

# AQUATIC ANIMAL WELFARE GUIDELINE

## - TRAWL SECTOR -

The Australian commercial capture fishing sector includes operations in all states and the Northern Territory, and targets a wide range of species. The following animal welfare guideline has been developed in consultation with commercial wild capture trawl fishers.

Development of these, and other fishing method guidelines, was an initiative of the Aquatic Animal Welfare Working Group (AAWWG), formed under the Australian Animal Welfare Strategy (AAWS). The Australian Government through the Department of Agriculture, Forestry & Fisheries provided funding for the development of these initial guidelines together with significant in-kind contribution from industry.

This Guideline sets out principles and recommendations for best practice for responsible trawl fishing operators. It is a living document, meaning the guideline and recommendations will be reviewed regularly and improved as capture techniques evolve or understanding of aquatic animal welfare improves.

### GENERAL AIMS AND PRINCIPLES

The overall aim of this guideline is to minimise stress in fish being captured within the constraint of practices inherent to the commercial trawl sector. It is recognized that there is a close relationship between animal welfare and the quality of seafood produced.

This Guideline has been written to ensure compatibility with the Aquatic Animals - Overarching Welfare Principles developed by the AAWWG and set out in Attachment A. These Principles apply to fish that are farmed, transported, captured from the wild by both commercial and recreational fishers, or in aquaria in restaurants or private homes.

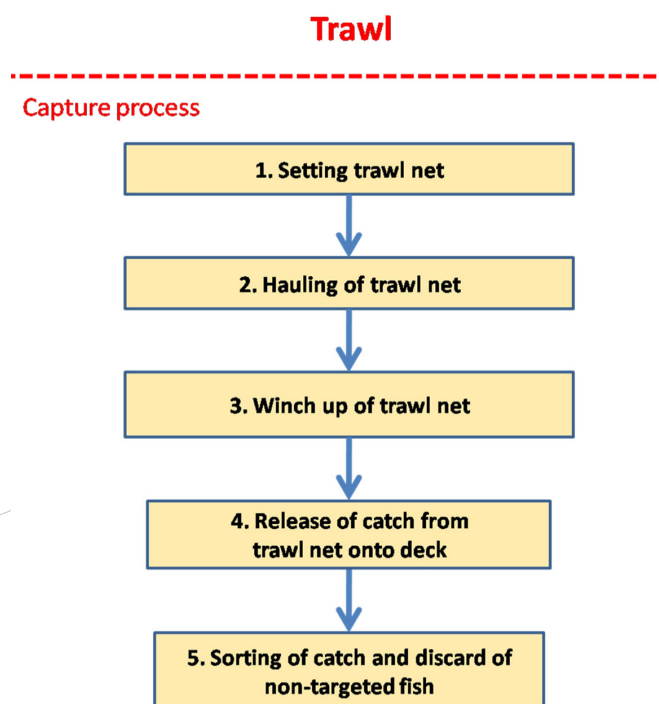
Of the eight Overarching Principles, the three most relevant to the commercial wild harvest industry are:

1. Timely handling from capture to death is essential to minimise stress;
2. Capture methods should be designed to minimise the capture of unwanted fish
3. Any fish selected for harvest should be killed as rapidly as possible, by humane means suitable for the species.

In general, the overall process of capturing fish by trawl should minimise stress in the targeted species by minimising time from capture to death.

### COMMERCIAL TRAWL

The steps taken to capture and kill fish in trawl operation are described in Fig 1 below.



\* Note: Step 4 and 5 can also include release of catch from trawl net directly into Refrigerated Seawater Tank (see Fig 2 & 5).

From an animal welfare perspective, the overall goals of capturing fish by trawl should be to:

- avoid capture and/or maximise escape of non-retained species during trawling;
- minimise stress on captured fish by efficient hauling, sorting and processing procedures
- minimise time from capture to death of targeted species.

### FISHING GEAR AND VESSEL PREPARATION

Trawl fishers should identify and use gear, technology, and practices which:

1. Are suitable for the target species;
2. Minimise damage to captured fish species;
3. Reduce the capture and mortality of non-retained catch.

Good preparation prior to fishing is critical to minimizing stress of fish being captured. Efficient practices when trawling, hauling, sorting and processing fish will also enhance product quality.

Fishers should ensure regular maintenance of vessel and gear to reduce risk of malfunction during the fishing operation that can mean that fish suffer unnecessary stress.

All reasonable precautions should be taken to prevent the loss of fishing gear and fishers should make every effort to retrieve lost fishing gear.

Commercial trawl fishers should consider technologies that minimise stress in fish and maximise escape of non-targeted species (eg. using suitable mesh size or by catch reducing gear technology). For example some operators use cod-ends made from knotless netting (Figure 2) where only preferred species are retained in the cod-end. Smaller species are expelled by the large mesh size and cod-end design. Netting is strong to prevent shark bites and knotless material prevents damage to retained fish by abrasion.



Figure 2: Knotless cod-end design



Figure 3 - 'Top Opening Escape Slit'

Figure 3 demonstrates a 'top opening escape slit' designed following studies into non-target catch release. The 'slit' is held together by magnets until force is applied (eg. by a turtle, shark, large fish). Magnets pull the slit closed once animal has passed through and target catch moves through to cod end.



Figure 4 - 'Semi Rigid Grid'

A 'semi rigid grid' aids self-release of large fish, turtles and sharks while target catch flows through.

### TRAWLING STEPS

Step 1 – Shooting ("setting") the net:

Shooting (setting) the net initiates the fish capture process.

Step 2 – Length of trawl "shot":

The amount of time that a net is 'shot' is important for both the welfare of captured fish and the quality of the seafood product to be sold. The 'shot' time should be long enough to allow a commercial catch of target fish but short enough to ensure, where possible, that target and non-target fish are alive and at minimum stress levels when the net is retrieved. This will allow the maximum number of non-target species to be released alive and minimise the degree of stress in targeted fish.

Technologies that provide the skipper with real-time information on the number of fish captured in the net (eg: net sensors) can be used to assist with understanding if sufficient targeted fish have been captured prior to the designated hauling time.

#### Step 3 – Winching up (“hauling”) trawl net:

The total time taken in winching up the net (hauling to surface) should be minimised to ensure the maximum number of non-target species can be released alive and maximise the overall quality of the targeted species.

#### Step 4 and 5 – Release of fish / Sorting of catch / Discard non-target species:

The catch should be released onto a cool sorting surface or into a refrigerated sea water holding tank, with maximum spread of the catch to minimize weight on individual fish (Figure 5). All captured fish should be removed from the sorting surface as quickly as possible.

These methods assist by immediately reducing the internal temperature of the fish. Methods to ensure cessation of brain activity occurs as quickly as possible using these methods are under investigation.

There is a trend in some other commercial fish production industries (eg. aquaculture/line fisheries) to use killing methods that are designed to kill fish individually. In the trawl industry, the smaller size of the species of fish captured, the larger numbers captured per shot and need to process fish quickly, usually precludes the use of such individual fish killing techniques. In addition, prolonging the overall pre-killing (capture and sorting) process in an attempt to individually kill each fish may increase the overall stress of the captured population as a whole and compromise the quality of the seafood product.

With larger catches, spiking (ike jime) is inefficient and the time taken to spike large numbers of fish would increase stress and reduce product quality. Exposure to air should be reduced to a minimum. Captured fish should be handled with efficient equipment and practices (eg. hoppers) to minimise damage to the fish.

Hoppers (Figures 2 and 6) have a large grate/mesh that allows only targeted catch to drop through and any large fish or by-catch can be slid back over the side from the grating. The vertical doors close to protect the fish that are in refrigerated sea water in the hopper in the processing area one deck down from the open deck.



Figure 5 – Ice Slurry / Refrigerated seawater (RSW)

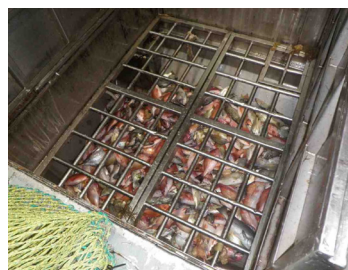


Figure 6 – Fish ‘hopper’ for handling catch

Regular monitoring of handling practices of captured fish should identify practices to improve welfare of the fish and corrective action taken.

## DUTY OF CARE

While the goal of fishers should be to apply the principles in this Guideline if ever a situation arises where a decision needs to be made between following the principles outlined in this Guideline and ensuring worker safety then AT ALL TIMES worker safety must take precedence.

Workplace safety is of the upmost of importance and must not be compromised under any circumstances.

It is acknowledged that employers have a duty of care to provide individual fishers with a safe workplace and to adhere to all laws and standards to prevent unsafe practices.

Individual fishers have a duty of care to work in a safe manner and at all time to adhere to the work standards and levels of safety stipulated by the vessel owners and managers.

## RESEARCH AND INFORMATION GATHERING

Trawling is a method used to capture fish across a variety of target species. Trawl fishers can capture many of fish in one shot. There is limited information that identifies valid, robust and practically feasible indicators to evaluate the welfare of these species during the capture and slaughter process.

Trawl fishers should continue to actively pursue research and information gathering to assist in the evaluation of capture to killing techniques and continuously improve methods for capture to killing of the different targeted species. Fishers should communicate information on any new methods or information to other fishers through industry associations.

Where new and effective, practical and cost-effective methods become available to kill captured fish, these methods should be adopted by industry to enhance fish welfare.

## ATTACHMENT A

### Aquatic Animal Welfare – Overarching Principles

In the context of Aquatic Sector of the Aquatic Animal Welfare Working Group under the Australian Animal Welfare Strategy (AAWS), only vertebrate finfish are considered Aquatic Animals; other aquatic vertebrates are considered under other Sectors of AAWS. (**Note 1**)

The approach taken with animal welfare to date within the Aquatic Animal sector has been to establish overarching Principles against which sub-sectors can build their specific best practice guidelines to achieve animal welfare. (**Note 2**)

The overall aim of the aquatic sector (fish that are farmed, being transported, kept in aquaria, captured from the wild both commercial and recreational, or in aquaria in restaurants) should be to minimise suffering within the constraint of practices inherent to that sub-sector. (Note 3)

Specific measures include:

1. For fish held in captivity, the key parameters (temperature, salinity, pH, dissolved oxygen, & metabolites) of the aquatic environment in which fish are maintained should be within the species' natural range of tolerance.
2. For fish held in captivity, the holding unit in which they are normally housed should provide
  - safety from predators,
  - refuge from environmental extremes beyond their natural range of tolerance,
  - appropriate space,
  - appropriate space and/or water flow to avoid chronic degradation of water quality parameters referred to in point 1 above. (Note 4)
3. For fish held in captivity the feed supplied should meet known nutritional requirements, and be distributed in a manner and frequency which avoids starvation for periods longer than the species natural range of tolerance.
4. For fish held in captivity, any visibly damaged or sick fish should be assessed and either treated appropriately or promptly removed for killing by humane means suitable for the species.
5. During any handling of live fish,
  - care should be taken to avoid any damage to the fish
  - for prolonged handling of fish out of water (eg health checks, vet treatment, artificial reproduction, etc), an anesthetic appropriate for the species and frequent irrigation of skin and gills is essential
  - fish intended to remain alive should be returned to the water promptly.
6. Any fish selected for harvest should be killed as rapidly as possible, by humane means suitable for the species
7. For fish harvested from the wild timely handling from capture to death is essential to minimise suffering. (Note 5)
8. Capture methods should be designed to minimise the capture of unwanted fish.

## EXPLANATORY NOTES

**Note 1:** The duty of care principles are couched within the Australian Animal Welfare Strategy under which these specific aquatic animal principles will be applied.

**Note 2:** As a code there is no legislative basis. Words such as ‘must’ hold no relevance. Animal Welfare legislation is the place for definitives and the code assists operators to meet those definitives through words such as ‘should’.

**Note 3:** Suffering is inclusive of pain and other issues of animal welfare.

**Note 4:** This principle when read with principle 1 covers all aspects. The detail of parameters such as water flow, stocking density, behavioural aspects and space will be in the sub-sector code themselves depending on operational method and species.

**Note 5:** ‘Capture’ as defined in sub-sector codes.

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