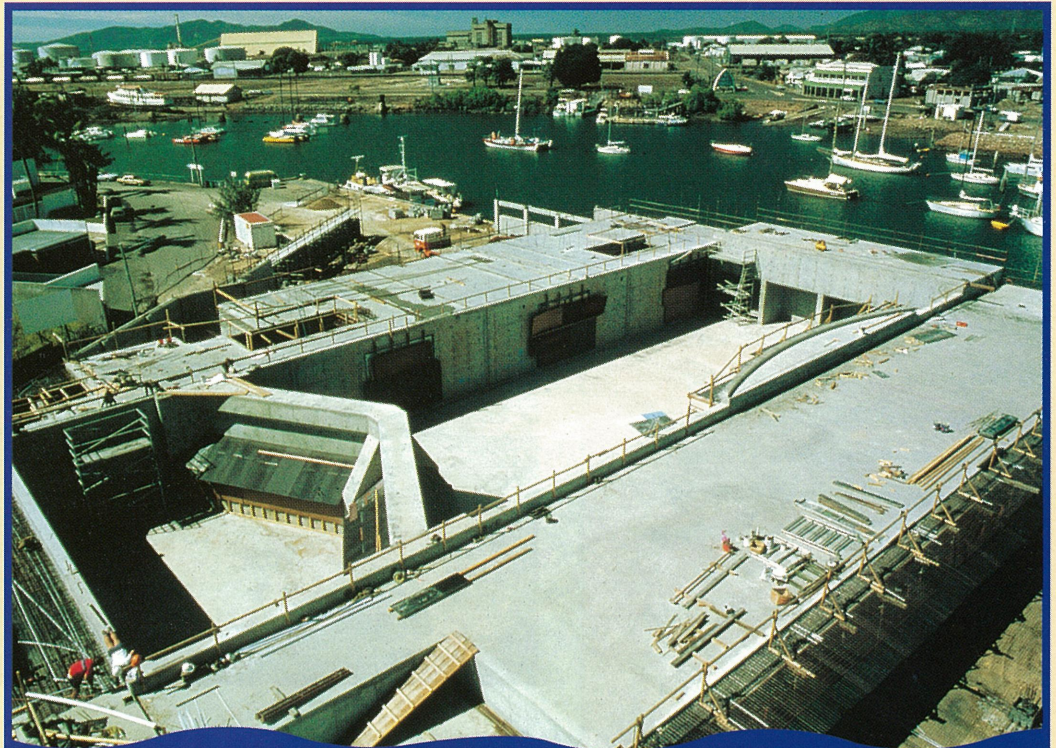


# Coralines

AQUARIUM SUPPORTERS' MAGAZINE



GREAT BARRIER REEF  
AQUARIUM



*Difficult to recognise, Townsville's landscape during the building of the Great Barrier Reef Aquarium.*

## AQUARIUM TURNS 10

**A**lmost 10 years ago the Great Barrier Reef Aquarium opened its doors to the public. As an Australian Bicentenary Project, it was designed to provide easy access for people to enjoy learning about reef communities.

Since opening, the Aquarium has had nearly 2 million visitors. Awarding winning programs have been developed such as the Education Program and Volunteer Program. In the last year film companies including Japanese, German and American, have come to Australia to produce documentaries on the Aquarium's research projects.

Aquarium Members have become an integral part of our operations since the Program started in 1989.

Currently, we have approximately 5 700 people – that's about 4% of Townsville's population – involved in the Members' Program.

By encouraging your friends and relatives to visit us during their stay in Townsville, you have assisted the Aquarium contribute to the significant tourism growth in Townsville. Thank you for your continued support, we look forward to the next 10 years.

## INSURANCE FOR FISH?

The Great Barrier Reef Aquarium houses and feeds 1 200 various types of fish in the Coral Reef Exhibit, and approximately 50 predators in the Predator Exhibit. The water quality requirements for the two exhibits are very different as they sustain different types of marine animals.

We humans use filters to keep our backyard pools clean and home aquariums also rely on simple water cleaning systems. The fish at the Aquarium rely on filters as well, only our filters are huge. About the size of an average bedroom, each of the filters has a capacity to pump and clean 324 000 litres of water per hour. This means it takes 3 hours to clean the 750 000 litres of water in the Predator Exhibit and 24 hours to clean the 2.5 million litres in the Coral Reef Exhibit. As filtering the water is an important component in providing the best environment for coral reef creatures, you could describe these filters as insurance for the Aquarium's fish.



*Aquarium staff re-fill the sand filters using a conveyor belt.*

## WHERE DO WE GET OUR FISH FROM?

Once a year, staff of the Aquarium stay overnight at Lodestone Reef 40 km north of Townsville. A very busy two days, the field trip is designed to collect stock for the Aquarium exhibits.

Primarily seeking fish like chromis, damsel, gregories, fusiliers, triggerfish, wrasses, butterflyfish, angelfish, tiger sharks, trevally and sweetlip, but also starfish, molluscs, shellfish, sea cucumbers, sea urchins, coralline algae and sea weed. It also provides staff an opportunity to net creatures that normally would not be found closer to shore. Every animal collected is carefully documented to fulfil the requirements of our collecting permits and management of the reef.



*Aquarium Aquarists inspect coral and fish specimens collected at Lodestone Reef.*

## ORIGINAL AQUARIUM ENGINEERING CHALLENGE PROVES SUCCESSFUL

Preliminary results from a recent engineering structural audit has indicated the original cementing techniques at the Aquarium were successful, and that the building has a serviceable life of at least another 50 years.

Built 10 years ago, the Aquarium revolutionised engineering of the time. In many projects, engineers find their challenges begin at the bottom, in the foundations, and the challenge of designing and building a structure to hold 4 million litres of water—highly corrosive sea water—provided a unique challenge for the Townsville engineering firm Ariotti, Hamilton and Bruce. Their main concern was to ensure that the reinforcing steel didn't

rust and that the structural materials didn't contaminate the water and endanger the delicate nutrient level required to contain a living ecosystem.

Corrosion is a major problem for Aquariums. The challenge therefore for Ariotti, Hamilton and Bruce was to specify a concrete which would not contaminate the water and had maximum crack resistance properties. With the help of a local cement company, the engineers devised a world first cement formula to eliminate cracking. Liquid nitrogen was added to the cement mix in the trucks before delivery to keep the cement cool enough on pouring to minimise cracking by slowing down the curing process.

## BABY TURTLES

**10** flatback turtles were hatched mid-January. Several lucky visitors at the Aquarium witnessed their little bodies emerge from their eggs in the incubator. In early February, a small group of Aquarium Members had the opportunity to release them to the wild at the same beach they were collected as eggs.

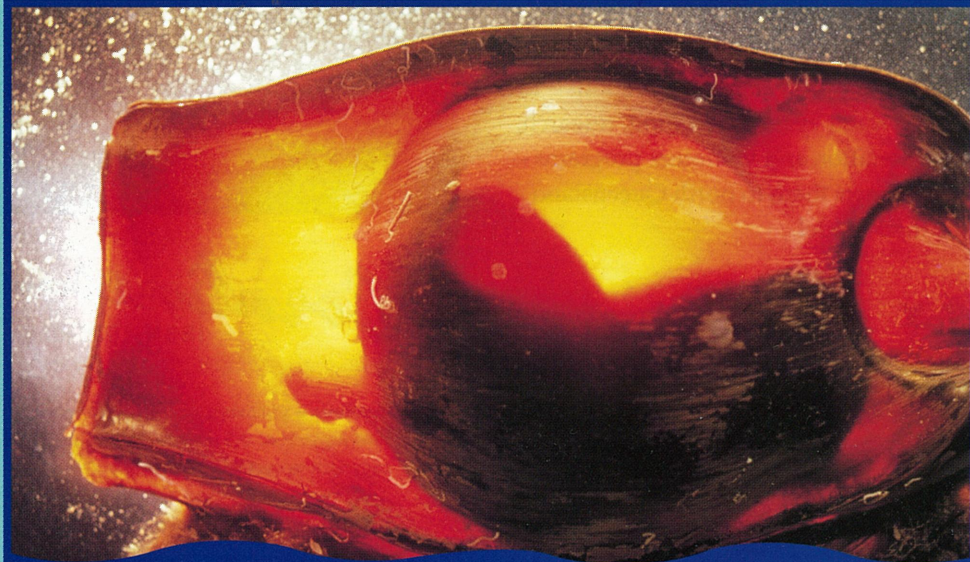


*Tiny turtles are always a popular attraction at the Aquarium.*

## MERMAID'S PURSE

**A** shark egg—commonly known as a mermaid's purse—was found by a member of the community on Pallarenda beach recently, and delivered to the Aquarium for safe keeping. For four months the

species of the embryo had been the object of animated debate amongst the Aquarium staff, but all was revealed mid-January when the mermaid's purse hatched to be a 10 cm long brown-banded cat shark.



*The shark receives nourishment from the egg yolk.*

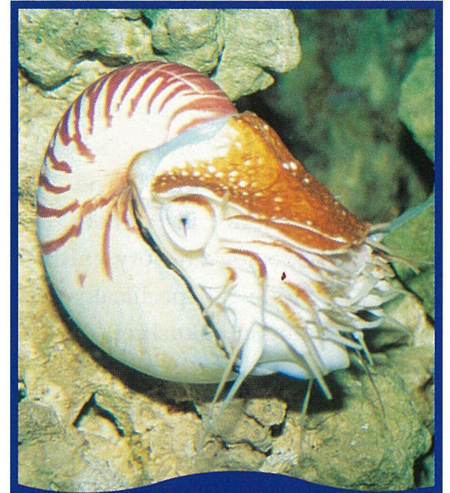
## JANUARY ARRIVALS

**A**pproximately 15 baby clownfish have arrived, born early January. Clownfish eggs take 7 to 10 days to hatch. The young will immediately leave their parents to start a life of their own.

Clownfish have adapted themselves to tolerate the powerful stings of the anemone used to paralyse prey. In order for the anemone not to sting itself, one theory suggests that the anemone produces a mucus for protection. It is thought that the clownfish also rubs in the anemone mucus to build up immunity to the stings.

## EVER SEEN A BABY NAUTILUS?

**T**he first nautilus egg has been laid and fertilised at the Great Barrier Reef Aquarium. Laid during October, the egg currently measures about 4 cm long. Nautilus live in water depths of about 250 metres, rising to 80 metres to lay their eggs. It takes anywhere between 9 and 13 months for an egg to hatch depending on the temperature of the water (the cooler the water, the longer the incubation). Ask an interpreter during your next visit to show you the egg!



*The nautilus is a fascinating prehistoric creature.*

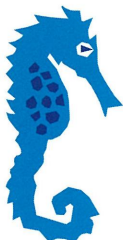
## FROM CURATORIAL OPERATIONS

**F**ollowing advice from the Waikiki Aquarium, a titanium chiller unit has been recently purchased. Designed to cool the water to a constant temperature of 17°C, the unit will enable us to provide a more natural environment for the nautilus shells. Until now, we have had difficulty in keeping the water temperature of the nautilus exhibit sufficiently cool, especially during summer.

# ◆ DAILY PROGRAM ◆

FEBRUARY 1997 – APRIL 1997

## THEATRETTE PRESENTATION OF THE GREAT BARRIER REEF



This show is a fantastic introduction to reef life. Take 15 minutes to acquaint yourself with the complexities of a coral reef ecosystem.

**Time:** 9.30 am, then hourly from 10.00 am to 4.00 pm every day  
**Cost:** included in Aquarium admission

## DIVER TALKBACK SHOW

Talk to the divers while they are underwater in the Coral Reef Exhibit. Hear some amazing stories and have your questions answered from inside.

**Time:** 10.30 am daily  
**Cost:** included in Aquarium admission

## DISCOVERY TOUR

Take a tour of discovery through the Aquarium with experienced reef interpreters. Unravel the mysteries of the reef and the secrets of keeping a living reef on land.

**Time:** 11.20 am and 2.20 pm daily  
**Cost:** included in Aquarium admission

## SHARK FEEDING

It's always an exciting time when the predators are being fed. Sharks, trevally, the huge 200 kg grouper and a friendly turtle vie for food.

**Time:** Every Sunday, Tuesday and Thursday at 3.30 pm  
**Cost:** included in Aquarium admission

## KIDS CORNER

A special place for the young and the young at heart and every month we have a different theme. There is no age limit to having fun!

**Time:** Saturday and Sunday 11.00 am – 12.00 pm, and 2.00 pm – 3.00 pm  
**Cost:** included in Aquarium admission

## TURTLE FEEDING

Come up to the Contact Zone and learn how these beautiful baby turtles are reared.

**Time:** 12.20 pm every day  
**Cost:** included in Aquarium admission

## ANIMAL FEEDING TOUR

Join the Aquarists as they handfeed a variety of marine creatures such as the deep sea nautilus, crayfish and sea snakes. Our routine varies so please phone to check the program.

**Time:** week one – Tuesday and Saturday at 3.20 pm  
week two – Wednesday and Sunday at 3.20 pm  
**Cost:** included in Aquarium admission

## PREDATOR DIVES

Come face-to-face with some of the ocean's predators. Spotting a shark while diving is rare, at the Great Barrier Reef Aquarium it's a guaranteed experience! An exciting 20 minute dive, you'll swim with reef sharks, leopard sharks, a huge 200 kilogram grouper – fondly known as Dominator – stingrays, trevally and a very inquisitive turtle. You must show your Diver 'C' Card and gear can be hired.

**Time:** Every Wednesday and Saturday at 8.45 am, 9.30 am and 10.20 am.

**Cost:** Members \$55.00 Non-Members \$65.00  
which includes admission to the Aquarium

**Bookings:** You need to book a minimum of 24 hours before your dive. Book at the Great Barrier Reef Aquarium shop or phone The Dive Bell on 211 155.

**Maximum group:** 6 people per dive session



**GREAT BARRIER REEF  
AQUARIUM**

# ◆ MEMBERS' PROGRAM ◆

FOR FURTHER INFORMATION AND BOOKINGS PLEASE CALL  
WEEKDAYS 500 800 AND WEEKENDS 500 891.

## UNDERWATER DREAMERS

### Sleepover for children

Ahoy ye maties! This year's theme is ship wrecked, so get set to dress up. Prizes awarded for all the participants of the survival trail. This popular sleepover will be repeated in May for those who miss out. Book early!

<b>Date:</b>	4 April	
<b>Time:</b>	7.00 pm – 8.00 am	
<b>Cost:</b>	<i>Members</i>	<i>Non-Members</i>
1st child	\$26	\$32
2nd child	\$22	\$27
3rd child	\$20	\$25
<b>Age group:</b>	6 – 12 years	
<b>Maximum group:</b>	30 children	
<b>Bookings close:</b>	21 March	

## MEMBERS' REEF TRIP

A great day to socialise, dive, snorkel, explore under water and do some fishing. Lots of prizes and giveaways.

<b>Date:</b>	13 April	
<b>Time:</b>	8.30 am – 5.00 pm	
<b>Cost:</b>	<i>Children</i>	<i>Adults</i>
0 – 3 years	free	\$90
4 – 14 years	\$50	
15 years and above	\$90	

**Bookings close:** 12 April. Please phone 213 555 stating your Membership number.

## SEAFOOD FIESTA

A fantastic night to sip wine, taste culinary delights and participate in seafood cooking demonstrations. Dress theme is tropical.

<b>Date:</b>	21 March	
<b>Time:</b>	7.30 pm – 9.30 pm	
<b>Cost:</b>	<i>Members</i>	<i>Non-Members</i>
Per person	\$40	\$45
<b>Bookings close:</b>	14 March	

## EASTER HOLIDAY PROGRAM

Come along and learn about Australia's traditional indigenous culture! There's Aboriginal and Torres Strait Islander craft activities like painting and weaving.

<b>Date:</b>	28 March – 7 April	
<b>Time:</b>	11.00 am – 1.00 pm every day	
<b>Age group:</b>	5 – 12 years	
<b>Cost:</b>	FREE	
<b>No need to book!</b>		

## MUST SEA MUST DO

The Aquarium Members' Program offers a diverse range of entertainment and education. There are many activities to look forward to this year, including a Coral Reef Biology course, the Aquarium's 10th Birthday celebrations, a Mother's Day Breakfast, sailing on the South Passage, as well as Father's Day and Melbourne Cup celebrations. Of course the Aquarium's popular holiday programs, Christmas Party and sleepovers will return. Don't forget as Aquarium Members you have the opportunity to enjoy a Predator Dive at a discounted rate!



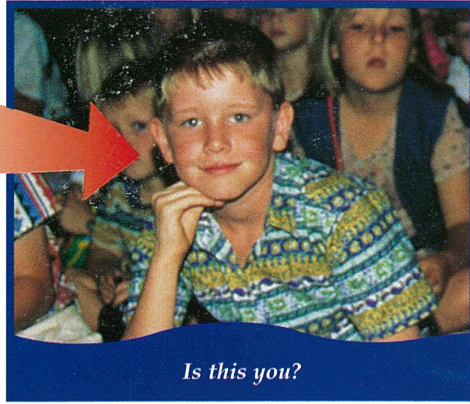
**GREAT BARRIER REEF  
AQUARIUM**

Aquarium Members' Program is proudly sponsored by



## THE HOTTEST GOSSIP AROUND TOWN

Please phone (077) 500 800 if this is you. Snapped recently during a Members program, this person has won their family an Island Celebration package which includes one nights accommodation for two, chicken and champagne brunch at Magnetic International Resort and return ferry transfers! Compliments of Magnetic International Resort and the Aquarium Members Program.



Is this you?

## GREAT BARRIER REEF AQUARIUM, THE FOCUS OF TOWNSVILLE'S SISTER-CITY INTEREST

The Fukushima Prefecture in Japan is designing an aquarium and promoting it as the focus of the special redevelopment of Onahama Port in Iwaki, Townsville's Sister-City. In the final stages of planning, construction is set to start in 1998 and aims be completed by the year 2000. The Japanese aquarium will promote education of zoology, history, culture and the environment specifically related to people living in Fukushima Prefecture. Aptly named the Marine Culture and Learning Facility, the new

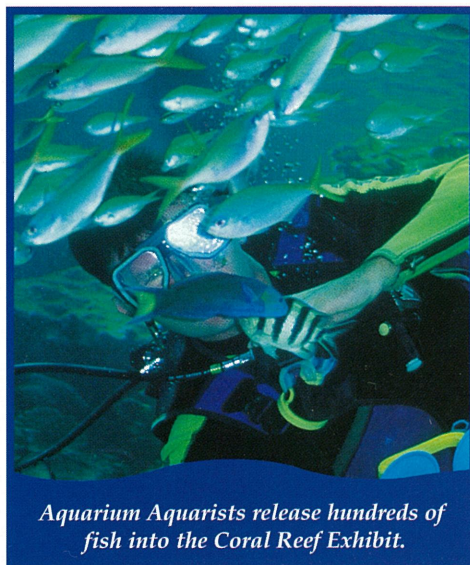
Iwaki aquarium will promote guidelines for people to live in harmony with natural eco-systems, a concept very similar to our Aquarium.

Delegates from the Fukushima Prefecture Board of Education have been studying aquariums worldwide, seeking assistance for the redevelopment of the Port. However, it is the Great Barrier Reef Aquarium's unique operations—the closed water system, breeding, research, interpretation and volunteer programs—that attracts them to north Queensland for their model.

## THOSE NASTY EELS!

Juvenile predators hiding in tiny crevices of coral rock often accidentally find their way into the Coral Reef Exhibit. This was the case with two renegade eels that were unknowingly introduced to the Aquarium when they were too small for detection. But wow—those eels sure know how to party! Basically, the Coral Reef Exhibit is heaven to any predator, it's literally a seafood smorgasbord. Consequently, the eels grew very quickly, dining whenever they wished, utterly decimating the fish population.

The eels averted all efforts by the aquarists to capture them, with traps and nets proving futile. However, we are pleased to say that one eel—the largest—has finally been caught and is now waiting to be released back into



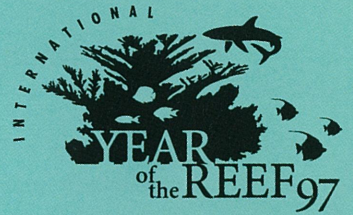
Aquarium Aquarists release hundreds of fish into the Coral Reef Exhibit.

Cleveland Bay. Since then, some 400 assorted parrot, foxface, wrasse, surgeon chromis, and pallate surgeon fish have been placed in the Coral Reef Exhibit.

## INTERNATIONAL YEAR OF THE REEF

1997 is the International Year of the Reef.

Throughout the year there will be international collaboration between organisations with common interests and aims in reef research and management. The Great Barrier Reef Aquarium will also assist with promoting these messages, as the future of the coral reefs worldwide are in jeopardy.



Coral Reefs are found in over 100 countries in the world. For thousands of years coastal communities have relied on the reefs for a range of products. Today people continue to use reefs for an essential protein source, restaurant trade and export marketing, building materials, tourism and as a potential sources of medicines.

*Coralines*

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