

DRAFT PLAN OF MANAGEMENT FOR THE
COTTESLOE REEF PROPOSED FISH
HABITAT PROTECTION AREA

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WOULD YOU LIKE TO COMMENT?

FISHERIES WESTERN AUSTRALIA
DRAFT PLAN OF MANAGEMENT
COTTESLOE REEF
PROPOSED FISH HABITAT PROTECTION AREA

Fisheries WA seeks comment from members of the public and involved stakeholder groups on this Draft Plan of Management, in accordance with S118 of the *Fish Resources Management Act 1994*. Any comments will be taken into consideration prior to the preparation of a final Plan of Management.

Submissions should be sent to:

Manager, Marine Planning
Fish and Fish Habitat Protection Program
Fisheries WA
3rd Floor, SGIO Atrium
168 – 170 St Georges Terrace
Perth WA 6000

The closing date for submissions is 4 June 2001.

If you require further information regarding the status or content of this document, please contact Ms Eve Bunbury, Manager, Marine Planning, Fish and Fish Habitat Protection Program on (08) 9482 7397

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Figure

1. Location and context map of proposed Cottesloe Reef Fish Habitat Protection Area

1.0 INTRODUCTION

The Cottesloe reef system stretches intermittently for approximately 4.4 kilometres from a point 300 metres south of the artificial surfing reef at the Cable Station to North Street, Cottesloe, as indicated in Figure 1 (see page 19 of this document).

It is located on a limestone shelf, which is known locally as the Cottesloe Fringing Bank. This shelf extends approximately 1.5 km offshore from the beach. The depth of the reef system varies, according to the contours of the submarine landform. Limestone pinnacles, elevated platforms and water-eroded limestone outcrops form most of the surface reef structure. In places, there are sea-grass patches and kelp beds occur within 100 metres of the shoreline.

The Cottesloe reefs and seagrasses provide a habitat for the weedy seadragon (*Phyllopteryx taeniolatus*). Sightings of their close cousin, the leafy seadragon (*Phycodurus eques*) have also reported, and skeletons found on the beach at South Cottesloe.

The beach and reefs at Cottesloe are intensively used by local and other metropolitan residents, and are highly popular with visitors to Perth.

The Cottesloe reef system is notable because it is a healthy, flourishing marine system, located close to a densely populated urban area and within close proximity to the shore. This makes it readily accessible to the general public and therefore vulnerable to human impacts.

The aim of this management plan is to promote and encourage the protection and rehabilitation of the aquatic habitat at Cottesloe Reef and to involve the community in its management.

The Cottesloe Marine Protection Group (CMPG) first proposed to nominate the Cottesloe reef system as a Fish Habitat Protection Area (FHPA) under Section 115 of the *Fish Resources Management Act (FRMA) 1994*. The CPMG was formed in December 1998 by a group of local snorkellers concerned about the depletion of marine life and degradation of the Cottesloe reefs as a result of human impacts such as spearfishing, collecting of marine life, and discharge of nutrient-enriched stormwater and groundwater. The aim of the CMPG is to protect the natural heritage value of the Cottesloe reefs and waters from the impact of human development and usage through appropriate management measures.

The CMPG successfully applied for two FISHCARE grants to fund the preparation of a Draft Management Plan for a proposed FHPA to protect the Cottesloe reef system. The Draft Plan was prepared in consultation with Fisheries WA and released by Fisheries WA for a two-month public review period in August 2000, which was subsequently extended to three months.

Submissions received during this period have been reviewed by Fisheries WA staff, and, where possible, concerns raised within the submissions are reflected in this revised Draft Plan of Management.

This revised Draft Plan of Management has been endorsed by the Minister for Forestry and Fisheries and is available for public review for thirty days, in accordance with Section 118 of the *FRMA 1994*.

The (proposed) FHPA will provide a framework through regulations and education to manage human activities that have, or may have, a destructive impact on the conservation values of the Cottesloe Reef System.

Much of the information provided by the CMPG in the original Draft Management Plan has been included within this revised Draft Plan of Management. The significant effort put into the preparation of the original Draft Management Plan and involvement of community in the preparation of this plan is acknowledged and appreciated by Fisheries WA.

A summary of a public consultation process undertaken by the CMPG in the preparation of the original Draft Management Plan for the proposed Cottesloe FHPA is included in a separate document entitled 'Public Consultation Process undertaken for the Draft Management Plan for the Cottesloe Reef System Proposed Fish Habitat Protection Area'. This document is available upon request from Fisheries WA.

2.0 METHODOLOGY

This revised Draft Plan of Management proposes that the Cottesloe Fish Habitat Protection Area be established pursuant to Section 115 of the *Fish Resource Management Act 1994*. It has been prepared to meet the requirements of Part II, Division 1 of the Act and has been endorsed for release by the Minister for Forestry and Fisheries.

The FHPA is proposed to be established for:

- (i) the conservation and protection of fish*, fish breeding areas, fish fossils or the aquatic ecosystem; and
- (ii) the management of fish and activities relating to the appreciation or observation of fish.

**The Fish Resources Management Act 1994 (FRMA) defines FISH as an aquatic organism of any species (dead or alive) except for the higher vertebrates and includes parts of an organism, such as a shell. Under this broad definition, all the biological components of the [Cottesloe] aquatic ecosystem with the exception of birds, mammals, reptiles and amphibians, are defined as fish. This includes the reefs themselves' (Fisheries Management Paper No 117, 1998:49)*

In Western Australian waters, all whales, birds and reptiles are fully protected under the *Wildlife Conservation Act (1950)*, which is administered by the Department of Conservation and Land Management.

This revised Draft Plan of Management contains:

- A description of the proposed FHPA.
- The environmental, heritage, recreational, research and education values of the area.
- An identification of current and potential threats to the area.
- Proposed management options.
- An indication of community involvement in the management of the area.
- A summary of implementation strategies.

3.0 DESCRIPTION OF SITE

It is proposed to include the following area within a Fish Habitat Protection Area:

The coastal waters of the Indian Ocean covering the Cottesloe reef system from North Street to the southern boundary of the Town of Mosman Park, and westwards approximately 800 metres from high water mark.

4.0 DESCRIPTION OF USERS

The Cottesloe reef system has a number of stakeholder groups including the general public, school and university groups, and recreational divers and other fishing groups. The area is visited by an increasing number of tourists from within Western Australia, Australia and overseas.

5.0 VALUES OF AREA

The Cottesloe Reef is characterised by limestone pinnacles, elevated platforms and water-eroded limestone outcrops. The proposed FHPA also includes areas of sea-grass and kelp beds. The reef habitat and resident marine community in the Cottesloe Reef area are similar to those represented within the Marmion Marine Park and the Shoalwater Islands Marine Park.

The Cottesloe Reef ecosystem is not a unique reef ecosystem, but is highly valued by the local and wider community largely because of its location close to a highly populated urban area. This allows for the reef system to be accessed easily by a large number of people.

The significance of the reef system to members of the public was highlighted during the public consultation process.

5.1 Environmental Values

The Cottesloe reef system contains a diverse range of marine communities that represent a variety of marine habitats. These habitats include sand, sand with seagrass, reef with large kelps, reef with macro-algae, sponge beds and garden bottoms. Each of these habitats provides for many different types of invertebrates, fish and other aquatic organisms.

More specifically, the area provides habitat and breeding sites for the weedy seadragon, and is a nursery area for Port Jackson sharks (*Heterodontus portusjacksoni*). It is also a squid habitat and breeding ground.

The diversity of this living reef ecosystem in close proximity to a large urban population is significant and has been recognised by the community as worthy of protection during public workshops facilitated by Fisheries WA.

5.2 Heritage Values

The Cottesloe reef system has value to both European and Aboriginal people.

5.2.1 European Heritage

The wreck of the barque *Elizabeth* (1830-1839) is located on the Reef at South Cottesloe (32°00.8'S, 115°44.9'E).

The presence of submarine cables at the southern edge of the Cottesloe reef system is also of heritage significance. They were installed in 1926, and once linked WA to South Africa via the Cocos Islands. The cables provide a historical reminder of Australia's previous international communication links with the world. The site from where the cables were laid is still commonly referred to as referred to as 'Cable Station'.

5.2.2 Aboriginal Heritage

The value of the Cottesloe reef system to Aboriginal people is significant.

Fisheries WA recognise the need to conduct an anthropological assessment of the Aboriginal heritage values of the site. This assessment should include consultation with Aboriginal people with traditional associations with the area.

5.3 Recreational Values

The Cottesloe reef system and its waters are highly popular for a variety of recreational activities including surfing, body boarding, windsurfing, swimming, paddle skiing, line fishing, spear fishing, snorkelling and scuba diving.

Cottesloe Beach is a well-recognised tourism attraction. Its scenic beauty and popularity continue to attract increasing numbers of visitors – local, interstate and international – to the area.

The Cottesloe reef system has the potential to become an attractive eco-tourist destination, especially if the area is declared a FHPA and the marine ecosystem is permitted to regenerate where it has been disturbed through past human disturbance.

5.4 Education and Research Values

The educational and research values of the Cottesloe reef system include:

- The opportunity for school groups, universities and the general public to observe 'first hand' the diverse marine ecosystem on and near the reef, in close proximity to the Perth urban area.
- The presence of a representative assemblage of predominantly temperate marine flora and fauna in close proximity to the urban area provides an excellent opportunity for research into the reef system relatively cheaply.

Establishment of the proposed FHPA may also encourage community groups and possibly schools, universities and other institutions to participate in on-going research of the reef, which may engender further community awareness and protection of the reef.

6.0 Current and Potential Threats

6.1 Recreational fishing

Due to the easy accessibility of the Cottesloe reef from the shoreline and its proximity to populated urban areas, the reef area and nearby beach are heavily used throughout the year, most particularly during the summer months. The cumulative impact of activities such as spear fishing has resulted in the depletion of resident reef fish stocks in the vicinity of the reef.

There is a high degree of community concern that continued spear fishing may further deplete the remaining reef fish stocks. This concern was raised during the Public Workshops coordinated by the CMPG and in public submissions received on the Draft Management Plan. Due to the depletion of the larger edible fish species, spear fishers are known to target small (and often inedible) fish and octopus.

Damage from boat anchors is also considered to present a threat to the integrity of the reef and a source of disturbance to its marine organisms.

6.2 Collecting

Removal of marine creatures and habitat for aquarium and other purposes can also upset the balance of the reef ecosystem.

6.3 Near-shore Marine Water Quality

Extensive algal blooms of *Cladophora* carpet much of the inshore reef and seagrass areas in summer and autumn. Algal blooms can be symptomatic of nutrient enriched conditions, which are heightened during these seasons.

Nutrient-rich stormwater outflow from 14 stormwater outlets located along the Cottesloe beachfront, in combination with other cumulative low-level impacts from polluted groundwater, is thought to contribute to seasonal algal blooms. Seasonal discharge from the Swan River, and the Water Corporation's Swanbourne sewerage outfall area also likely to contribute to nutrient enrichment of the near-shore marine water in the vicinity of the Cottesloe reef system.

6.4 Foreshore erosion

The discharge of stormwater in large quantities after heavy rainfall can cause localised erosion of the beach and coastline. As has already been noted, there are 14 stormwater outlets located along the Cottesloe beachfront.

7.0 Management Strategies

The following management strategies for the proposed Cottesloe FHPA are listed to meet the requirements of Section 117 of the *Fish Resources Management Act 1994*.

A number of these strategies have been formulated in response to issues raised during the public meetings and workshops carried out with regard to the proposed Cottesloe FHPA, and in submissions received on the associated Draft Management Plan.

7.1 Professional fishing and aquaculture

There are limited opportunities for commercial fishing and aquaculture within the proposed FHPA because of existing commercial fishing closures and current levels of recreational activity. The waters of the proposed FHPA are adjacent to one of Perth's most popular metropolitan beaches, and are intensively used by casual swimmers, paddlers, and divers. In addition, the area is used for activities such as surf carnivals and ocean swimming competitions.

Recommendations:

- *Prohibit professional fishing within the proposed FHPA.*
- *Prohibit the commercial collection of marine flora and fauna and/or habitat.*
- *Prohibit the collection of live shellfish, aquarium specimens and macroalgae.*
- *Prohibit aquaculture within or in close proximity to the proposed FHPA.*

7.2 Recreational fishing

A major, independent review of the current fisheries management framework for the state of WA is currently underway. This review is in response to a need to develop an integrated framework to counter increasing pressure on fish stocks from the impact of a growing population, increasing coastal development and the demands of various key user groups, in areas such as Cottesloe.

An Independent Review Committee, chaired by Justice Toohey (commonly referred to as the ‘Toohey Review’), has been established to receive public input and provide an expertise-based report on an integrated framework for fisheries management. The committee is expected to report to the Minister for Forestry and Fisheries in late 2001.

Recommendation:

- *Incorporate recommendations of Toohey review, in relation to recreational fishing in the vicinity of the proposed Cottesloe FHPA, within the final Management Plan for the proposed Cottesloe FHPA.*

7.2.1 Line fishing, netting and potting

Recreational wet line fishing from the beach, Cottesloe groyne and boats is common in the vicinity of the proposed Cottesloe FHPA, and is enjoyed by a large number of people. The collection of abalone and rock lobster is also popular in season.

A large number of submissions expressed the view that an overall ban of wetline fishing should be put in place within the proposed FHPA, to ensure that reef fish remain abundant around the reef.

Staff of Fisheries WA point out that fish caught in the area through line fishing are likely to be pelagic species which move opportunistically through the area in schools, rather than residing permanently in the reef area. It is therefore unlikely that continued line fishing will have a detrimental impact on the reef ecosystem.

Recommendations:

- *Continue to permit recreational line fishing from the beach, groynes and boats.*
- *Continue to allow the harvesting of Abalone and Rock lobster in season, subject to existing regulations to ensure long-term sustainability.*

- *Prohibit net fishing.*
- *Prohibit shark fishing by any means.*
- *Prohibit the use of blood or offal for the purpose of attracting marine life.*
- *Prohibit the cleaning of fish and the leaving of offal or bait.*
- *Prohibit the removal of rocks and associated organisms.*

7.2.2 Recreational boating and use of jet skis

During the public consultation process there was a high level of support for the prohibition of the use of personal powered water craft (jet-skis) within the proposed FHPA. Fisheries WA supports the recommendation to ban jet skis.

Fisheries WA will work with the Department of Transport, Town of Cottesloe and the CMPG to find the best solution so that the control of jet ski activity can be achieved.

The use of dinghies in the area is unlikely to create a potential water quality problem if boats are maintained adequately. However, there is a potential risk of damage to the reef system by anchors. This could be managed through the prohibition of anchoring, and the installation of environmentally-friendly boat moorings.

Recommendations:

- *Prohibit the anchoring of sail and motor craft within the (proposed) FHPA.*
- *Prohibit the discharge of sullage and other waste materials from boats within or in close proximity to the (proposed) FHPA.*
- *Prohibit the use of jet skis in the (proposed) FHPA.*
- *Seek funding to install environmentally sensitive public boat moorings and encourage their use by the boating public.*

7.2.3 Spearfishing (underwater fishing)

One of the main objectives of the revised Draft Plan of Management is to maximise the opportunity for viewing the Cottesloe reef ecosystem, and to use the area for 'non-extractive' purposes.

Spearfishing has been a popular activity in past years, but spearfishing does present a risk to other users, and resident reef fish species can be targeted. The use of spear guns, gidgees, Hawaiian sling or 'other like device' is prohibited under existing Town of Cottesloe 'Beach and Beach Reserves Local Law No.3' (April 1999).

Recommendations:

- *Prohibit all forms of spearfishing within the (proposed) FHPA pursuant to the Fish Resources Management Act (1994).*

- *Prohibit any speared fish caught outside the (proposed) FHPA being brought ashore within it.*

7.2.4 Collecting

The purpose of establishing a FHPA is to conserve and protect fish, fish breeding areas, fish fossils and the overall aquatic ecosystem. It is therefore important that all parts of the reef ecosystem remain 'in-situ', to ensure the long-term sustainability of a healthy reef ecosystem. Rocks, sea-weed and other marine organisms are an integral part of this ecosystem.

Recommendations:

- *Prohibit the collection or destruction of flora and fauna and/or habitat within the (proposed) FHPA (including for research and monitoring purposes) with the exception of the recreational collection of abalone and crayfish in season as defined under the Fisheries Resource Management Act 1994.*
- *Prohibit the removal of rocks and associated organisms within the (proposed) FHPA.*

7.3 Snorkelling and scuba diving

The majority of submissions expressed support in principle for the use of the area as a 'passive' recreation area for the observation of fish and other marine organisms, through diving.

Scuba diving and snorkelling are regular major activities in the vicinity, which are consistent with the objectives of a FHPA and should be encouraged.

Recommendations:

- *Promote snorkelling and scuba diving as non-extractive recreational activities. This should include information about dive locations, and diving regulations.*
- *Promote fish counting, fish identification, habitat mapping and monitoring as non-extractive recreational activities, to promote public awareness and education of the reef ecosystem.*
- *Promote underwater photography as a non-extractive recreational activity.*

7.4 Ecotourism

Ecotourism is a non-extractive, nature-based method of tourism, to promote visitation to areas with recognised ecological values. Ecotourism ventures are considered to be a useful way to promote public awareness and education about environmental values, and at the same time provide a financial income to tour operators.

Recommendations:

- *Prepare policies and operating guidelines for environmentally sensitive and controlled ecotourism ventures.*
- *Develop application guidelines and performance criteria for ecotourism ventures.*

7.5 Stormwater, groundwater and nutrient management

Water quality within the near-shore marine environment is affected by nutrients from stormwater and groundwater discharge from the urban catchment adjacent to Cottesloe beach. Nitrogen in particular is known to contribute to macroalgal growth in marine communities. A major source of nutrients within the catchment is excessive fertiliser use on gardens, parks and public open space (Dr. S. Appleyard, pers. Com.).

The management of diffuse sources of nutrient pollution is obviously difficult, as it involves numerous groups and individuals working in partnership with local government and State government agencies to tackle the problems through an Integrated Catchment Management (ICM) approach. ICM measures are used in other urban areas within Perth to manage water quality problems, for example discharge into the Swan River.

Community awareness and education programs need to continue to maintain the local community's awareness of existing nutrient management problems and the need to alter current practices. One such program is entitled '*The Sea Begins in Our Streets and Gardens*' and is coordinated by the CPMG, Fisheries WA, the Waters and Rivers Commission and the Town of Cottesloe.

Stormwater discharge from the urban catchment is also another significant source of nutrients into the near-shore marine environment. The adoption of improved design principles which include water infiltration 'at source' (for example, through the use of permeable paving and soak wells) and incorporation of 'nutrient traps' may help reduce nutrient discharge.

Recommendations:

- *Develop and implement, in cooperation with relevant government agencies and schools, a long-term water quality monitoring programme of the Cottesloe marine environment.*
- *Continue community education programs, such as 'The Sea Begins in Our Streets and Gardens' campaign, to increase public awareness of the potentially destructive effects on the marine environment of high nitrate and phosphate fertilizers, detergents and other household and garden chemicals used in the coastal catchment.*
- *Encourage the Town of Cottesloe to install stormwater nutrient-stripping and calming devices.*
- *Continue to promote the use of low nutrient turf and grass within the Town of Cottesloe, in consultation with the Water Corporation, Water and Rivers Commission and the Department of Environmental Protection.*

- *Discourage, through public education, the disposal of potentially harmful substances into stormwater drains that could be discharged into the marine environment.*

7.6 Information, Interpretation and Management

A primary objective of this Draft Plan of Management is to raise public awareness, appreciation and understanding of the biodiversity and conservation values of the proposed Cottesloe FHPA, and to promote community stewardship and management of it.

An understanding of the Aboriginal heritage values of the area should be encouraged. This information is required to ensure that management and interpretation programs are consistent with these values.

Fisheries WA recognise that the management of the proposed FHPA will primarily be through the community. It is anticipated that the CMPG, in cooperation with the Town of Cottesloe, will have a vital role in the co-ordination of management strategies for the proposed FHPA, with support from key local and State Government agencies where appropriate.

An example of community stewardship is the fish identification signs that have been installed at strategic locations along the Cottesloe foreshore by the CMPG and Fisheries WA. These signs draw to public attention the need to protect and care for the reefs and coastal waters. The signs illustrate the more common fish species found on the reefs, and are highly popular with snorkellers, tourists, school study groups and general beach users.

Recommendations:

- *Continue to provide and coordinate interpretive exhibits and photographic displays at educational and environmental facilities which promote the protection of the Cottesloe coastal waters, biodiversity, habitat and reef ecosystems and marine water quality.*
- *Continue to encourage the Volunteer Community Reefwatchers' training program.*
- *Conduct an anthropological assessment of the Aboriginal heritage values of the site, including consultation with Aboriginal people with traditional associations to the area.*

7.7 Research and Monitoring

In encouraging use of the proposed FHPA, it is recognised that increased usage may put additional pressure on the fragile reef ecosystem. It is therefore vital to ensure that there is appropriate baseline monitoring of the marine ecosystem. Coordinated on-going monitoring programs can then be initiated to compare data over a period of time.

It is also important to monitor recreational activities within the area, and so identify which parts of it are under the greatest user pressure. This information can be used in determining management strategies and to enable the preparation of effective and integrated monitoring and management programs.

Recommendations:

- *Continue the habitat mapping surveys of the Cottesloe reef system and to promote scientific research and community monitoring to develop an understanding and appreciation of the Cottesloe reef ecosystem.*
- *Trial community monitoring methods including those developed by the Australian Marine Conservation Society (AMCS) in cooperation with the Department of Conservation and Land Management (CALM) as part of Phase III of 'The Marine Life of Western Australia' program.*
- *Continue scientific research and monitoring of specific molluscs, echinoderms and crustaceans in cooperation with CMPG and CALM south of the Cottesloe main groyne, especially at Mudurup Rocks where there is an apparent depletion of adult turbo shells and sea urchins.*
- *Monitor intensity of diving in the (proposed) FHPA and any effect divers may be having on the marine environment*

8.0 COMMUNITY INVOLVEMENT IN MANAGEMENT

Under the provisions of the *Fish Resources and Management Act 1994*, the declaration of a FHPA requires that there be a demonstrated degree of community involvement in the management of the area.

The CMPG has already initiated strong community involvement in the protection of the Cottesloe reef system, through the Volunteer Community Reefwatchers' training program. This program highlights the habitat and natural heritage value of the Cottesloe coast and reef system and will promote public education of proposed FHPA management measures.

The CMPG community education campaign has been successful in raising levels of awareness of the reef system and developing within the community a sense of conservational stewardship of the Cottesloe reef system.

The CMPG has also affiliated with the South Cottesloe Coastcare Association Inc. to combine volunteer resources to enable an effective joint management program of Cottesloe's marine and coastal resources.

9.0. IMPLEMENTATION

This revised Draft Plan of Management has been prepared following the consideration of submissions received on an earlier draft management plan prepared by the CMPG.

Following a thirty-day statutory public review period, a final plan will be forwarded to the Minister for Forestry and Fisheries with a recommendation that the Cottesloe reef system, as identified in Figure 1 and described in Section 3 of this document, be proclaimed as a FHPA.

The final plan will contain a management strategy for the future management of the proposed FHPA. It will be the responsibility of Fisheries WA, in consultation with community groups, to coordinate the implementation program, and report to the community on progress each year.

The final plan will be subject to review in 2010.

Proposed Cottesloe Reef Fish Habitat Protection Area

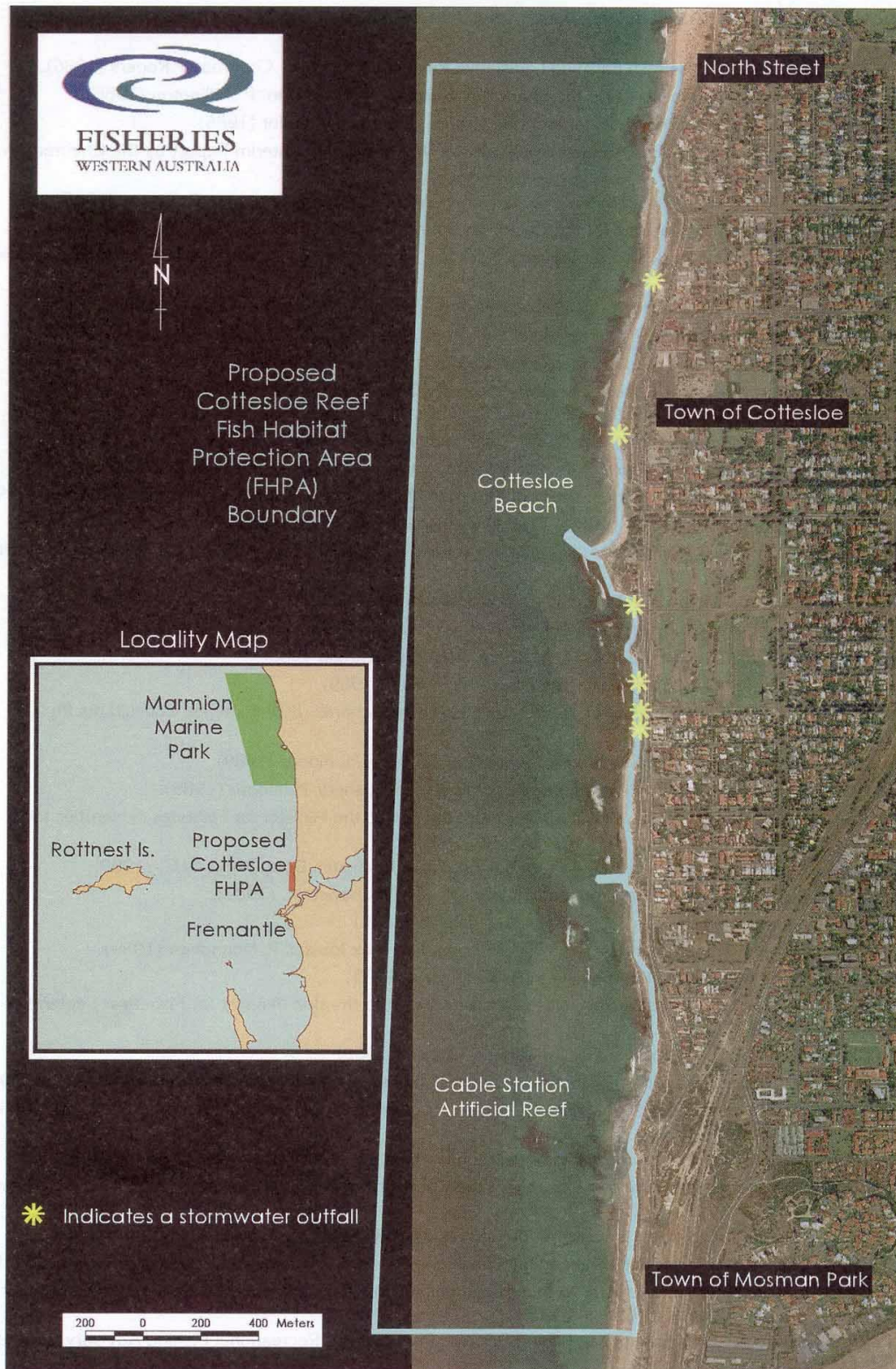


Figure prepared by FWA GIS.
Aerial photo mosaic courtesy DOLA Geographic Services Branch
Stormwater drain locations courtesy Helen Gouloff & Town of Cottesloe Works Dept.