

# AQUARIUM FISHERY STATUS REPORT 2009

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## INTRODUCTION

The Northern Territory (NT) Aquarium Fishery is a small-scale, multi-species fishery operating in fresh water, coastal and oceanic waters, extending to the outer boundary of the Australian Fishing Zone (AFZ).

The fishery is based on the harvest of a wide range of fish, plant and coral species from freshwater and marine environments for the purposes of display. Most of the product is sold to interstate distributors.

The fishery harvest up to now has been small by national and international standards, both in numbers and value. However, the demand for aquarium species continues to increase. Harvesting techniques, transport and packaging have improved significantly over the past 10 to 15 years, enabling the industry to provide a quality product to a growing interstate market and potential export markets.

The NT Aquarium Committee (NTAC) is the peak body representing licensees of the NT Aquarium Fishery. NTAC works with the Department of Resources (DoR) to develop and consider future development opportunities and management arrangements for the fishery within the principles of ecologically sustainable development (ESD).

In 2008, a report was submitted to the Australian Government Department of the Environment, Water, Heritage and the Arts (DEWHA) to reassess the management arrangements of the fishery against the Guidelines for the Ecologically Sustainable Management of Fisheries. The fishery was subsequently accredited with a Wildlife Trade Operation (WTO) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The WTO declaration endorses the export of product from the sustainable fishery for a period of three years. The assessment demonstrated that the fishery was managed in a manner that does not lead to over-fishing, and that fishing

operations have minimal impact on the structure, productivity, function and biological diversity of the ecosystem. The Aquarium Fishery is due to be reassessed in 2011.

## PROFILE OF THE FISHERY

### Commercial Sector

There are three licence categories in the fishery:

- Aquarium Fishing/Display licence (A12), which permits the collection, sale and display of aquarium species.
- Aquarium Trader licence (D3), which permits the sale and trade of aquarium species but does not permit the harvesting of aquarium species.
- Public Aquarium licence (D5), which allows the display of live fish and aquatic life for profit.

The number of Aquarium Fishing/Display licences permitted in the fishery is currently limited to 12. In 2009 only eight operators recorded any fishing activity. There is no limit on the number of Aquarium Trader licences which can be issued; in 2009, nine licences were issued. Two Public Aquarium licences were issued in 2009.

Following a review of the fishery in 2004-05, all Aquarium Fishing/Display Fishery licence holders were permitted to collect strictly limited quantities of coral and associated benthic species. Coral and associated benthic species cannot be collected from Darwin or Gove Harbours.

The management objectives, performance indicators, performance measures, triggers and management actions used in the fishery are shown in Table 3 along with harvest status for 2009.

### **Area**

Licensees in the fishery may harvest from all inland, estuarine and marine waters to the outer boundary of the AFZ. However, harvesting is not permitted in a number of designated protected areas, such as Doctor's Gully and East Point Aquatic Life Reserves in the Darwin Harbour area, Aboriginal sacred sites, aquaculture farm leases and sanctuary zones.

Most freshwater and estuarine species are collected from streams and creeks close to Darwin, and the Adelaide and Daly River systems.

Commercial harvesting of marine species is concentrated in coastal waters near Nhulunbuy, although a small collection also occurs in the greater Darwin area.

### **Fishing Method**

Aquarium Fishing/Display Fishery licensees can use barrier, cast, scoop, drag and skimmer nets, hand pumps, freshwater pots and hand-held instruments to collect aquarium species.

### **Catch**

The quantity of organisms harvested in the fishery is recorded either by weight or number of individuals. Tables 1 and 2 show the quantities harvested in 2009.

Hermit crabs and corals comprised much of the invertebrate harvest in 2009. Approximately 3358 kg of live rock (mostly pieces of dead hard coral that had detached from the reef and had been colonised by other organisms) was taken. Over 330 kg of small shrimp (*Acetes* spp.), which occur in massive numbers at certain times of the year, were also collected. In 2009, 195 giant clams (*Tridacna squamosa*) were collected. The number of giant clams harvested each year is highly dependent on market demand.

Rainbowfish and scats were the most popular group of fish taken, followed by gudgeons, catfish and sole (Table 2). All the fish harvested in the fishery are widespread and abundant in the NT.

A total of 32 070 Group A finfish (silver and spotted scats, common archerfish, chequered and black banded rainbowfish, sailfin perchlet and black catfish) were harvested in 2009. The estimated harvest of coral and associated benthic species was approximately 5.5 tonnes, well below the trigger point of 60 tonnes.

### **Effort**

It is difficult to quantify effort within the fishery because of the wide range of species targeted, each with its own specific harvest technique, as well as differences in reporting of effort by licensees.

The fishery operates on a small scale, using highly selective harvest methods. Harvesting is restricted by weather conditions for much of the year and the majority of the species harvested have a wide distribution. These factors, in conjunction with strict controls and low participant numbers, result in minimal effort overall in the fishery. In 2009, 152 days were expended in the fishery, which is a decline from the 174 days fished in 2008.

### **Marketing**

Advances in affordable aquarium technology have led to increased demand for a wider range of aquarium species by private aquaria, including corals, sponges and live rock, in addition to freshwater fish species. Most of the product harvested by the Aquarium Fishing/Display Fishery licensees is exported interstate by air.

**Table 1.** Invertebrates taken during 2009 in the Aquarium Fishing/Display Fishery

Invertebrate	Harvest
Acetes shrimp	331.3 kg
Anemones	410 individuals
Cherabin	66 individuals
Corallimorphs	7411 individuals
Coral other	2131 individuals
Giant clams	195 individuals
Land hermit crabs	26 021 individuals
Live rock	3358 kg
Red claw crayfish	140 individuals
Shrimp	775 individuals

**Table 2.** Fish taken during 2009 in the Aquarium Fishing/Display Fishery

Fish	Harvest (Individuals)
Anemone fish (all)	278
Archerfish (all)	2707
Catfish (other)	2488
Eel-tailed catfish (all)	5957
Gudgeons (all)	8633
Hardyheads (all)	1254
Mouth almighty	455
Mullet (all)	249
Puffer fish (all)	1216
Rainbowfish (all)	14 815
Scats (all)	14 623
Sole (all)	2285
Tarpon	1571
Other	2201

## Recreational Sector

There are no specific regulations on collecting fish for personal aquaria other than the recreational fishing rules and regulations regarding minimum sizes and possession limits. For example, recreational aquarium hobbyists may not possess under-size barramundi unless they have proof of purchase from a licensed aquarium trader. Similarly, recreational fishers cannot possess more than 30 fish outside of their place of permanent residence.

### Fishing Method

Targeted species may be collected by hand or by using a cast or scoop net, hand pump or a freshwater pot.

### Catch

The recreational harvest of aquarium species is not known, but is assumed to be very low. Surveys of recreational fishers in 1995 and 2000-01 reported no aquarium fish being collected, despite the inclusion of a specific question examining this issue (Coleman 1998, Coleman 2004).

## Non-retained Species

There is little bycatch taken in the fishery, primarily due to the highly selective fishing methods used and licensing requirements to ensure all non-target species are immediately returned to the water as soon as practicable with as little damage as possible. Observers from DoR accompanying licensees during their harvesting activities have verified the extremely low bycatch and mortality rate in all species caught within this fishery.

### Threatened Species Interaction

The Commonwealth's EPBC Act requires fishers to report to DEWHA within seven days of becoming aware of any interaction with threatened, endangered and protected (TEP) species found in Commonwealth waters.

Hard corals, giant clams and the occasional sawfish (for display purposes) are the only groups of organisms listed on the Convention on International Trade in Endangered Species (CITES) harvested by operators in the fishery. While listed under CITES, low numbers of these species are allowed to be harvested provided their collection is considered to be within acceptable sustainability limits for the fishery. Harvest trigger limits for these species are outlined in Table 3. A number of other factors also provide protection to these two groups, including the extensive area of the fishery, seasonal closures and the wide distribution of the species. No TEP species were harvested in 2009 and there were no reported interactions with TEP species.

### **Ecosystem Impact**

The potential impact on the environment of this fishery is limited due to the small scale nature of the industry and the unique climatic and regional characteristics of the NT. Monsoonal weather conditions render large portions of both inland and coastal waters of the NT inaccessible or unsafe for a significant period of each year. Furthermore, the biology of many species limits the frequency at which they can be caught in commercially-viable numbers.

The distance of collection sites from population centres imposes economic constraints on aquarium collectors, which has led to a concentrated effort around Darwin and Nhulunbuy. The combination of these factors provides extensive "protection zones" that are not readily available for commercial or recreational exploitation.

### **Social Impact**

The harvesting of coral in areas adjacent to major population centres is an issue for DoR, due largely to a lack of community awareness regarding the real impacts of coral harvesting. In an effort to minimise social conflict, DoR and NTAC have negotiated the closure of Darwin and Gove Harbours to commercial collecting of coral and associated benthic species.

### **Economic Impact**

Based on market sales, the catch value of the fishery was estimated at over \$350 000 in 2009.

## **STOCK ASSESSMENT**

### **Monitoring**

Licensees are required to complete and submit monthly logbook returns reporting catch and effort data from their operations. Observer trips are also undertaken when necessary. Monitoring provides significant information on the areas fished and capture methods used. Common aquarium species targeted by licensees at a particular point in time are also identified.

No observer trips were undertaken during 2009. However, future observer monitoring trips will be undertaken periodically to validate logbook data.

### **Current Harvest Status**

The current level of harvest is low and the impact on the resource by commercial operations is considered to be insignificant.

Most species were well within their trigger points in 2009. However, several trigger points were reached for species within Group A finfish. Catches of banded rainbowfish, chequered rainbowfish, sailfin perchlet, silver scats and black catfish declined by more than 70% in 2009 compared with the previous three-year average (Table 3). While these declines in catch are likely to be market-driven, concerns have been raised by fishers suggesting that cane toads may be having a delayed impact on populations of black catfish. The fact that this species has not been harvested in the last two years, lends weight to this argument. To address these concerns, DoR will assess the feasibility of conducting independent surveys in areas where black catfish have been historically caught. In addition, DoR will liaise with industry and carefully monitor logbook catch returns to see if black catfish numbers increase in 2010. Furthermore, changes to logbooks for the Aquarium Fishing/Display Fishery will provide more information to assist

with monitoring catches of these species in the future.

### **Future Assessment Needs**

Future assessment needs of the Aquarium Fishing/Display Fishery will be driven by the requirements for ESD reporting.

## **RESEARCH**

### **Summary**

The Department of Natural Resources, Environment, The Arts and Sport has been monitoring coral reefs around Nhulunbuy and Cobourg Peninsula for several years. In 2005, Cyclone Ingrid destroyed some regions of reef within the fishery. Bleaching of corals, possibly related to high water temperatures, has also been documented in these reefs (Gomelyuk 2003).

Scientists from the Museum of Tropical North Queensland (Townsville) and Kansas State University (USA) are currently clarifying the taxonomy and identification of anemones, corallimorphs and hard corals in the Nhulunbuy area, using morphology and genetic techniques.

The project titled 'A Comprehensive Analysis of the Freshwater Fish Faunas and their Key Management Issues across Northern Australia', coordinated by James Cook and Griffith Universities with considerable involvement from DoR was completed in 2008. This study provided information to map the geographic distribution, biodiversity and habitat requirements of freshwater fish in all major catchments across the NT. Consequently, the data provided a wealth of information on which to base future decisions regarding the harvest of freshwater fish species.

A pilot study on the biology and potential sustainable yield of the land hermit crab (*Coenobitat variabilis*) was conducted by DoR in the Darwin area during 2008. Tagged empty shells were distributed over hermit crab habitat to determine whether shells were a limiting resource for hermit crabs. A number of hermit crabs were

tagged at each site to assess movement and a sample was retained for assessment of their fecundity. Results from this study showed that hermit crabs quickly utilised the empty shells that were provided, suggesting that abundance of adults is limited by the number of available shells. In addition, adult hermit crabs showed fairly restricted movements averaging less than 11 m/day; the largest movement was 70 m/day. Gravid females found during this work typically contained more than 200 eggs. Separate to the project, researchers have found gravid hermit crabs in the Darwin area during February, suggesting that the crabs probably have a protracted spawning period of at least five months duration.

### **Current Research**

The project titled 'Water Regime Dependence of Fish in the Wet-Dry Tropics' was initiated in 2006 and is managed by Charles Darwin and Griffith Universities, with considerable involvement of DoR. The objective is to sample the fish communities of the middle and upper reaches of the Daly River basin. The results from this study will continue to provide information on which to base future decisions related to harvesting freshwater fish species in this basin.

Another freshwater fish study was initiated in Scott's Creek, approximately 50 km east of Darwin, during 2009. During the dry season, water levels in this creek fall very low, forming a series of isolated pools that tend to dry out during the course of the season. Electrofishing was undertaken in several of these pools to identify the numbers of fish that are predated upon or killed as the pools dry. Further surveys will be conducted in 2010 to conclude this study.

## **MANAGEMENT/GOVERNANCE**

### **Management**

#### **Objective**

The fishery is managed in accordance with the NT *Fisheries Regulations 1993* and conditions of licence. Management objectives, performance

indicators, measures, triggers and management actions for the fishery are outlined in Table 3.

Management arrangements for the fishery aim to ensure the ecological sustainability of collected species with minimal impact to TEP species and the aquatic environment. This is achieved through a combination of input and output controls, including catch, area and gear restrictions. Licence conditions stipulate what gear may be used and areas where harvesting is permitted.

The impact on the resource by commercial operations is considered to be relatively insignificant due to the small number of participants, low harvest levels, multiple species targeted, a large area of habitat available to the species and the selective nature of the fishery. The fishery is also subject to natural seasonal closures.

The recreational capture of marine and freshwater fish and benthic species by hobby aquarists is managed by the same regulations as for recreational fishing, including controlling the gear that may be used, access to areas, and the size and possession limits for managed species.

### **History**

From the 1970s, aquarium fish collecting, trading and aquaculture were permitted under a "C" Class licence. These licences were specifically endorsed for trading, collection and aquaculture of aquarium species.

In 1993, C Class licences were separated into three individual licences, depending on the original endorsement: 1) Aquarium Fishing/Display Fishery licence permitting the collection, display and sale of aquarium species; 2) Aquarium Trader licence, predominantly importers of aquarium species; and 3) Aquaculture licence.

The Aquarium Fishing/Display Fishery licence authorises the licensee to harvest aquarium species from the wild for subsequent supply to the aquarium trader. The Aquarium Trader

licensee is generally an importer of product, mostly from interstate.

Until 1994, all aquarium collecting licensees were permitted to collect coral. In 1994, a prohibition on coral harvesting was imposed. In response to subsequent submissions from a number of licensees, some aquarium collectors were permitted to take restricted quantities of coral.

A moratorium on the issue of new aquarium collecting licences was implemented in 2001 in response to concerns over coral collection and the need for a comprehensive review of the fishery.

The review process resulted in changes to licence conditions for both the Aquarium Fishing/Display Fishery and the Aquarium Trader licences. The new conditions allowed all Aquarium Fishing/Display Fishery licence holders to collect limited amounts of coral and associated benthic species. The collection of coral and associated benthic species is linked to a maximum trigger point, and collection is prohibited in Darwin and Gove Harbours as well as designated protected areas, such as Doctor's Gully and East Point Aquatic Life Reserves.

The Aquarium Trader licence conditions were changed to allow the licensee the ability to establish display aquaria. However, the collection of aquatic life is strictly prohibited under an Aquarium Trader licence.

The management arrangements for the fishery were initially assessed by DEWHA against the Guidelines for the Ecologically Sustainable Management of Fisheries in 2006. A WTO approval was granted for two years subject to conditions associated with ongoing sustainability of the fishery. Performance indicators were developed for the fishery as a result of those recommendations (Table 3).

In accordance with the agreed outcomes of the review, Aquarium Fishing/Display Fishery licences became transferable in October 2008. In addition, it was also agreed that a Public Aquarium licence would be introduced to enable

the establishment of new public display aquariums within the NT. This licence category was introduced in early 2008 and is known as the Public Aquarium licence.

### **Current Issues**

In 2008, the management arrangements for the fishery were re-assessed against the Guidelines for the Ecologically Sustainable Management of Fisheries. A WTO was granted for three years enabling the continued export of the product harvested in the fishery. Re-assessment of the fishery is due in June 2011.

It is likely that a further refinement of the performance indicators of the fishery will be required, particularly in relation to the harvest of coral and other associated benthic species. DoR will continue to work with NTAC to meet DEWHA recommendations to retain, if not improve, on the WTO approval.

In line with the National Strategic Approach to the Management of Ornamental Fish, DoR is committed to developing a similar strategic approach for the NT. In 2007 DoR, in conjunction with industry representatives and relevant technical experts, established an Ornamental Fish Management Implementation Group (OFMIG) to address the national commitments and provide advice regarding the ongoing management and control of ornamental fish in the NT. The working group agreed that the national assessment process for imported aquatic species should be incorporated into existing NT Fisheries procedures. The working group used a uniform approach and identified a list of noxious fish species that should be prohibited throughout Australia. This list was legislated after public consultation. In 2009 OFMIG proposed a second group of 'high risk' species for addition to the list. The proposed species were identified as being of high risk to Australia's environment through an agreed scientific risk assessment method, and were considered to be of low interest to the industry and to hobbyists by OFMIG's technical working group. It is expected that this second group of species will be legislated and a third group assessed in 2010.

Logbooks were revised in 2009 to record GPS data and ensure more accurate and consistent reporting of aquarium species.

The harvest trigger level for corals and associated benthic species was revised during 2009. The 60 tonne trigger for coral and associated benthic species has been split into specific regional triggers. The industry has agreed for the 60 tonne trigger to be divided equally amongst the three identified bioregions. The bioregions are based on the Interim Marine and Coastal Regionalisation of Australia marine biogeographic regions map.

The regional trigger levels and performance indicators will enable both sustainable growth of the industry while providing appropriate safeguards to ensure protection of corals and associated benthic species.

### **Future Plans**

DoR will maintain a monitoring program with logbooks and observer trips aligned with the management objectives and performance indicators for the fishery (Table 3). These will ensure ESD of the resource with a view to maintaining the export status of the fishery under the EPBC Act.

DoR will continue to be involved with OFMIG and work through the identification of further noxious fish species.

The revised trigger point has been in place since July 2009.

The regional trigger levels and performance indicators will enable both sustainable growth of the industry while providing appropriate safeguards to ensure protection of corals and associated benthic species.

As species identification and reporting improve, the coral and associated benthic species trigger point may be further refined.

## Compliance

The Water Police Section of the NT Police, Fire and Emergency Services, ensures operators comply with the management arrangements for the fishery through random on-the-spot inspections of harvesting activities and targeted enforcement programs with fishers and traders. There were no recorded convictions for compliance breaches in the fishery in 2009.

## Consultation, Communication and Education

DoR works with stakeholders in the fishery individually and through NTAC, as well as specific stakeholder groups.

In addition, a series of Aboriginal Consultative Committees were formed to provide DoR with the opportunity to consult with coastal Aboriginal communities on all aspects of fishing, including aquarium species.

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## REFERENCES

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**Table 3.** Management objectives and harvest status against the performance indicators for the Aquarium Fishing/Display Fishery

Species or group	Management objective	Performance indicator	Performance measure	Harvest status for 2009	Management response to be taken
Group A Finfish (silver and spotted scat, common archerfish, chequered and black banded rainbowfish, sailfin perchlet, black catfish)	Ensure intergenerational equity by maintaining ecologically sustainable annual catches in all sectors.	Significant increase or decline in the annual catch.	The harvest of any Group A Finfish species has a trigger point of 30 000 individuals per species. The harvest of any Group A Finfish species increases or decreases by 70% compared with the mean of the previous three years.	Less than 30 000 of any Group A Finfish species harvested in 2009 – trigger reference point not reached. In 2009 the harvest of: 1. Chequered rainbowfish in 2009 increased by 333% 2. Black banded rainbowfish increased by 1126. 3. Sailfin perchlet declined by 92% in 4. Black catfish declined by 100% silver scats increased by 325% – trigger reference point not reached.	DoR to review Fishery, after consultation with industry stakeholders, and makes recommendations on appropriate management responses to the Executive Director of Fisheries. Advice provided to the Executive Director within three months of being made aware of trigger being reached.
Coral and associated benthic species	Ensure intergenerational equity by maintaining ecologically sustainable annual catches in all sectors.	Significant increase or decline in the annual catch.	Coral and associated benthic species have a total trigger value of 60 tonnes. The harvest of any coral and associated benthic species increases or decreases by 50% when compared to the mean of the previous 3 years.	Total harvest of coral and associated benthic species for 2009 was estimated to be 5.5 t – trigger reference point not reached. Harvest of corals and associated benthic species in 2009 within limits of the mean of the previous three years – trigger reference point not reached.	DoR to review fishery, after consultation with industry stakeholders, and make recommendations on appropriate management responses to the Executive Director of Fisheries. Advice provided to the Executive Director within three months of being made aware of trigger being reached.

Species or group	Management objective	Performance indicator	Performance measure	Harvest status for 2009	Management response to be taken
Giant fluted clams	Ensure intergenerational equity by maintaining ecologically sustainable annual catches in all sectors.	Significant increase or decline in the annual catch.	Giant fluted clams are harvested within a trigger value of 2000 individuals The harvest of giant fluted clams increases or decreases by 50% compared with the mean of the previous three years.	A total of 195 giant clams were harvested in 2009 – trigger reference point not reached. The harvest of giant fluted clams decreased by 29% of the three years mean in 2009 – trigger reference point not reached.	DoR to review fishery, after consultation with industry stakeholders and make recommendations on appropriate management responses to the Executive Director of Fisheries. Advice provided to the Executive Director within three months of being made aware of trigger being reached.
Narrow sawfish ( <i>Anoxypristis cuspidate</i> ) and dwarf sawfish ( <i>Pristis clavata</i> )	Ensure intergenerational equity by maintaining ecologically sustainable annual catches in all sectors.	Significant increase or decline in the annual catch.	<i>Pristis</i> species are harvested within a trigger value of 20 individuals. The harvest of any <i>Pristis</i> species increases or decreases by 50% compared with the mean of the previous three years.	There were no <i>Pristis</i> species harvested in 2009 – trigger reference point not reached. n/a – none harvested in 2009.	DoR to review fishery, after consultation with industry stakeholders, and make recommendations on appropriate management responses to the Executive Director of Fisheries. Advice provided to the Executive Director within three months of being made aware of trigger being reached.
Syngnathid species, other than <i>Hippocampus</i> (seahorses) – NT waters only	Ensure intergenerational equity by maintaining ecologically sustainable annual catches in all sectors.	Significant increase or decline in the annual catch.	Syngnathids, other than <i>Hippocampus</i> , are harvested within a trigger value of 150 individuals. The harvest of any syngnathids, other than <i>Hippocampus</i> , increases or decreases by 50% compared with the mean of the previous three years.	There were no syngnathid species harvested in 2009 – trigger reference point not reached. n/a – none harvested in 2009.	DoR to review fishery after consultation with industry stakeholders, and make recommendations on appropriate management responses to the Executive Director of Fisheries. Advice provided to the Executive Director within three months of being made aware of trigger being reached.
<i>Hippocampus</i> (seahorses) – NT waters only	Ensure intergenerational equity by maintaining ecologically sustainable annual catches in all sectors.	Significant increase or decline in the annual catch.	<i>Hippocampus</i> are harvested within a trigger value of 50 individuals The harvest of any <i>Hippocampus</i> increases or decreases by 50% compared with the mean of the previous three years.	There were no <i>Hippocampus</i> individuals harvested in 2009 – trigger reference point not reached. n/a – none harvest in 2009.	DoR to review fishery, after consultation with industry stakeholders, and make recommendations on appropriate management responses to the Executive Director of Fisheries. Advice provided to the Executive Director within three months of being made aware of trigger being reached.

Species or group	Management objective	Performance indicator	Performance measure	Harvest status for 2009	Management response to be taken
Hermit crabs	Ensure intergenerational equity by maintaining ecologically sustainable annual catches in all sectors.	Significant increase or decline in the annual catch.	A precautionary trigger is set at 120 000 hermit crabs per year. The harvest of hermit crabs increases or decreases by 70% compared with the mean of the previous three years.	Only 26 021 hermit crabs were harvested in 2009 – trigger reference point not reached. The harvest in 2009 of hermit crabs decreased by 3% over the mean of the previous three years.	DoR to review fishery, after consultation with industry stakeholders, and make recommendations on appropriate management responses to the Executive Director of Fisheries. Advice provided to the Executive Director within three months of being made aware of trigger being reached.
EPBC Act listed species (excluding Syngnathids) in Territory waters	Ensure the continued protection of species and communities listed under the EPBC Act.	Endangered, threatened or protected species and/or communities are identified in Northern Territory waters.	Identifiable impacts observed by DoR, commercial fishers, or other agencies regarding EPBC Act listed species or communities.	There were no identifiable impacts on EPBC species or communities observed in 2009 – trigger reference point not reached.	DoR to review fishery, after consultation with industry stakeholders, and make recommendations on appropriate management responses to the Executive Director of Fisheries. Advice provided to the Executive Director within three months of being made aware of trigger being reached.
EPBC Act listed species in Commonwealth waters	Ensure the continued protection of TEP species.		No EPBC Act listed species may be taken in Commonwealth waters.	There were no EPBC Act listed species taken during 2009 – trigger reference point not reached.	Advice provided to Executive Director of Fisheries and DEWHA regarding any interactions in Commonwealth waters.
Ecosystem components	Minimise effects on ecosystem components.	Identification of threatening processes.	Identification of significant negative ecosystem impacts on aquarium fishing grounds.	There were no negative ecosystem impacts observed in 2009 – trigger reference point not reached.	DoR to make recommendations, after consultation with industry stakeholders, to the Executive Director of Fisheries regarding appropriate remedial action. Advice provided to the Executive Director within three months of being made aware of trigger being reached.
Harvest of TEP species intended for trade to public aquariums (except coral and associated benthic species)	Continuation of public education while ensuring the ongoing protection of species and communities listed under the EPBC Act, <i>Territory Parks and Wildlife Conservation Act 2001</i> and CITES.	Significant increase or decline in the annual catch.	The harvest of any TEP species increases or decreases by 50% compared with the mean of the previous three years.	Identifiable impacts observed by DoR, commercial fishers, or other agencies regarding EPBC Act listed species or communities. There were no impacts on TEP species or communities observed in 2009 – trigger reference point not reached.	DoR to make recommendations, after consultation with industry stakeholders, to the Executive Director of Fisheries regarding appropriate remedial action. Advice provided to the Executive Director within three months of being made aware of trigger being reached.