must work quick to retain freshness and quality of seafood (sanitary proof)
3. Mechanic-master: in charge of maintenance and mechanical problems, spends most of his time into the holds.

Empowerment of staff: appoint a bycatch manager

One crew members could be designated 'bycatch manager' and coordinate good bycatch practices onboard.