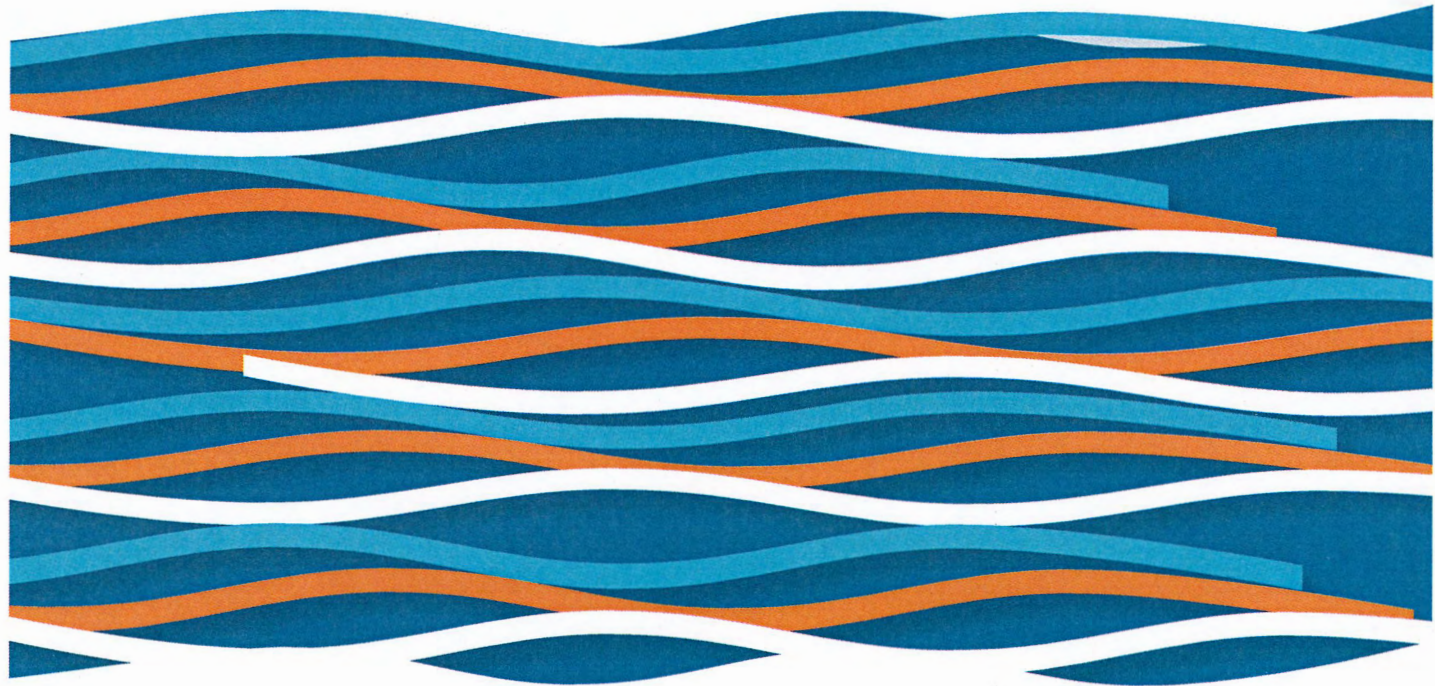


NORTHERN TERRITORY

Aquarium Fishery

Environmental Management System



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OVERVIEW OF ENVIRONMENTAL MANAGEMENT SYSTEM

This Aquarium fishery EMS establishes a process for planning, implementing, reviewing and improving the activities of operators in the Aquarium fishery to manage risks and opportunities relating to;

- environment
- animal health and well being
- occupational health and safety
- profitability
- public relations and communications

PURPOSE

- To document how Aquarium Committee members are currently meeting, and will continue to meet, their responsibilities as users of a publicly owned resource.
- To provide a basis for Aquarium Committee members to communicate and cooperate with other resource users and resource managers involved with the Aquarium fishery.

SCOPE

The EMS encompasses environmental, economic and social aspects of collection and husbandry operations conducted by Aquarium Committee members to ensure that the ecologically sustainable development of the fishery is maintained.

DEVELOPMENT

The EMS is based on a risk analysis of the commercial Aquarium fishery. Risks which the Committee has direct influence over are internal risks and can be managed. External risks are those which are associated with the activities of other people which may directly or indirectly impact on the Aquarium fishery.

Based on the risk analysis, the Aquarium Committee has developed practical guidelines, including a Code of Conduct and Code of Practice. These guidelines and commitments are the core of the EMS.

REVIEW

The success of actions against objectives will be reviewed annually. An EMS summary report will be produced and distributed to all Aquarium Committee members and made available to other stakeholders.

OVERVIEW OF FISHERY

The Aquarium fishery is a multi species fishery covering in all inland waters and waters seaward of the high water mark to the outer boundary of the Australian Fishing Zone, between the Queensland and Western Australian maritime boundaries.

A wide range of live fish and benthic organisms are collected and transported to local, interstate and overseas aquarium markets. The fishery targets ornamental fresh water and marine species, including many types of fishes, crustaceans and benthic species. Principal fresh water species are Red scats, Silver Scats, Catfish, Saratoga and Rainbowfish. Principal marine species are Clownfish, Scribbled angel fish, Margin coral fish, Corallimorphs and Hermit crabs.

Species are collected using diving gear, hand tools and nets. Due to the highly selective collection methods used there are extremely low levels of by-catch.

The fishery is in an expansion phase and has the potential to be one of significant value. Because the product is live, there are added costs involved in providing the appropriate on-shore facilities to maintain product quality.

The value of the ornamental species industry around the world is estimated at tens of billions of dollars annually.

In 2005 the Aquarium fishery was assessed by the Commonwealth Department of the Environment and Heritage (DEH) as being ecologically sustainable for export under Australian Government guidelines based on the *Environment Protection and Biodiversity Conservation Act* (EPBC Act).

AQUARIUM COMMITTEE ENVIRONMENTAL POLICY

VISION

To responsibly conduct the collection of aquatic resources in the Northern Territory Aquarium fishery while ensuring continued resource and ecological sustainability and economic viability.

NT Aquarium Committee members are committed to;

- taking all reasonable measures to minimise impacts on the environment
- promoting harmonious relations with other resource users and relevant land holders.
- ensuring a continuous supply of high quality ornamental species to the community.

OBJECTIVES

1. Continue to protect the habitats which underpin the ecological health of the Aquarium fishery.
2. Ensure that the collection of target species remains within their sustainable biological limits.
3. Actively participate in reviews, legislation development and resource management decision making forums that may impact on the Aquarium fishery.
4. Support research which enhances ecological sustainability, productivity, protection of the environment and the viability of operations.
5. Conduct environmental management in a transparent and cooperative manner with other key stakeholders.
6. Promote and participate in industry training and education opportunities in environmental awareness, conservation principles and good management practices.
7. Minimise interactions with and impacts on non retained species.
8. Minimise resource consumption, waste production and pollution associated with operations.
9. Comply with all relevant legislation.

EMS ACTION PLAN

The Aquarium Committee has identified and committed to a series of objectives, strategies and performance indicators to maintain the ecologically sustainable development of the fishery. Where information gathered indicates actual or potential problems, the relevant management arrangements will also be reviewed for their effectiveness.

OBJECTIVE 1

Continue to protect the habitats which underpin the ecological health of the Aquarium fishery.

Marine Pests

Strategy

Generally monitor and report, together with samples if possible, any unusual marine plants or animals observed in an area.

Report every sighting of foreign fishing vessels in Australian waters.

Performance Indicator

Timely reporting of unusual plants or animals that are detected.

Timely reporting of foreign fishing vessel sightings.

Background

With an increase in reported landings on NT soil by illegal foreign fishermen, the chances of marine pest incursions occurring have significantly increased. As many of these landings are in remote areas where Aquarium fishing can take place, commercial fishermen can often be among the first to observe abnormal situations.

Freshwater Pests

Strategy

Generally monitor and report, together with samples if possible, any unusual freshwater plants or animals observed in an area.

Performance Indicator

Timely reporting of unusual plants or animals that are detected.

Background

There are a number of freshwater weeds of concern in the Northern Territory, including Mimosa (*Mimosa pigra*), Salvinia (*Salvinia*) and Cabomba (*Cabomba caroliniana*). Within the geographic areas that Aquarium operators conduct their businesses they are the people likely to recognise a change in freshwater habitats in respect to the presence of aquatic weeds.

Water pollution incidents

Strategy

Monitor areas being worked for debris and other water pollution and report incidents to the Pollution Hotline, 1800 064 567.

Review aquatic pollution reports annually.

Performance Indicator

Timely reporting of pollution incidents.

Reviewed annually.

Coral Reef Beds

Strategy

Voluntarily monitor coral reef beds in collection areas and report changes.

Performance Indicator

Timely reporting of changes to the responsible Government agency.

Background

While coral is collected, it is collected in a manner which ensures minimal damage, other than the removal of coral, caused to the reef bed. Coral reefs are damaged by both natural and human activity. Coral reef damage is usually a result of pollution, increased sedimentation and nutrients. In addition cyclones and storms can cause large scale damage to significant coral reef communities.

OBJECTIVE 2

Ensure that the collection of target species remains within their sustainable biological limits.

Strategy

Review catch data annually.

Discuss market trends annually.

Performance Indicator

Catch data reviewed.

Market trends discussed.

Background

Being a multi species fishery, a broad range of fish, crustaceans, plants, live rock and coral are collected by operators. Annual catch data varies greatly each year, and it is important that the market trends are discussed to clearly identify whether a species was actually targeted during that year.

OBJECTIVE 3

Actively participate in fishery reviews, legislation development and resource management decision making forums.

Strategy

Ensure representatives of the Committee are present at relevant forums.

Clearly identify and pursue management arrangements that enhance the ecological and economic viability of the fishery.

Performance Indicator

Committee represented in all relevant forums.

Appropriate arrangements are in place.

Background

The Aquarium Committee is represented on a number of advisory and decision making forums that directly impact on the Aquarium fishery. The Northern Territory Seafood Council represents licensee interests in a number of other forums which may impact on Aquarium fishery operators.

OBJECTIVE 4

Conduct environmental management in a transparent and cooperative manner with other key stakeholders.

Strategy

Annually review the progress, compliance and continuing relevance of the EMS at an Aquarium Committee General Meeting.

Produce an annual report on the status of the EMS and circulate to key stakeholders.

Advise of the annual EMS status report on the Northern Territory Seafood Council website.

Performance Indicator

Review completed at a General Meeting annually.

Production and circulation of an annual report.

Appropriate information posted on website.

Background

As the EMS is an ongoing process, it is important that a formal annual review mechanism is implemented and that both industry and the wider community are aware, and appreciate the value of, the EMS process in ensuring the responsible use of the community owned resource.

OBJECTIVE 5

Support research which enhances ecological sustainability, productivity, protection of the environment and the viability of operations.

Strategy

Review the fishery's research priorities annually to ensure that projects are relevant and prioritised accordingly.

Ensure that research agreed to with DEH under export accreditation is carried out in a timely manner.

Provide assistance wherever possible to researchers on investigations in relation to the continued ecologically sustainable development of the Aquarium fishery.

Performance Indicator

Formal annual review of the relevance of research priorities and their potential management action outcomes.

Agreed research is undertaken.

Practical assistance provided by industry where necessary.

Background

Aquarium operators are keen and willing to make contributions to Aquarium fishery research and monitoring programs. It is widely recognised by operators that their contributions to research and monitoring assist in providing a greater understanding of Aquarium stocks. This increased understanding will assist in ensuring the Aquarium fishery remains ecologically sustainable.

OBJECTIVE 6

Promote and participate in industry training and education opportunities in environmental awareness, conservation principles and good management practices.

Strategy

Identify areas in which industry training and education can be undertaken to improve environmental awareness and best practice.

Performance Indicator

Training areas identified.

Strategy

Design and implement courses and strategies to ensure good environmental, conservation and management practices among people who work in the Aquarium fishery.

Identify key community education opportunities and utilise as many as possible on an ongoing basis.

Performance Indicator

Relevant courses and strategies designed, implemented and available on an ongoing basis.

Participation in key events that provide community education opportunities.

Background

Two key factors for the future of the Aquarium fishery are informed operators complying with management rules and a wider community which values the importance of the commercial fishery. The turnover of staff in fishing operations is such that an ongoing introductory package for operating in the fishery is necessary.

OBJECTIVE 7

Minimise interactions with and impacts on non retained species.

Release of non retained species

Strategy

Release any non commercial species as gently and quickly as possible.

Performance Indicator

Non commercial catch released as per Code of Practice.

Background

As passive and highly selective methods of collecting species are utilised, there is very little by-catch in the fishery. Products are caught live and the methods used to collect them are designed to minimise any harm as well as to maintain product in as high a quality state as possible. Any by-catch is released unharmed back into the water.

OBJECTIVE 8

Minimise resource consumption, waste production and pollution associated with operations.

Strategy

Retain all litter generated during fishing operations.

Performance Indicator

Litter disposed of at land facilities.

Strategy

Maintain engines in optimum condition to minimise greenhouse gas emissions.

Use cleaning products aboard a vessel that are biodegradable.

Use handling and husbandry methods to ensure maximum survival and health of collected product.

Performance Indicator

Engines maintained in optimum condition across fleet.

Biodegradable chemicals are used.

Handling and husbandry operations carried out as per Code of Practice.

Background

Rubbish generated during a fishing trip should be retained onboard the vessel and disposed of on land at the end of the trip. Disposal of plastics at sea is prohibited, as this can cause significant threats to marine life. High standards of handling and husbandry methods ensure maximum survival of collected species and economic viability of a fishing operation. Guidance on these matters are contained in the fishery's Code of Practice.

OBJECTIVE 9

Comply with all relevant legislation.

Strategy

Develop a concise introductory package regarding legislation which can be provided to all new people working in the fishery.

Operators who witness illegal collection activities to report them to Fishwatch on 1800 065 522.

Keep a register of charges for non-compliance in the fishery and report results annually to the Committee.

Performance Indicator

Introductory package developed.

Timely reports of illegal fishing activities.

On going register kept.

Background

Non compliance with key regulations and management mechanisms not only reflects badly on fishery participants as a whole, but can have adverse effects on stocks at a local level. It is incumbent on all in the fishery to be aware of this and act accordingly during collection operations.

AQUARIUM EMS ANNUAL REPORT TEMPLATE

OBJECTIVE 1
Continue to protect the habitats which underpin the ecological health of the Aquarium fishery.

Strategy	Performance Indicator	Performance
Generally monitor and report, together with samples if possible, any unusual marine plants or animals observed in an area.	Timely reporting of unusual plants or animals that are detected.	
Report every sighting of foreign fishing vessels in Australian waters.	Timely reporting of foreign fishing vessel sightings.	
Generally monitor and report, together with samples if possible, any unusual freshwater plants or animals observed in an area.	Timely reporting of unusual plants or animals that are detected.	
Monitor areas being worked for debris and other water pollution and report incidents to the Pollution Hotline, 1800 064 567.	Timely reporting of pollution incidents.	
Review aquatic pollution reports annually.	Reviewed annually.	
Voluntarily monitor coral reef beds in collection areas and report changes.	Timely reporting of changes to the responsible Government agency.	

OBJECTIVE 2

Ensure that the collection of target species remains within their sustainable biological limits.

Strategy	Performance Indicator	Performance
Review catch data annually.	Catch data reviewed.	
Discuss market trends annually.	Market trends discussed.	

OBJECTIVE 3

Actively participate in reviews, legislation development and resource management decision making forums that may impact on the Aquarium fishery.

Strategy	Performance Indicator	Performance
Ensure representatives of the Committee are present at relevant forums.	Committee represented in all relevant forums.	
Clearly identify and pursue management arrangements that enhance the ecological and economic viability of the fishery.	Appropriate arrangements are in place.	

OBJECTIVE 4

Conduct environmental management in a transparent and cooperative manner with other stakeholders.

Strategy	Performance Indicator	Performance
Annually review the progress, compliance and continuing relevance of the EMS at an Aquarium Committee General Meeting.	Review completed at a General Meeting annually.	

Produce an annual report on the status of the EMS and circulate to key stakeholders.	Production and circulation of an annual report.	
Advise of the annual EMS status report on the Northern Territory Seafood Council website.	Appropriate information posted on website.	

OBJECTIVE 5
Support and participate in research which enhances ecological sustainability, productivity, protection of the environment and the economic viability of operations.

Strategy	Performance Indicator	Performance
Review the fishery's research priorities annually to ensure that projects are relevant and prioritised accordingly.	Formal annual review of the relevance of research priorities and their potential management action outcomes.	
Ensure that research agreed to with DEH under export accreditation is carried out in a timely manner.	Agreed research is undertaken.	
Provide assistance wherever possible to researchers on investigations in relation to the ecologically sustainable development of the Aquarium fishery.	Practical assistance provided by industry where necessary.	

OBJECTIVE 6
Promote and participate in industry training and education opportunities in environmental awareness, conservation principles and good management practices.

Strategy	Performance Indicator	Performance
Identify areas in which industry training and education can be undertaken to improve environmental	Training areas identified.	

awareness and best practice.		
Design and implement courses and strategies to ensure good environmental, conservation and management practices among people who work in the Aquarium fishery.	Relevant courses and strategies designed, implemented and available on an ongoing basis.	
Identify key community education opportunities and utilise as many as possible on an ongoing basis.	Participation in key events that provide community education opportunities.	

OBJECTIVE 7
Minimise interactions with and impacts on non retained species.

Strategy	Performance Indicator	Performance
Release any non commercial species as gently and quickly as possible.	Non commercial catch released as per Code of Practice.	

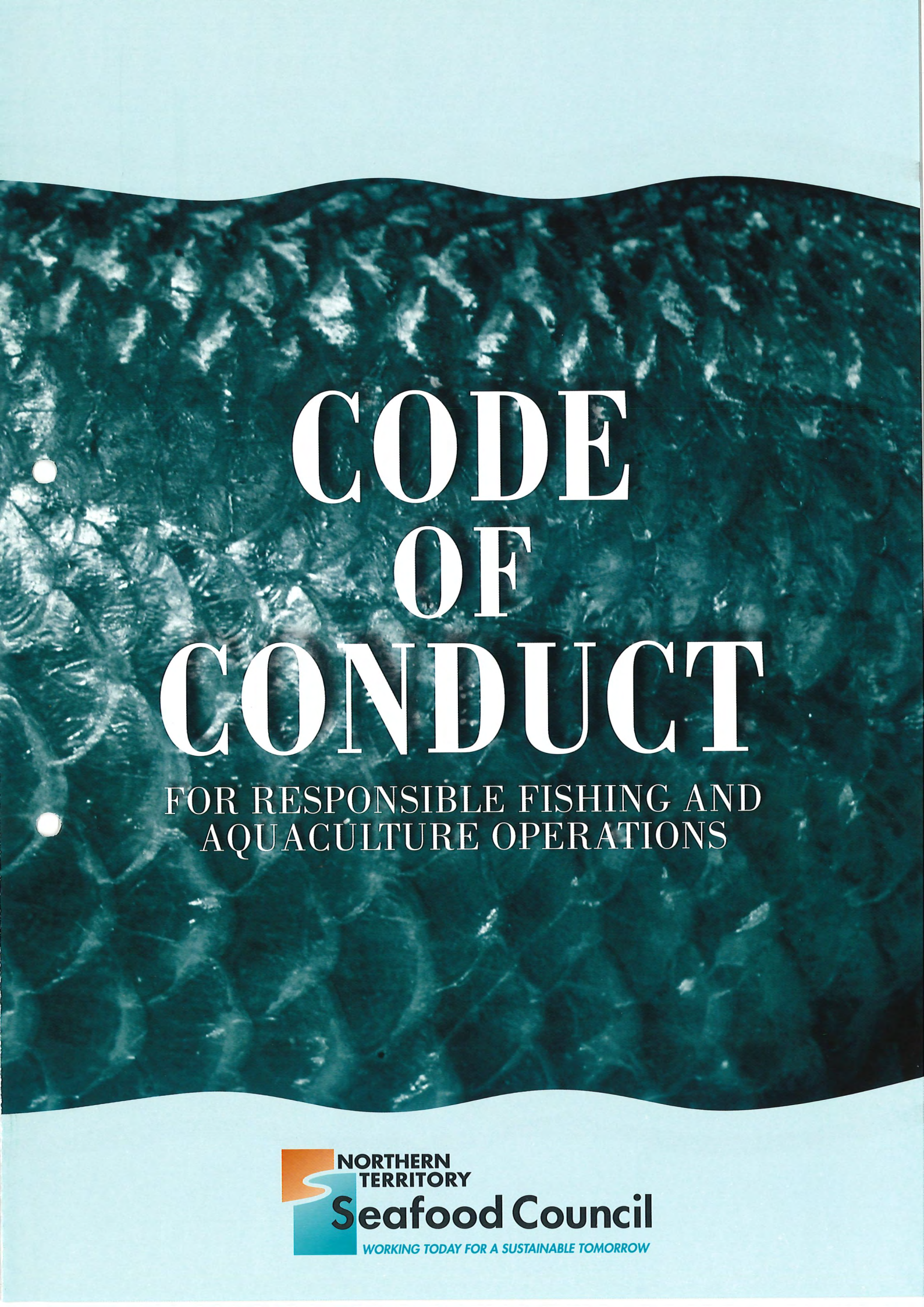
OBJECTIVE 8
Minimise resource consumption, waste production and pollution associated with operations.

Strategy	Performance Indicator	Performance
Retain all litter generated during collection operations.	Litter disposed of at land facilities.	
Maintain engines in optimum condition to minimise greenhouse gas emissions.	Engines maintained in optimum condition across fleet.	
Use cleaning products aboard a vessel that are biodegradable.	Biodegradable chemicals are used.	
Use handling and husbandry methods to ensure maximum survival and health of	Handling and husbandry operations carried out as per Code of Practice.	

collected product.

OBJECTIVE 9
Comply with all relevant legislation.

Strategy	Performance Indicator	Performance
Develop a concise introductory package regarding legislation which can be provided to all new people working in the fishery.	Introductory package developed.	
Operators who witness illegal collection activities to report them to Fishwatch on 1800 065 522.	Timely reports of illegal collection activities.	
Keep a register of charges for non-compliance in the fishery and report results annually to the Committee.	On going register kept.	



CODE OF CONDUCT

FOR RESPONSIBLE FISHING AND
AQUACULTURE OPERATIONS

CODE OF CONDUCT

The Northern Territory seafood industry understands and accepts its responsibility and accountability to conduct operations in a manner that continues to ensure resource sustainability, ecological integrity and economic viability.

This Code of Conduct specifies the principles and behaviour that industry participants commit to adhere to.

Environment

- Ensure that operations are conducted in accordance with Northern Territory and Commonwealth laws and regulations, as well as with international laws, regulations, conventions, declarations and protocols adopted by Australia
- Take all reasonable measures to minimise impacts of their operational activities on the environment

Interactions with other user groups

- Acknowledgment of and respect for the rights of all other resource users, land holders and land owners when carrying out operations
- Positive promotion of harmonious relations with other resource users, land holders and land owners

Y SEAFOOD INDUSTRY

Ecological Sustainability

- Take appropriate measures to ensure fisheries continue to be harvested and utilised to maintain the sustainable use of Northern Territory aquatic resources
- Promotion and utilisation of new technologies and techniques which enhance sustainable fishing practices
- Continue to minimise impacts on non target species during fishing operations

Research

- Support for research, including active participation where possible, which enhances ecological sustainability, productivity, protection of the environment and the viability of industry operations

Conservation

- Acknowledgment that conservation is a shared responsibility and requires a spirit of cooperation among all industry participants, appropriate regulatory authorities and other key stakeholder groups

Resource Management

- Actively participate in reviews, development of legislation and more detailed resource management decision making forums

Education

- Promotion of and, when appropriate, participation in both specialised industry training and education opportunities in environmental awareness, conservation principles, occupational health and safety matters and good management practices

USTAINABLE TOMORROW

supported by



Northern Territory Government



Australian Government
Fisheries Research and
Development Corporation

For more information:

Northern Territory Seafood Council

Tel 08 8981 5194

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GPO Box 618 Darwin NT 0801

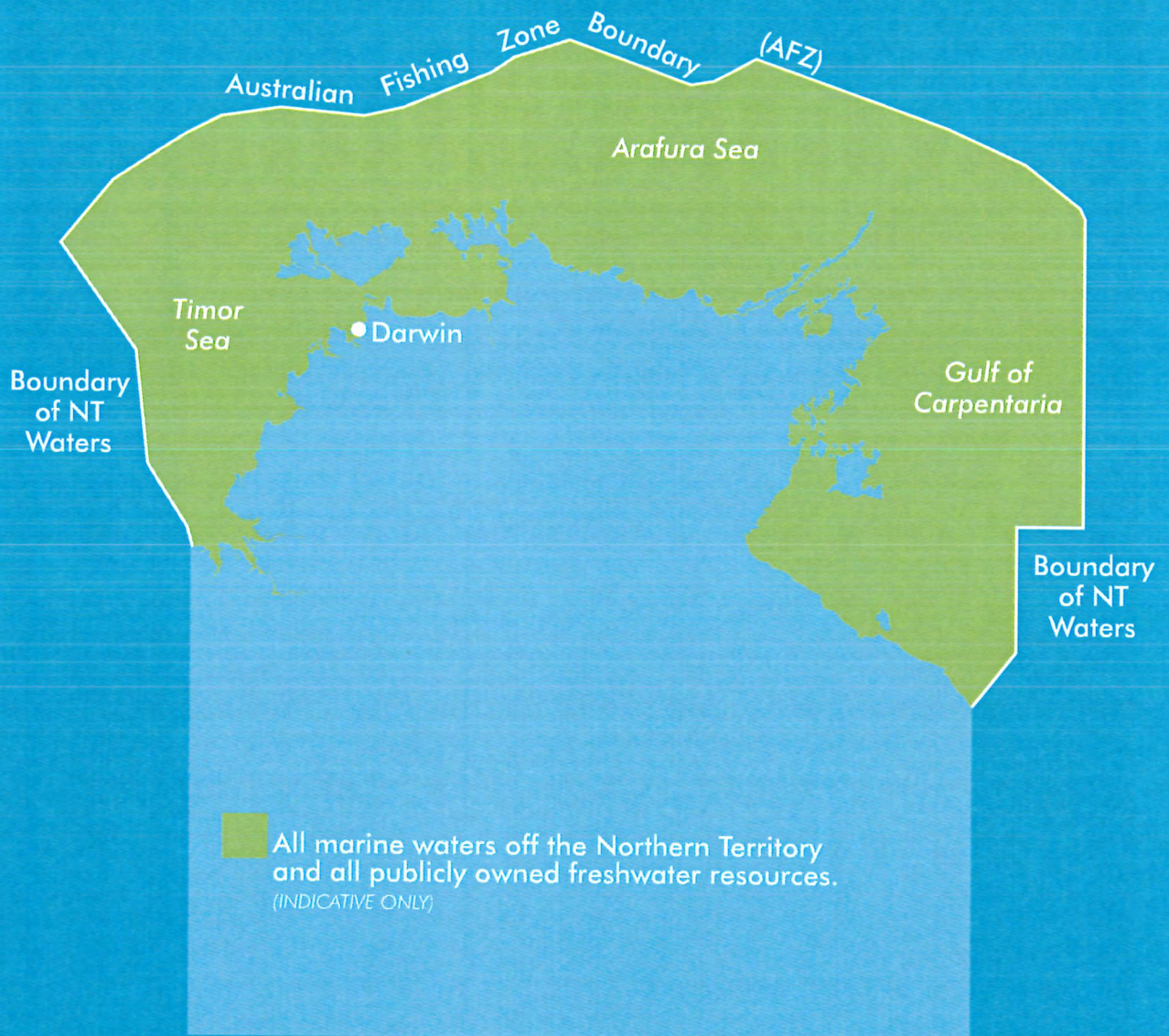
NORTHERN TERRITORY

Aquarium *Fishery*



CODE OF PRACTICE

AQUARIUM FISHERY





OBJECTIVE

To provide operators in the Northern Territory Aquarium fishery with the knowledge and understanding to further enhance the ecological sustainability of the fishery and safety of operations, while maximising the quality and value of product.

INTRODUCTION

A best practice guide for the Aquarium fishery, this is specifically designed to contribute to the ongoing ecological and economic health of the Aquarium fishery and businesses involved in it.

This voluntary Code of Practice has been developed by the Aquarium Committee of the Northern Territory Seafood Council, with funding assistance from the Fisheries Research and Development Corporation and the Northern Territory Government.

THE FISHERY

The Northern Territory Aquarium fishery involves the collection of a variety of both freshwater and marine species. Collection is permitted in all inland waters and waters seaward of the coastline to the outer boundary of the Australian Fishing Zone (AFZ).

Under current licensing arrangements aquatic animals are collected using a variety of passive methods. A wide range of live fish and benthic organisms are collected and transported to local, interstate and overseas aquarium markets. Due to the highly selective collecting in the fishery, there are extremely low levels of by-catch.

This fishery has very significant potential for growth and its contribution to the Northern Territory economy is expected to increase markedly over the next three years.





PREPARATION

Occupational health and safety

Clear, concise occupational health and safety guidelines should be in place for all operations involving vessels and land facilities. Crew members and staff should be aware of and abide by these.

Vessel and gear maintenance

All vessels and gear used in the collection operation should be well maintained, thoroughly checked and stowed or secured in a safe manner, as appropriate. Facilities for live products should be designed to maximise the survival of that product.

Cleaning

Deck, mats, catch buckets, storage facilities, utensils and other potential aquatic species contact surfaces should be kept clean to ensure that disease transference is not aided at any step in the collection and processing procedures. The vessel should be thoroughly cleaned prior to each fishing trip to remove any contaminants that may be present.

COLLECTION

Diving safety

In addition to standard safety requirements associated with diving, there are additional concerns in regards to dangerous animals in Northern Territory waters.

There are aquatic animal hazards such as sharks, crocodiles, box jellyfish, stingers, cone shellfish, leopard fish, stonefish, stingrays, sea snakes and stinging corals or fire corals.

Injuries or death may occur from predatory attacks (sharks, crocodiles, box-jellyfish) or defensive attacks (blue-ringed octopus, stonefish and sea snakes). Preventative measures can be taken and all crew should be aware of these.

Length of dive session

Dive sessions should be around 3 to 4 hours and a maximum of two sessions per day. The length of a dive session may vary due to operational constraints such as poor visibility, strong winds, currents and presence of predators or threats (e.g. crocodiles, sharks or jellyfish).

Handle organisms gently

As fish have a protective coating which acts as a natural defense and helps protect them against pathogens, handling with wet hands or gloves minimises the removal of scales and the protective coating.

Check pots regularly

When using pots, ensure that tidal movements do not allow exposure which may result in the death of any species in the pots. They should also be checked and emptied on a regular basis and at least once every 24 hours.

Fish decompression

Fish collected at depths greater than nine metres need to be decompressed by being brought slowly to the surface in gradual depth changes.

Some fish decompress well, while others will take hours. A rope or line with depth



intervals can be used to ensure the container holding the fish is slowly raised in the water at measured intervals.



Only skilled operators should perform bladder spiking, as if done incorrectly this procedure can introduce bacteria into the body cavity of the fish, which can result in internal infections.

By-Catch

While normally minimal, any non-target animals should be carefully released back into the water as soon as possible to ensure that their chances of survival are maximised.

Minimise the time out of water

Whenever possible, maintain constant water contact when transferring organisms from collection gear to holding containers. The less time out of the water, the greater the chances of survival and quality of the product.

Sorting catch

Carnivorous, poisonous or large fish can injure, kill or cause increased levels of stress to other fish within holding tanks. Organisms

should therefore be sorted and separated appropriately to ensure their safety.

Large carnivorous fish should be separated from smaller fish. Large fish of the same size or similar species should not be mixed together in small transport containers.

Live rock

Collection should be focused on rapid generation areas such as an outer reef or flat crest zone.



Select sections of live rock which, when removed, will not compromise the habitat structure of the reef.

Coral

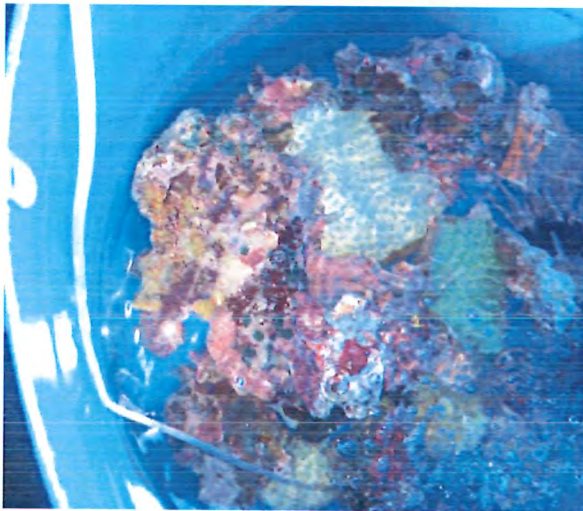
Target corals growing in healthy, competitive growth areas, rather than isolated, stressed or damaged colonies. Allow reef sections to recover before re-collecting. The time for this to occur will depend on the species.



HANDLING

Transport from collection site

Organisms should be transported from their collection site in water with adequate aeration. Keeping containers under shade prevents the rapid rise of water temperature and it is important to ensure that they are not overcrowded.



Minimise stress

By ensuring all water changes are both appropriate and gradual, the stress of organisms following collection is minimised. Changing the water too frequently will stress the organism unduly.

Ensure shade covering containers is not moving, as this may also cause additional stress to the organism, and stressed organisms are less resistant to diseases.

Aeration or pure oxygen supplied to containers can help prevent oxygen stress and allow more fish to be safely contained.

Species compatibility

Aggressive or carnivorous fish should be separated from other fish species to ensure that survival is maximised. An understanding of the behaviour of key species is important.

Check for disease and damage

Before transferring organisms to onshore holding facilities, check each one for any signs of disease or damage. Isolate and/or dispose of affected organisms in a humane manner.

Change holding water regularly

Some organisms excrete large amounts of mucus which will foul their holding water. Change or clean water on a regular basis to ensure water quality is maintained.

Organisms kept in bags for prolonged periods and in holding tanks without adequate filtration can be exposed to ammoniation, low pH and oxygen depletion, which will stress them.

Containers

It is important that containers are thoroughly cleaned before use and that fish held in them have place for free movement.





HUSBANDRY

Climatic conditions

Organisms kept in facilities that reproduce their natural climatic conditions will maintain their health much better. It is important to regularly monitor organisms for any physical or behavioural changes, preferably daily.

Feeding

To maintain the optimal health and well being of organisms, appropriate and sufficient amounts of food must be provided. Over feeding should be avoided as uneaten food left in the tanks will deteriorate water quality.

Maintain food quality

To prevent food spoilage, food supplies should be stored in a manner that maintains quality, such as an impervious closed container.

Chemicals

Solutions such as buffers, ion exchange, vaccines, sedatives and antibiotics should only be used when necessary and in accordance with good husbandry and manufacturer directions.

Water quality and temperature

Rapid fluctuations in light, temperature and chemical composition of water will stress organisms.

Water quality and temperature in holding facilities should be of a standard that allows for the optimal health of the organisms.

Monitor water quality

Equipment to test water quality parameters such as dissolved oxygen, salinity, ammonia, nitrates, temperature and pH should be calibrated on a regular basis.

Do not crowd organisms

It is important to ensure holding facilities are adequately set up to house the amount of product collected.

Over crowding tanks must be avoided as it will stress organisms and lead to a decline in water quality.



TRANSPORTING

Fasting

To reduce the chances of an organism fouling transport water, which can be detrimental to both water quality and the organism's welfare, allow a period of fasting immediately prior to packing. The length of fasting period depends on the type of organism.

Packing

To reduce stress and maintain water quality, pack one organism per bag where possible.



The value of oxygen

Replacing excess air in a bag with pure oxygen helps maintain dissolved oxygen levels. For fish it is recommended that the volume of oxygen in a bag or container be approximately 75% to ensure adequate surface to water ratio.

Prepare container for maximum time of transport

Packaging must take into account freight duration and other environmental conditions such as temperature. Containers should be prepared for maximum duration of transport time. Prepare containers to allow for potential delays during transport to market.

Label holding containers

Some fish may undergo colour changes due to stress, which in the absence of a label, may lead to inaccurate identification. A label will ensure correct identification of

the contained species. Labels should also contain relevant information for care of product, such as storage conditions.

Know the rules

Requirements for transporting live aquarium species by air are specified in the Seafood Air Transport Regulations. These are mandatory and can be found on the internet at the following site:

www.qantas.com.au/freight/pdf/SATRegulations.pdf

Label air freight packages

It is important that the packages are marked "Live Fish" on at least two opposing sides and that labels on all four sides of the package clearly indicate the correct orientation of the package.

Use "This Way Up" labels or contrasting tape to assist in loading boxes the correct way up.

Pressure changes

If oxygen or oxygen tablets are used in a bag, pack the container to allow for pressure differential at altitude as excess gas may cause the bag or container to burst.





WASTE & POLLUTION

Retrieval of Garbage and Lost Fishing Gear

Lost fishing gear and garbage can pose a significant threat to aquatic life. All efforts should be made to retrieve lost fishing gear. If it is not possible to collect, report the location of the gear to the relevant authorities.

Efforts should also be made to retrieve any non-degradable garbage or wastes found during fishing operations for proper disposal at onshore facilities.

Report pollution

Any oil or chemical spills or other incidences of environmental damage in the area of the fishery should be reported as follows:

- Within 3nm, to the **Pollution Hotline 1800 064 567**
- Beyond 3nm, to the **Rescue Co-ordination Centre Australia** phone **1800 641 792** or fax **1800 622 153**

Plastics

It's illegal to discharge plastic into the water. All plastics must be retained on the vessel and disposed of at port facilities. Plastic wastes which form a continuous loop should be cut onboard to minimise impacts in the event that it is accidentally lost from a vessel.

Garbage

Non-plastic garbage which cannot be retained onboard for proper disposal

ashore may, by law, only be disposed of at sea if the vessel is more than 12 nm from the nearest land.

Noxious Liquid Substances

No discharge of residues containing noxious substances is permitted within 12 nm of the nearest land. The discharge of liquids in quantities and concentrations harmful to the aquatic environment are prohibited by law.

Oil and Oily Mixtures

By law, oils or oily mixtures are not to be discharged into the sea, nor should they be disposed into fresh waters. Waste oil and oily residues must be stored on board for disposal at port waste disposal facilities.





THREATENED SPECIES

There are a number of species listed as protected under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and under the Northern Territory's *Territory Parks and Wildlife Conservation Act*.

On occasions, unintended interactions with protected species may occur. It is a legal requirement to report any such interactions to the Australian Government Department of the Environment and Heritage.

Some examples of interactions that require reporting are:

- Any action resulting in the killing, injuring, taking or trading of a listed species
- The accidental capture of a listed species in a fishing operation
- A humane action that is necessary to relieve or prevent the suffering of a listed species
- An action taken to prevent risk to human health
- An action that is necessary to deal with an emergency where there is a serious threat to human life or property

Reporting requirements

Under the EPBC Act, the Department of the Environment and Heritage (DEH) must be notified within 7 days of a person becoming aware of an interaction and the report should include the following details:

- Time and date
- Species involved
- Number of animals
- Specific location
- Gear or bait type used

To report an interaction or to seek further information:

Phone: 1800 641 806

Email: protected.species@deh.gov.au

Mail: Director, Wildlife Impact and Protection Section
Dept. Environment & Heritage
GPO Box 787 Canberra
ACT 2601



DEFINITIONS

By-Product – Catch which is kept to be sold but is not the principal target.

By-Catch – Catch which is returned to the sea either because it has little or no commercial value or because regulations preclude it being retained.

Ecologically Sustainable Development – Using, conserving and enhancing community resources so that ecological processes, on which life depends, are maintained and the total quality of life, now and in the future, can be increased

CONTACTS

Aquarium Committee
Industry Representative
Tel: 08 8981 5194 | Fax: 08 8981 5063

Australian Maritime Safety Authority (AMSA)
Queries regarding Commonwealth environmental laws.
Tel: 02 6279 5015 | Fax: 02 6279 5966

Bureau of Meteorology
Forecasts and warnings Tel: 08 8920 3826
General Enquires Tel: 08 8920 3800

CSIRO
Enquiries and reporting of tagged fish.
Tel: 1300 363 400

Department of the Environment and Heritage (DEH)
Reporting all listed species interactions.
Tel: 1800 641 806

Fishwatch
Reporting illegal fishing activities.
Tel: 1800 065 522

Museum and Art Gallery of the Northern Territory
Identification of unusual or exotic fish.
Tel: 08 8999 8201

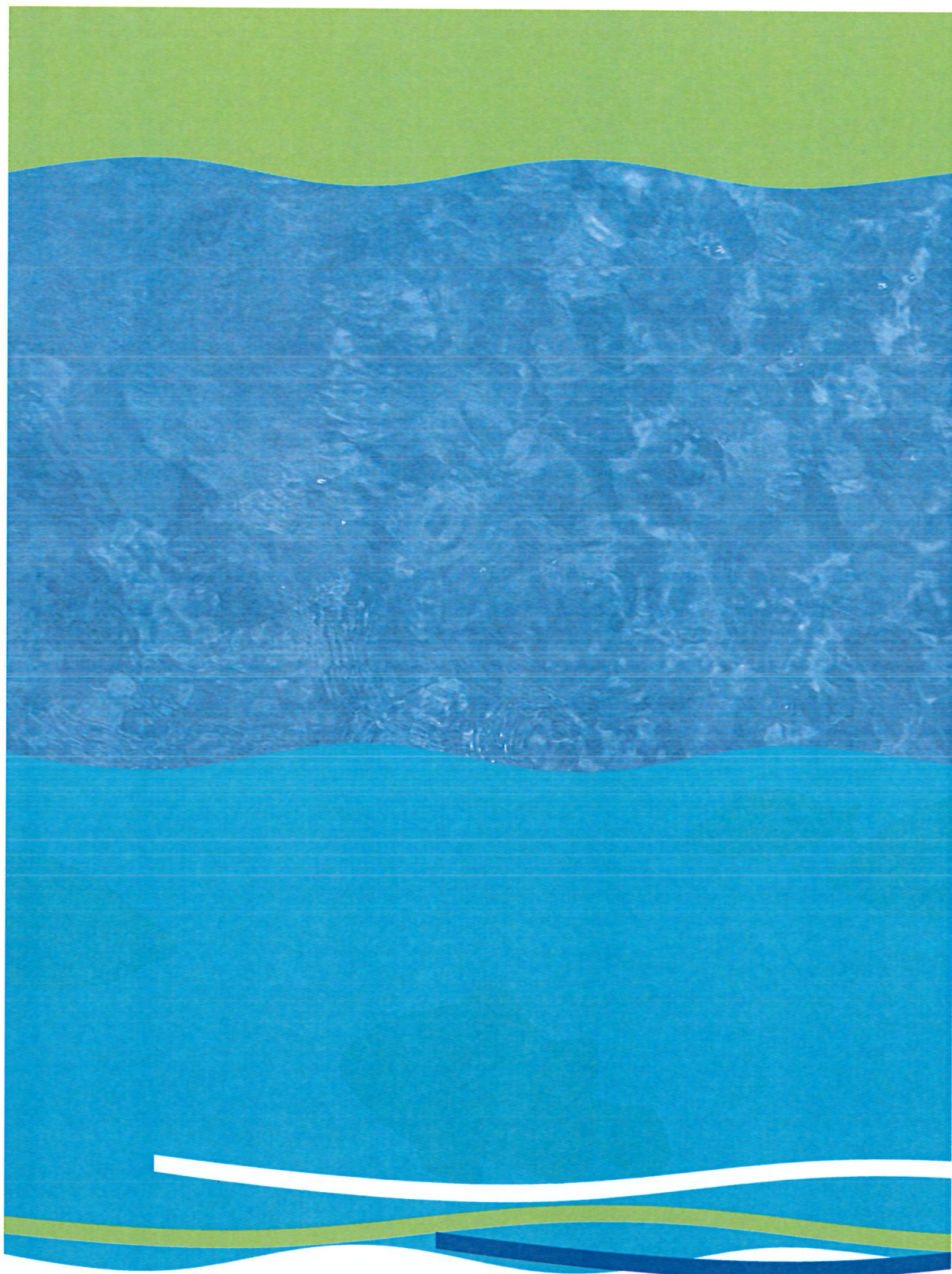
NT Fisheries
Fisheries Management Agency
Tel: 08 8999 2144 | Fax: 08 8999 2065

NT Parks and Wildlife Commission
Interactions with tagged animals and NT protected species.
Tel: 08 8999 5511

NT Pollution Hotline
Reporting pollution within the NT.
Tel: 1800 064 567

Northern Territory Seafood Council
Peak industry body, NT.
Tel: 08 8981 5194 | Fax: 08 8981 5063

Rescue Co-ordination Centre Australia (RCC Australia)
Reporting close collisions and pollution at sea beyond 3nm.
Tel: 1800 641 792 | Fax 1800 622 153



For more information:
Northern Territory Seafood Council
Aquarium Committee
Tel 08 8981 5194
www.ntsc.com.au | ntsc@ntsc.com.au
GPO Box 618 Darwin NT 0801

RISK ANALYSIS

The following rankings have been used in the risk analysis.

LIKELIHOOD RANKING

Rare	May occur in exceptional circumstances
Possible	Evidence to suggest this may occur
Likely	It is expected to occur

CONSEQUENCE RANKING

Minor	Possibly detectable but minimal impact on structure/function
Moderate	A level of impact where recovery can take months or even years
Major	Very serious impacts with a relatively long time frame likely to be needed to restore to an acceptable level - recovery measured in years to decades

RISK RANKING

Low	Insignificant risk to the environment due to a combination of minor consequence and unlikely to occur
Medium	Increased likelihood of occurring with undesirable consequences
High	Likely to occur with significant consequences

LEGISLATION

Non compliance with fisheries legislation

RISK CATEGORY: LOW

Occurrence Likelihood: Possible

Occurrence Consequence: Minor

Justification

Aquarium Committee members are familiar with and understand the legislative requirements imposed on them. The penalties for non compliance are high. The co-management structure which NT Fisheries and the Committee have established should ensure that many discussions and communications are undertaken prior to potential changes to regulations. Licensees are also encouraged to report any non compliance to the relevant authorities.

Non compliance with conservation legislation

RISK CATEGORY: LOW

Occurrence Likelihood: Rare

Occurrence Consequence: Minor

Justification

Committee members are familiar with and aware of other legislative requirements through various conservation regulations which affect collection activities. The Northern Territory Seafood Council has active participation in issues surrounding sacred sites, marine protected areas and land conservation and this information is passed on to all licensees.

RETAINED SPECIES

Loss of catch due to rapid deterioration of collection conditions

RISK CATEGORY: LOW

Occurrence Likelihood: Rare

Occurrence Consequence: Minor

Justification

It is rare that catch is lost due to rapid deterioration of collection conditions. Measures such as checking weather conditions, maintaining collection equipment and formal training undertaken by skipper's and crew ensure a high degree of professionalism and understanding of their working environment. All preparations are undertaken to ensure the vessel and gear is maintained in top condition to reduce any potential loss in both collection time and catch.

Loss of catch due to exceptionally large catches

RISK CATEGORY: LOW

Occurrence Likelihood: Rare

Occurrence Consequence: Minor

Justification

Due to the highly selective nature of collecting within the Aquarium fishery, exceptionally large catches do not occur. In respect to live rock, coral and crustaceans only the product which is required is collected. Collection methods utilising nets and pots only have the capacity to catch small amounts of fish. All catch is sorted immediately and product that is not required is returned to the water with minimal harm as quickly as possible.

Loss of catch due to poor handling

RISK CATEGORY: LOW

Occurrence Likelihood: Rare

Occurrence Consequence: Minor

Justification

All aquatic life collected are handled and transported in an appropriate manner to ensure their survival. A number of preventative measures, as detailed in the Code of Practice, are used to ensure that catch is not lost due to disease or poor handling.

Unsustainable depletion of target species stock as a result of commercial collection

RISK CATEGORY: LOW

Occurrence Likelihood: Rare

Occurrence Consequence: Moderate

Justification

Accurate reporting via log returns provides the data required to determine the annual take of target species. The fishery is accredited as ecologically sustainable for export under the *Environment Protection Biodiversity and Conservation Act 1999*. This accreditation acknowledges that current management techniques used in the fishery are adequately protecting target stocks. Annual catch data is analysed on an ongoing basis and trigger points are set to review current management practices if necessary.

Unsustainable depletion of by-product species resulting from commercial fishing

RISK CATEGORY: LOW

Occurrence Likelihood: Rare

Occurrence Consequence: Minor

Justification

By-product essentially does not exist within the fishery as operations are conducted specifically to harvest target species only.

NON-RETAINED SPECIES

Death of fish by-catch before release

RISK CATEGORY: LOW

Occurrence Likelihood: Rare

Occurrence Consequence: Minor

Justification

Methods utilised within the Aquarium fishery are all designed to maximise the survival and minimise damage to all species caught as product is sold live. It is therefore highly unlikely that any by-catch will perish before it is release from Aquarium fishing gear.

Death of fish by-catch after release

RISK CATEGORY: LOW

Occurrence Likelihood: Possible

Occurrence Consequence: Minor

Justification

Methods utilised within the Aquarium fishery are all designed to maximise the survival and minimise damage to all species caught as product is sold live. As all by-catch is released immediately with minimal damage, death after release is highly unlikely.

INTERACTIONS WITH WILDLIFE

Interactions with protected species

RISK CATEGORY: LOW

Occurrence Likelihood: Rare

Occurrence Consequence: Minor

Justification

Due to the selectivity of methods used to collect organisms, interactions with protected species are highly unlikely. No catches of protected species have been recorded in a number of years. Interactions with marine turtles or dugongs through boat strikes are unlikely due to the small number of vessels within the fleet.

IMPACTS ON THE BIOLOGICAL COMMUNITY

Lost or discarded fishing equipment

RISK CATEGORY: LOW

Occurrence Likelihood:	Rare
Occurrence Consequence:	Minor

Justification

It is rare for Aquarium fishers to lose fishing equipment. No gear is intentionally discarded at sea. Any fishing gear that is too damaged and any rubbish or wastes generated are disposed of on land as per the Code of Practice. All efforts are made to recover any lost fishing gear, as well as retrieving any other derelict gear found, as it presents possible hazards to marine life and fishing operations.

Spread of pests within Territorial waters

RISK CATEGORY: LOW

Occurrence Likelihood:	Rare
Occurrence Consequence:	Moderate

Justification

There are some species of freshwater plants which pose a threat to freshwater habitats within the Northern Territory. As Aquarium operators are familiar with their aquatic habitats, they are well equipped to notice and report the presence of plant pests into previously unaffected areas.

WATER QUALITY

Chemical spill

RISK CATEGORY: LOW

Occurrence Likelihood:	Rare
Occurrence Consequence:	Minor

Justification

The Code of Practice covers safe and appropriate storage of chemicals and fuel on board the vessel. However, other than bio-degradable cleaning detergents, few if any other chemicals are carried. During collection operations, clean sea or fresh water is used to rinse equipment and a more thorough clean is carried out upon the completion of the collection trip.

Pollution from outboard motors or fuel spill

RISK CATEGORY: LOW

Occurrence Likelihood: Possible

Occurrence Consequence: Minor

Justification

The small fleet of well maintained vessels ensures that pollution from fuel use is minimal. In the rare event of a fuel spill occurring, the quantity of fuel would be small.

AIR QUALITY

Greenhouse gas emissions

RISK CATEGORY: LOW

Occurrence Likelihood: Likely

Occurrence Consequence: Minor

Justification

Due to the small size of the commercial Aquarium fishing fleet and the low fuel consumption, the amount of greenhouse gas emissions is low. In addition, all motors are maintained at a high standard as some collection operations are conducted in remote areas.

SUBSTRATE QUALITY

Damage to seagrass

RISK CATEGORY: LOW

Occurrence Likelihood: Rare

Occurrence Consequence: Minor

Justification

Aquarium fishers know the value of seagrass for fish stocks and have the skills and local knowledge necessary to avoid physical impact on seagrass beds. Collection methods utilised do not cause damage to seagrass.

Damage to coral reefs

RISK CATEGORY: LOW

Occurrence Likelihood: Rare

Occurrence Consequence: Minor

Justification

The value of coral reefs for aquarium organisms is well understood and when operations are conducted in coral reef areas, the necessary precautions to eliminate damage to the reef are taken. Deliberate harvesting of specific corals are undertaken in a manner to minimise damage as described in the Code of Practice.

EXTERNAL RISKS TO THE FISHERY

Illegal collection

RISK CATEGORY: LOW

Occurrence Likelihood: Possible

Occurrence Consequence: Moderate

Justification

Illegal harvesting and marketing of aquarium species is of concern to the Aquarium Committee as it is known to occur. While the quantities illegally taken are unknown, this potentially poses a threat to the sustainability of some targeted aquatic species.

Illegal release of aquarium species

RISK CATEGORY: MEDIUM

Occurrence Likelihood: Likely

Occurrence Consequence: Moderate

Justification

No aquarium species should be released into any water way as it may potentially transfer disease or pests into an area. The illegal release of aquarium species is known to occur, and needs to be prevented to protect Northern Territory waters.

REGISTER OF RELEVANT LEGISLATIVE REQUIREMENTS

Legislation	Summary of Purpose	Relevance	Agency
<i>Aboriginal Land Act</i> (Northern Territory)	An Act to provide access to Aboriginal land, certain roads bordered by Aboriginal land and the provision to apply for closure of seas adjacent to Aboriginal land.	Entry onto Aboriginal land and seas adjoining.	Department of Planning and Infrastructure
<i>Animal Welfare Act</i> (Northern Territory)	An Act to provide for the welfare of animals, prevent cruelty to animals and for related purposes.	Animal welfare obligations and offences.	Local Government, Housing and Sport
<i>Darwin Port Corporation Act</i> (Northern Territory)	An Act to provide for the establishment of the Darwin Port Corporation for the control and management of the Port of Darwin, and for related purposes.	Prevention of pollution from oil within the port and management of fishing industry related facilities in the Port.	Darwin Port Corporation
<i>Environment Protection Biodiversity Conservation Act 1999</i> (Commonwealth)	An Act relating to the protection of the environment and the conservation of biodiversity, and for related purposes.	Protection of threatened species, marine debris, export and import controls.	Department of the Environment and Heritage
<i>Fisheries Act</i> (Northern Territory)	An Act to provide for the regulation, conservation and management of fisheries and fishery resources so as to maintain their sustainable utilisation, to regulate the sale and processing of fish and aquatic life, and for related purposes.	Administration of licences, registration of fishing vessels, recording requirements.	Department of Primary Industry, Fisheries and Mines
<i>Fisheries Regulations</i> (Northern Territory)	Regulations under the <i>Fisheries Act</i> .	Protected species, possession of gear, fish safety and quality, processing and sale of fish, gear requirements and aquatic pests.	Department of Primary Industry, Fisheries and Mines

Legislation	Summary of Purpose	Relevance	Agency
<i>Heritage Conservation Act</i> (Northern Territory)	An Act relating to the natural and cultural heritage of the Northern Territory.	Declaration and protection of heritage places and objects.	Department of Natural Resources, Environment and the Arts
<i>Historic Shipwreck Act 1976</i> (Commonwealth)	An Act to protect historically significant shipwrecks.	Protection of historically significant shipwrecks.	Department of the Environment and Heritage
<i>Marine Act</i> (Northern Territory)	An Act to regulate shipping within the Territory and to provide for the application to the Territory of the Uniform Shipping Laws Code and for related matters.	Safety of ship, closure of waters, collisions, casualties.	Department of Planning and Infrastructure
<i>Marine Pollution Act</i> (Northern Territory)	An Act to protect the marine and coastal environment by minimising intentional and negligent discharges of ship-sourced pollutants into coastal waters, and for related purposes.	Control and prohibition of discharges of oil, noxious substances, garbage and pollutants in coastal waters to 3 nm.	Department of Planning and Infrastructure
<i>Marine Pollution Regulations</i> (Northern Territory)	Regulations under the <i>Marine Pollution Act</i> .	Disposal of food wastes, garbage and reporting incidents.	Department of Planning and Infrastructure
<i>Northern Territory Aboriginal Sacred Sites Act</i> (Northern Territory)	An Act to effect a practical balance between the recognised need to preserve and enhance Aboriginal cultural tradition in relation to certain land in the Territory and the aspirations of the Aboriginal and all other peoples of the Territory.	Access, entry and permission to enter sacred sites. Offences in relation to sacred sites.	Minister assisting the Chief Minister on Indigenous Affairs
<i>Protection from the Sea (Prevention of pollution from ships) 1983</i> (Commonwealth)	An Act relating to the protection of the sea from pollution by oil and other harmful substances discharged from ships.	Discharge of oil, noxious substances, sewage, garbage and pollutants in Commonwealth waters.	Australian Government

Legislation	Summary of Purpose	Relevance	Agency
<i>Territory Parks and Wildlife Conservation Act</i> (Northern Territory)	Establishment of Parks and Reserves and the study, protection, conservation and sustainable utilisation of wildlife.	Protection of wildlife and conservation of natural resources.	Department of Natural Resources, Environment and the Arts
<i>Territory Wildlife Regulations</i> (Northern Territory)	Regulations under the <i>Territory Parks and Wildlife Conservation Act</i> .	Specific measures for protection and conservation.	Department of Natural Resources, Environment and the Arts
<i>Waste Management and Pollution Control Act</i> (Northern Territory)	An Act to provide for the protection of the environment through encouragement of effective waste management and pollution prevention and control practices and for related purposes.	General environmental duty, notification of pollution incidents.	Department of Natural Resources, Environment and the Arts
<i>Water Act</i> (Northern Territory)	An Act to provide for the investigation, allocation, use, control, protection, management and administration of water resources, and for related purposes.	Prohibits the pollution of water.	Department of Natural Resources, Environment and the Arts
<i>Work Health Act</i> (Northern Territory)	An Act to promote occupational health and safety in the Territory to prevent workplace injuries and diseases, to protect the health and safety of the public in relation to work activities.	Take reasonable care of health and safety at work.	Department of Employment, Education and Training