

# AQUATIC ANIMAL WELFARE GUIDELINE

## - MESH NETTING-

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 mesh netting 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 mesh netting 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 mesh netting fishing sector. It is recognised 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.

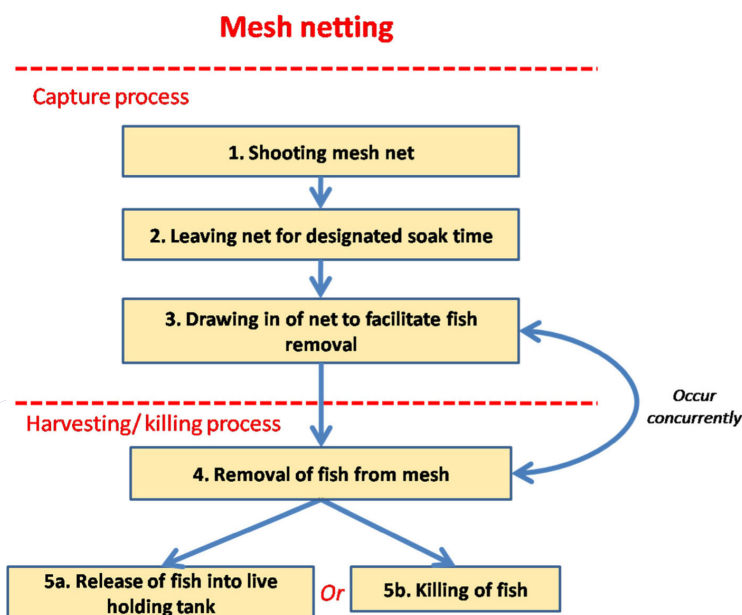
Of the eight Overarching Principles, the three most relevant to the commercial wild harvest industry are:

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 mesh netting should be to minimise stress in the targeted species by minimising time from capture to death.

### COMMERCIAL MESH NETTING

The general steps taken to capture and kill fish in mesh netting are described in Figure 1.



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

- avoid capture and/or maximise escape of non-target species during mesh netting;
- 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

Mesh net fishers should identify and use gear, technology and practices which:

- is suitable for the target species;
- minimises damage to captured fish species;
- reduces the capture and mortality of non-retained catch.

Good preparation prior to setting nets is critical to minimizing stress in fish being captured. Efficient processing practices when retrieving the net and processing retained fish will maximise animal welfare and also enhance product quality.

Before each journey, fishers should ensure regular maintenance on vessels and associated gear reducing risk of malfunction during the mesh net operation and minimizing stress in target species.

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

### MESH NET FISHING METHOD

Step 1 – Setting the net:

Setting the net initiates the capture process. It should be done in a manner that minimises inadvertent tangling or clumping of the net

Step 2 – Set time:

The amount of time that the mesh net is allowed to “soak” is important for the welfare of fish and the quality of the end product.

The length of the net, mesh size, equipment used, training of crew and time of ‘soak’ period should be such that any fish captured in any part of the mesh net has the best opportunity to be alive when removed from the net or can pass through the net if undersize.

The set 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 still alive when the net is retrieved.

Step 3 and 4 (should occur concurrently) – Retrieving of net / Removal of fish from net:

Retrieving of the mesh net should be done in a smooth and controlled manner - commencing at the end of the net that was first placed in the water.

Any fish that will not be retained should be returned to the water immediately. Incorrect handling or delay will increase the amount of stress in any captured fish and will reduce product quality for those species retained.

Excessive handling of fish species will increase the amount of damage and potentially create a greater risk of infection that can lead to the death of those fish released. While firstly ensuring that there is no danger of being spiked, bitten, cut or stung, fishers should use the following procedures:

- use wet gloved hands to handle fish
- release the fish into water quickly, handling fish as little as possible
- support the body of the fish to avoid damage to internal organs or to the backbone

Step 5A- Release of fish into live holding tanks:

Some mesh nets fishers sell fish as ‘live’ product. To accommodate this method vessels should have live holding tanks on board with appropriate recirculating water systems.

Exposure to air should be reduced to a minimum. Fish that are kept alive should be placed into the holding tanks immediately after removal from the mesh net. The key parameters (temperature, salinity, pH, dissolved oxygen, and metabolites) of the water in the tanks should be maintained within the species’ natural range of tolerance.

#### Step 5B- Killing of fish:

Fish that are to be killed when removed from the mesh net are generally placed directly into an ice slurry or refrigerated salt water (RSW). 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. If able to be achieved efficiently, fish should be spiked. Death of targeted fish should not be delayed.

If able to be achieved efficiently fish can be killed by the 'ike jime' method (Figure 1). Iki Jime is a traditional Japanese technique used to kill fish by brain ablation. A major benefit of the Iki Jime technique is that it is more humane than by other methods.

To use the iki jime technique hold the fish firmly and insert a spike into the brain. This should be done as soon as possible after capture.

An interactive learning tool via electronic media has been developed including a demonstration video on a new dedicated website [www.ikijime.com](http://www.ikijime.com).



Figure 1 – iki jime / spiking fish

There is a trend in other commercial fish production industries (eg. aquaculture/line fisheries) to use killing methods that are designed to kill fish individually.

However, prolonging the overall pre-killing process to facilitate the individual killing of fish may increase the overall stress of the captured animals as a whole and may compromise the quality of the product.

Smaller fish may best be killed through stunning after placing in ice slurry (Figure 2). An ice slurry should have the consistency of wet cement and a temperature between  $-1^{\circ}\text{C}$  and  $+4^{\circ}\text{C}$



Figure 2 – Ice slurry

#### 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 utmost 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

Mesh netting is a method used to capture fish across a variety of target species. There is limited information that identifies valid, robust and practically feasible indicators to evaluate the welfare of these species during the capture and killing process.

Mesh net fishers should continue to actively pursue research and information gathering to assist in the evaluation of capture, handling and killing techniques (where fish are killed) and continuously improve methods for capture, handling and if applicable killing of the different targeted species. Fishers should communicate information on any new methods or information to other fishers through industry associations.

#### 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, and 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 (e.g. 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.