AQUATIC ANIMAL WELFARE GUIDELINE - BEACH SEINING -

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 beach seine 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 beach seine 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 beach seine fishing 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.

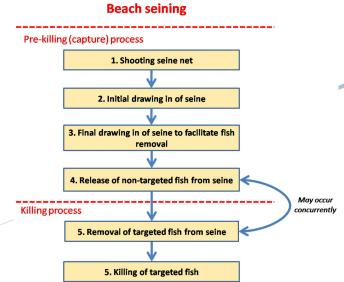
Of the eight Overarching Principles, the three most relevant to the commercial wild harvest industry are:

- 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 beach seine should be to minimise stress in the targeted species by minimising time from capture to death.

COMMERCIAL BEACH SEINE PROCESS

The steps taken to capture and kill fish in beach seine are described in Figure 1.



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

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

FISHING GEAR AND PREPARATION

Beach seine 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 in fish being captured. Efficient processing practices when hauling and processing fish will also enhance product quality and safety.

Before each journey, fishers should ensure regular maintenance on vessels, vehicles and associated gear reducing risk of malfunction during the beach seine operation and minimizing stress in 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.

BEACH SEINE STEPS

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

Shooting (setting) the net initiates the capture process. It should be done in a manner to ensure minimal stress on captured fish.

There should be sufficient capacity in the net to hold fish while sorting without excessive crowding. The net should not be shot if it will encircle a school of fish that exceeds the capacity of the fishing operation to handle the fish efficiently.

Step 2 – Initial Hauling of Seine net:

This should occur as soon as possible after initiation of the capture process (ie encircling school of fish).

It should be done smoothly, efficiently and in a manner to ensure minimal stress on captured fish. A slow haul speed should be used to ensure fish are not forced to swim at speed before capture.

At the end of Step 2 captured fish should have been exposed to minimal stress

Step 3 - Final drawing of seine net:

The final drawing of the seine net should occur immediately the hauling ropes are in.

The net should be drawn as much as is required to facilitate initial sorting and removal of the captured fish and release of non-retained species. There should be sufficient water volume in the net to ensure levels of dissolved oxygen remain adequate for the fish species captured.

Step 4- Removal of fish from seine net:

This step should be done as quickly as possible after the net is fully hauled in (Step 3).

As fish are removed and the density of fish in the cod end is reduced, the net should be carefully drawn to ensure removal continues smoothly and quickly. Rough handling will increase the amount of damage to fish, increase stress and reduce quality of the final product.

Excessive handling of all fish species will increase the amount of stress. 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

The gear used to remove fish from the seine (eg hand sorting, brailing net) should not damage fish and should be of a sufficient capacity such that removal of fish is done as efficiently as possible (Fig 2).

It is acknowledged that future improvements in the technology associated with removal of fish may assist in the efficiency removing fish. Beach seiners should continue to actively pursue investigation of improvements in technology.





Figure 2 and 3 – brailing fish from net

Step 5- Killing of fish:

As beach seine species are smaller in size and catch numbers are usually higher than other catching methods it is preferable that the fish be initially placed into refrigerated seawater (RSW) or ice slurry to ensure most humane death, maximize product quality and to maximize the survival of non-target species until they can be returned to the water (Fig 5). Exposure to air should be reduced to a minimum.

Once the seine net is drawn, all captured fish should be removed from the net as quickly as possible. Targeted species are generally removed from the net and placed directly into refrigerated seawater or an ice slurry bin to reduce activity, reduce stress and induce stunning.



Figure 4 – placing fish immediately into refrigerated sea water

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. Prolonging the overall pre-killing (capture) process to facilitate the killing of fish may increase the overall stress of the captured population as a whole in commercial beach seining operations however some local government regulations make this difficult when operating on public beaches.

With larger catches, spiking (ike jime) is inefficient and the time taken to spike large numbers of fish increases stress and reduces product quality.

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

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

It may also compromise the safety of the crew and quality of the product.

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

As 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.
- 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 anaesthetic 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.

