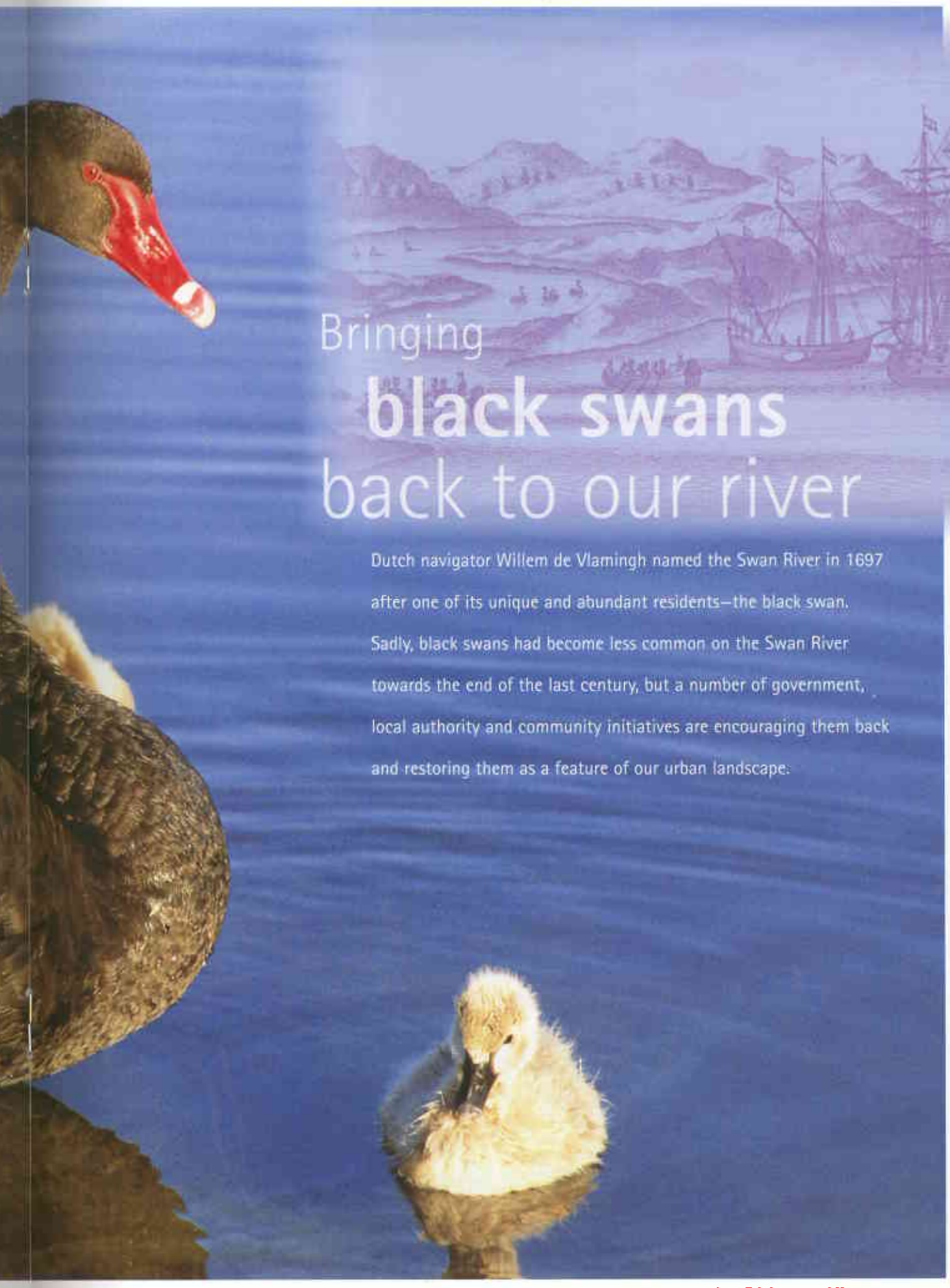


Bringing **black swans** back to our river

Dutch navigator Willem de Vlamingh named the Swan River in 1697 after one of its unique and abundant residents—the black swan. Sadly, black swans had become less common on the Swan River towards the end of the last century, but a number of government, local authority and community initiatives are encouraging them back and restoring them as a feature of our urban landscape.

by Rhianna King

Black swans (*Cygnus atratus*) are visible in much of Perth's urban landscape. Nowadays, they can be seen on a number of suburban wetlands and increasingly on the Swan River, while many government and city offices, businesses, universities, landmarks, taxies and even a theatre company carry the black swan image as their badge. Swan Brewery, an iconic Western Australian company, carries a picture of a black swan on its labels with the words 'The spirit of Western Australia'. It's open to interpretation as to whether the slogan refers to the swans or the liquid amber! The black swan is so synonymous with the identity of Western Australia that it is the State's bird emblem.

From ugly 'ducklings' to beautiful swans

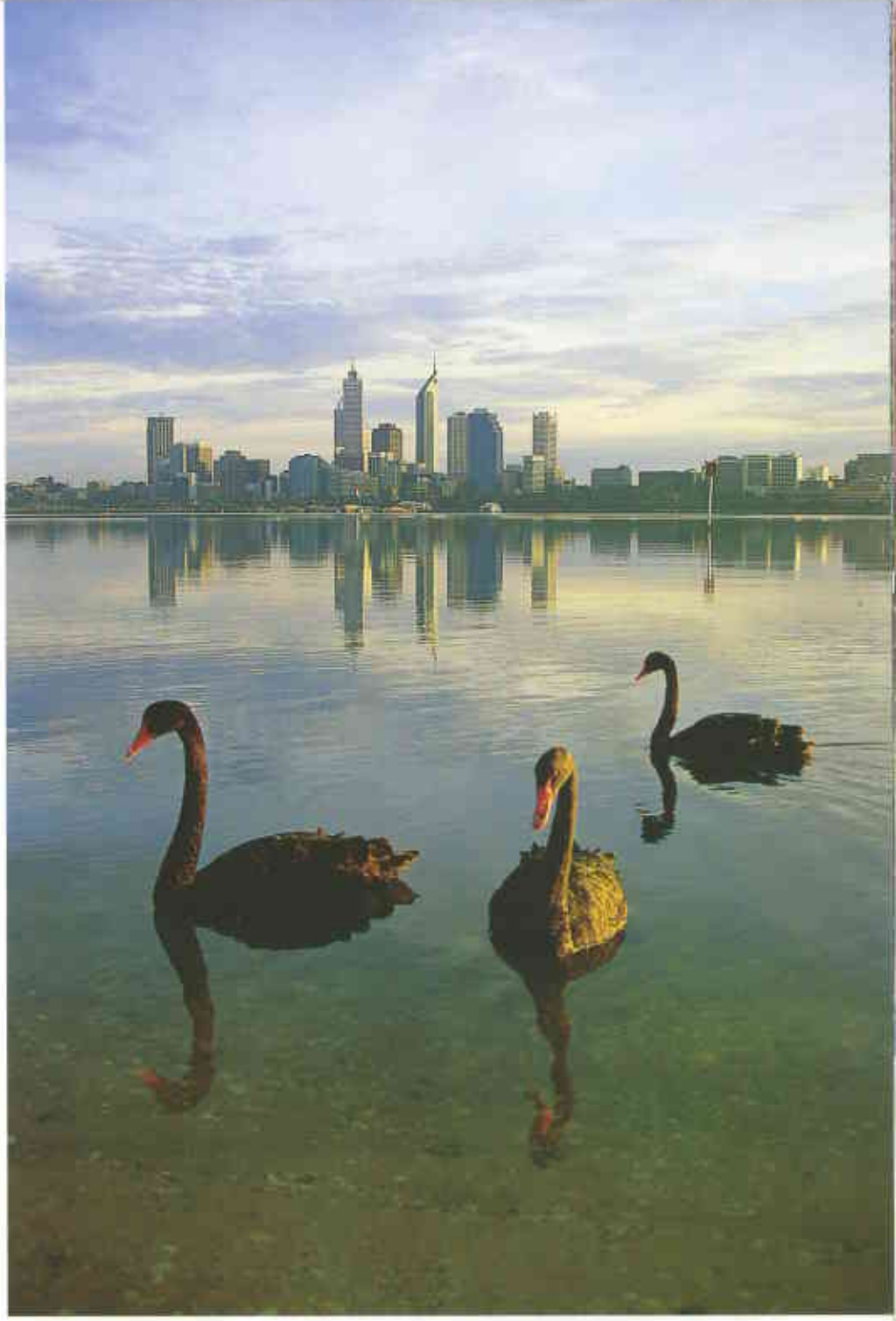
Black swan cygnets, with their light grey down, are anything but ugly. In fact, they are a beloved sight on metropolitan waterways when they emerge towards the end of winter, signifying that spring is around the corner. Cygnets develop light brown feathers after three or four weeks, and continue to get feathers until fledging. At around two months, their bills change colour from dark grey to black, to that of adults, which varies from orange to dark red with a white bar near the off-white, horny tip. Their eye colour also changes from grey to light brown as cygnets, to white and then red during the mating season.

Previous page
Main Black swans and their cygnets are WA's iconic bird species.
Photo – Jay Sarson/Lochman Transparencies
Inset Sketch of Vlamingh's three vessels lying at anchor on the mouth of the Swan River, with two smaller vessels about to enter the river where swans are abundant.
Image – Reproduced from the original with permission from Rare Book and Special Collections Library, University of Sydney.

Left A black swan with its cygnet.
Photo – Rhianna King

Below Black swans pair for life and both tend to their cygnets.
Photo – Michael James/DEC

Black swans are ready to breed at 18 months and most do so before they are four years old. Often, they select a temporary mate when they first reach sexual maturity but then find one they stay with for life and, like other swans,



Right Black swans on Perth's Swan River. *Photo – Andrew Davoll/Lochman Transparencies*

primarily remain monogamous. Black swans lay between two and nine eggs, during July and August, in nests that vary from a simple ring of plant matter to a large mound. After an incubation period of around 40 days, the cygnets hatch and take to the water shortly after.

In captivity, swans can live for up to 20 years. Their life expectancy is less in the wild where they are at risk of poisoning through pollution, botulism, fungal infections, parasites and worms, predation by foxes and birds of prey, and accidental death.

Early accounts

Black swans have a special place in Western Australian culture that dates back to long before the arrival of Europeans. In the Aboriginal Dreamtime, the totem (representative animal) of the Derbal Yerrigan (Swan River) clan is the 'Moorn Maarli', or the black swan, because a part of the river is understood to be shaped like one. Indigenous people also revere black swans because they are 'moort', or family orientated, like themselves. The black swan is also a totem bird for the Bibbulmun Nyoongar people who are responsible for conserving and protecting the totems.

Dutchman Willem de Vlamingh ventured up the Swan River in 1697. Vlamingh observed many fish and birds on the river, particularly black swans. Even though, more than 60 years earlier, fellow countryman Antonie Caen had described black swans on a visit to Shark Bay, many Europeans did not believe black swans existed. We now know there are seven species of swan, of which only the Australian black swan and the South American black-necked swan are black.

The former abundance of black swans on the river is clear from the accounts of explorers such as Captain James Stirling, who in 1827 marvelled at the hundreds of black swans on the Swan River, and NSW Colonial Botanist Charles Frazer who, in the same year, wrote that:

> 'The quantity of black swans, pelicans, ducks, and aquatic birds seen on the river was truly astonishing. Without any exaggeration, I have seen a number of black swans which could not be estimated at less than 500 rise at once, exhibiting a spectacle which, if the size and colour of the birds is taken into account, and the noise and rustling occasioned by the flapping of their wings previous to their rising, is quite unique in its kind. We frequently had 12 to 15 of them in the boats, and the crews thought nothing of devouring eight roasted swans in a day'.

It seems that in the early days of European settlement black swans were at risk of becoming a feature of the evening menu. But significant changes to the wetlands and rivers of the urban landscape, and the human activities they supported, most likely led to the decrease in the number of black swans, particularly on the Swan River, over the last century.

Widespread nomads

Black swans are nomadic and capable of moving long distances. They occur in every Australian state and territory and can be found throughout much of the country's south-east and south-west, to as far north along the eastern coast as Townsville in Queensland. In WA, black swans are found throughout the south-west and the Goldfields, as

well as in parts of the mid-west, Pilbara and Kimberley in varying frequencies and usually only when lakes in the area contain water. They are also known from salt lakes and coastal areas. They can even be found in large puddles or ponds on agricultural properties in the southern Swan Coastal Plain after heavy rains—often an unexpected sight. Between September and February black swans moult, rendering them flightless, and during this time they often gather on open lakes.

While it has been significantly modified since European settlement, the wetland system of the Swan Coastal Plain (including what is now the Perth metropolitan area) remains an important habitat for many waterbirds, including black swans. Black swans often nest inland on natural and artificial lakes and waterways and, despite having become an icon of the Swan River, seem to mainly occur on it when they are associated with adjacent wetlands. In the Perth metropolitan area they commonly occur on Lake Monger, Thomsons Lake, Bibra Lake, Forrestdale Lake, Herdsman Lake, Lake Cooloongup, Big Carine Swamp, Lake Kogolup, Gibb Road Swamp and Lake Yangebup.

The availability of food and suitable nesting sites are the primary factors of black swan habitats. While they occur on fresh and saline lakes, swamps, rivers and estuaries and at sea, black swans must drink relatively fresh water each day so they need access, within flying distance, to fresh water sources. They also need access to floating and submerged aquatic plants such as paddleweed seagrasses, pondweeds, introduced water-couch grass and young bulrush shoots, as well as other rushes and sedges for food. The lawns surrounding the lakes inhabited by black swans in metropolitan areas also play a role in their diets.

Top left Black swans seek habitats with suitable nesting sites.
Photo – Stuart Miller/Lochman Transparencies

Above left A pair of black swans 'duck diving' for food.

Left Lawns surrounding lakes play a role in the diet of black swans.
Photos – Rhianna King

Right Black swans.
Photo – Jiri Lochman

Black swans nest in colonies and as individual pairs, often in the same place each year. They create their nests in areas surrounded by water with protection from flooding and, nowadays, also from people and their activities, domestic pets and other animals. Black swans will only nest at locations where the water is at least 30 centimetres deep and where suitable materials—including reeds, samphires, aquatic plants, sticks and bark—are available for nest construction.

Swan's lakes

In recent years studies have been undertaken to determine the reasons for the decrease in black swans on the Swan River. These studies have been undertaken by State government agencies, local authorities and community groups, often in an attempt to find ways to reverse the decline.

Years of lower rainfall and subsequent drying of smaller wetlands; changes to the river ecosystem through modified salinity as a result of dredging; modifications within the catchment area and pollution in the river affecting food sources have all been suggested as reasons for the decline in black swans. While these may well be contributing factors, a feasibility study conducted in 2000, by what was then the Water and Rivers Commission as part of a 'Bringing back the swans' project, concluded that the loss of shallow reef habitats—used by swans for nesting—due to land reclamation and urban development, and the availability of numerous wetlands in the Perth metropolitan area, were the most likely reasons for the absence of black swans from the Swan River. It also concluded that, if black swan habitats were restored and constructed, the birds would return to these sites. As a bonus, the areas would also appeal to other waterbirds that may have also left the Swan River due to loss of habitat.

The report identified a number of options to improve black swan habitats on the Swan River including creating permanent islands, creating embayments within the river, constructing wetlands, enhancing existing wetlands and improving existing features. In varying forms, these recommendations have been incorporated into a range of community and government-based projects.

A community effort

The 'Bringing back the swans' project has provided a basis for a number of projects designed to conserve and create habitats for black swans on the Swan River. It also highlighted the important role of local authorities and other stakeholders in getting such projects off the ground.

The development of Point Fraser, a recreational reserve adjacent to Riverside Drive not far from the northern end of the Causeway, is one such project. This area was reclaimed from the Swan River during the first half of last century. The redevelopment, in two stages, aimed to restore the riverine landscape that existed prior to European settlement; improve the health of the aquatic ecosystems through habitat restoration and best-practice stormwater management; interpret the natural, historic and cultural values and provide for passive recreation. A specification of the design brief was to create suitable habitat for black swans and other waterbirds. Stage 1 was completed in March 2004. Subsequent

Above Black swans in flight.
Photo – Dennis Sarson/Lochman Transparencies

Below Black swans are becoming a feature of Perth's urban landscape again.
Photo – Rhianna King

monitoring has shown that waterbirds are returning to the area.

The City of South Perth encompasses Sir James Mitchell Park, a high-profile area alongside the Swan River. A number of lakes within the park receive water from one of the City of South Perth's major stormwater drains and have been landscaped and designed for recreational use. With the Sir James Mitchell Park community working group, the City of South Perth is developing a plan to rehabilitate the beaches in the park and improve the quality of the lakes to encourage black swans to visit. The plan is expected to be completed by the end of the 2006–2007 financial year.

The 'Bringing back the swans' project also aims to ensure that planning of incidental foreshore redevelopment projects accommodate, and encourage, black swans. Other local authorities, such as the Town of Victoria Park, have long-term redevelopment plans that include considerations for black swan habitat. As with many projects of this nature, lack of funding is proving to be an obstacle. However, sponsorship and grants are being sought from a range of sources.

A far cry from a swan song

Black swans have not fared well since European settlement but remain an icon of the State. While anecdotal evidence suggests that the number of black swans found on the Swan River has increased in the past few years we still have a long way to go to redevelop and conserve their important habitats. Fortunately, the government and community projects working towards building a healthier and more swan-friendly environment are already showing signs of success.

The Swan Estuary Marine Park

Today the Swan River is a highly altered environment with relatively little of its original fringing vegetation. However, three important reserves at Alfred Cove, Pelican Point and Milyu are protected for their conservation value as part of the Swan Estuary Marine Park and adjacent nature reserves. The marine park was declared in 1990 and consists of 190 hectares at Alfred Cove adjacent to the suburbs of Attadale and Applecross; a 40-hectare area at Pelican Point in Crawley and 95 hectares at Milyu adjacent to the Como foreshore and Kwinana Freeway.

These areas encompass mudflats, seagrass beds and intertidal vegetation such as sedges and saltmarsh, which provide many different habitats for a number of animals. They are particularly important for a number of species of internationally protected transequatorial migratory wading birds, which are protected under the Japan–Australia and China–Australia Migratory Bird Agreements.

The marine park also plays an important educational role because of its close proximity to the Perth metropolitan area. It offers opportunities for birdwatching, fishing, windsurfing and boating and is a popular place to walk and cycle.

More information about the Swan Estuary Marine Park and its adjacent nature reserves can be found in the full-colour, pocket-sized book *Discovering the Swan River and the Swan Estuary Marine Park*, which is available for $6.50 from Department of Environment and Conservation offices, online at www.naturebase.net and from bookshops and newsagents.

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Volume 22 Number 2 SUMMER 2006–2007

contents

Regulars

Publishing credits
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Phone (08) 9334 0481 or (08) 9334 0437.
Prepress and printing Advance Press, Western Australia.
© ISSN 0815 4465

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Visit NatureBase at www.naturebase.net

Published by the Department of Environment and Conservation, 17 Dick Perry Avenue, Kensington, Western Australia.

Department of Environment and Conservation