

## 7

## Coastal and Marine Resources

## Coasts and the Sea



## Coastal and Marine Resources Issues



South Australia's unique marine habitats and species diversity creates tourism and recreational opportunities in diving, boating and marine sightseeing along some of the state's beaches. South Australia offers divers clean, uncrowded, temperate waters which are among the most biologically diverse in the world and dive experiences can include diving with giant cuttlefish off the coast of Whyalla and the rare leafy seadragon off Kangaroo Island.

The estuarine, coastal and marine environments also support large commercial industries such as aquaculture, fisheries and the emerging industries of bioprospecting and offshore exploration. Aquaculture is the commercial growing of marine and freshwater animals and plants for trade, business or research. South Australia's aquaculture industry is important to the state's economy and in 2005/06 the Gross State Product was valued at \$265.1 million.

Commercial and recreational fishing industries rely on healthy habitats and well managed resources as does the tourism sector. Coastal and marine environments can be degraded by poor water quality, over exploitation, pollution, introduced pest species and unsustainable development.

**“ Coastal environments are extremely sensitive systems that are easily impacted by development. ”**

## Trends



Most of South Australia's fisheries are fully fished (at their upper sustainable limit) with some fisheries considered **over-fished**.



The number of South Australia's fisheries that are fully fished is **increasing**.



The number of South Australia's fisheries that are **over-fished or depleted** is **stable**.



With an increase in global trade from South Australia, shipping traffic is **increasing**. This could increase the risk of marine pest transfers through ballast water.



Coastal areas being developed in South Australia are **increasing**.

## Coastal and Marine Resources

### What is the current coastal and marine resources situation?



#### Condition indicator

##### Fish stock status

South Australia has a range of strong and viable fishing industries, many of which are low in volume but high in value. Some of the fishing industries include: southern rock lobster, abalone, giant crab, and sardine. Commercial fishing for these species accounts for almost 70% of total value of the state's fisheries resources. Inland waters support the river fishery and the lakes and Coorong fishery, which target a number of native and non-native species. Inshore waters support the western king prawn, marine scalefish and blue crab fisheries.

Fish stock status combines biological parameters with available information on fishing activities to provide an indicator of the species and its fishery. Fisheries are classified as 'uncertain', 'under-fished', 'fully-fished', 'over-fished', or 'environmentally limited'. A fishery is classified as fully fished when the optimum sustainable limits have been reached and if fishing goes over this limit, then the fishery is classified as over-fished. Fish stocks can also decline due to environmental and habitat changes and in these cases the fisheries are classed as environmentally limited. In the 2004-05 season, 14 of the 21 commercial fisheries were fully-fished, while four remain over-fished or depleted and three are considered to be environmentally limited.

#### Pressure indicators

##### Length and area of coastal and estuarine foreshore altered for human purposes

South Australia has 4,000 kilometres of coastline, and these coastal areas vary from rocky shores and sandy beaches, to calm water mud flats, seagrasses

and mangrove habitats. Less than 10% of the coast has been developed for urban purposes but a range of non-urban developments have altered the coast. These include boating facilities, public access points, marinas, boat ramps and offshore aquaculture.

Coastal environments are extremely sensitive systems that are easily impacted by development. Coastal erosion, loss of habitat and increased pollution are key issues of concern with coastal development.

##### Fisheries effects on non-target species

Non-target species are animals or plants that are unintentionally taken or affected by a fishery. They are not the species that fisheries are trying to catch or farm. In South Australia these non-target species include birds, marine mammals, fish, sharks, crustaceans and molluscs. Currently there is insufficient information to determine the exact impact of fisheries on most of these species.

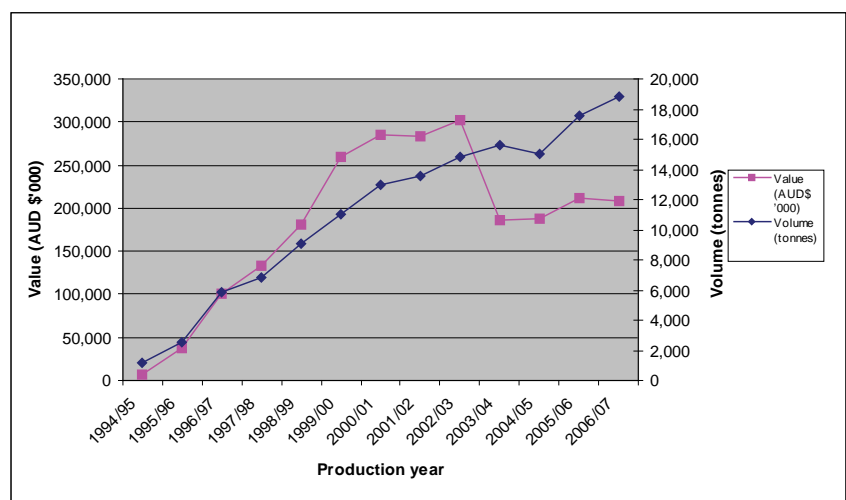
##### Shipping ballast water discharges in South Australian waters

Water is used to help stabilise many ships, particularly when they are not carrying much cargo. This is called ballast water and as cargo is loaded onto the ship the water is discharged. This water can contain pest species. Commercial shipping is one of the most common avenues for transportation of marine pests. Not all ballast water discharges are recorded and there are gaps in the monitoring for marine pests.

##### Coastal and offshore exploration and production

Mineral and petroleum exploration and production occur in State and Commonwealth waters and on the coast of South Australia. Offshore mining has the potential to affect ecological processes and biodiversity, depending on the nature of the operation. Seismic surveys can cause physical and behavioural effects on some species of marine mammals such as the humpback, blue and fin whales.

Annual aquaculture production in terms of value and volume



Source: PIRSA Aquaculture 2008

Coastal and Marine Resources



**What is the current coastal and marine resources situation?**

**Pressure indicators**

**Climate induced sea level rise and other impacts**

Sea level rise is almost certain to cause greater coastal inundation, erosion, loss of wetlands and saltwater intrusion into freshwater resources. This will impact on infrastructure, coastal resources and existing coastal management programs. Other predicted impacts from adverse climate change include storm surges, changes to currents and acidification. For more information see the Climate Change fact sheet.

**Recreational fishing**

Recreational fishing is now the largest participation sport in Australia, and in South Australia it is estimated that 328,000 people enjoy recreational fishing each year. It is easy to think when you are going fishing for fun, that what you catch will not make a big difference to the environment. In some cases, recreational fishers can take a greater proportion of the total fish catch for a particular species than commercial fishers!

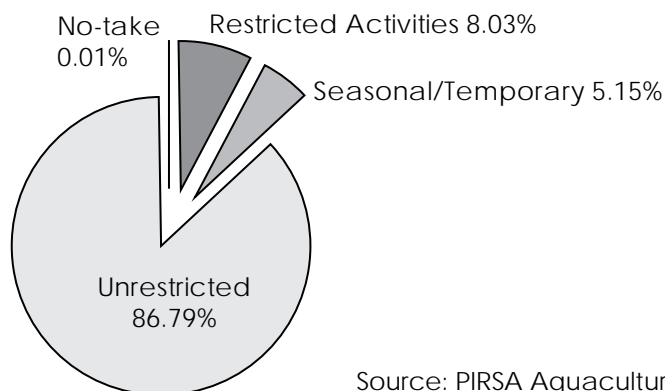
**Responding to coastal and marine resources**



The state government uses different strategies to manage fisheries and these can include seasonal and temporary closures as well as aquatic reserves. Aquatic reserves are areas of the ocean or estuaries where natural populations of marine species are protected from exploitation or harm. Generally, reserves are created as strict 'no-take' areas which means that extraction or harm of species is illegal, or as areas where some activities are restricted. In July 2006,

the Government of South Australia adopted the *Marine Planning Framework for South Australia* to guide the management of current and future activities in a way that maintains the integrity of our coastal, marine and estuarine environments.

**Areas subject to prohibition or fisheries restrictions in South Australian coastal waters (%)**



Source: PIRSA Aquaculture

**“ Aquatic reserves are areas of the ocean or estuaries where natural populations of marine species are protected from exploitation or harm. ”**

## Coastal and Marine Resources



### Taking Action for the Marine and Coastal Resources

- Make sure your recreational fishing is responsible!
- Find out about and obey the size, bag and boat limits for South Australia.

## Impacts of the coastal and marine resource degradation



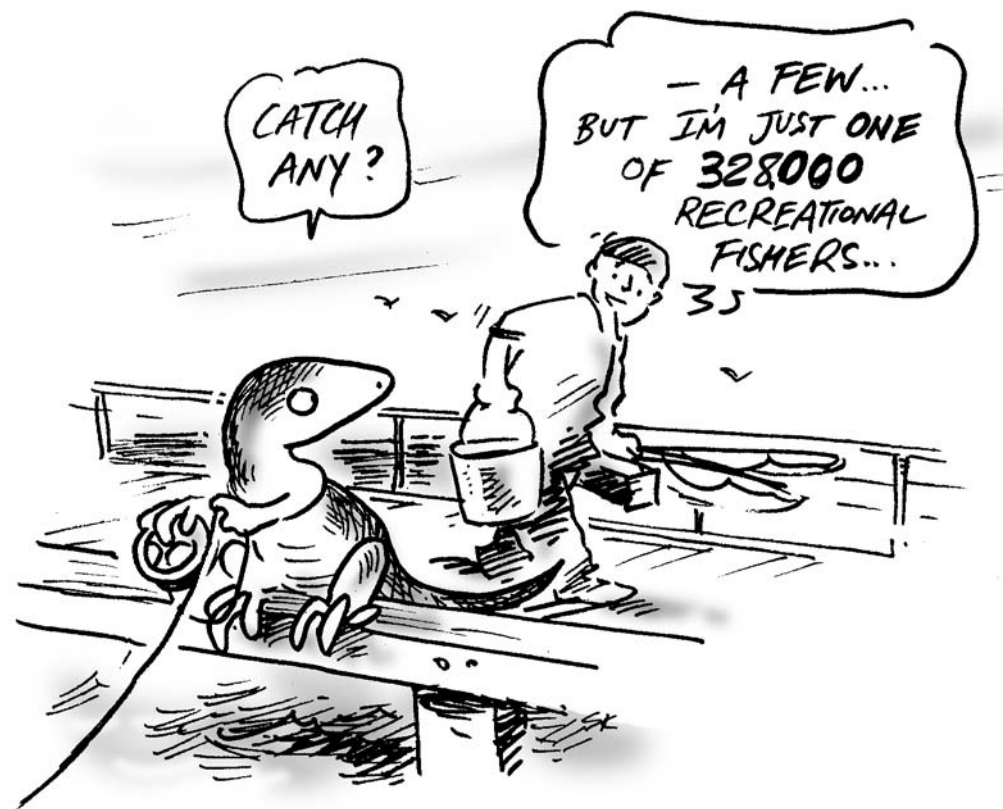
### Biodiversity

The species harvested from our coastal and marine resources each have a place within the ecology of the marine environment. With a decline in numbers or the extinction of species, biodiversity is reduced.

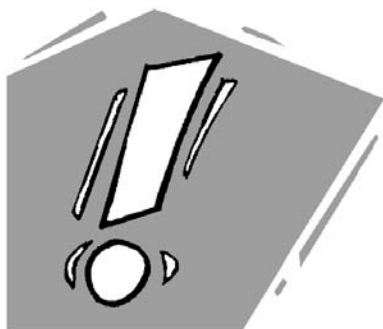


### Economic

The aquaculture and tourism industries are important for South Australia's economy. If our coastal and marine resources are not managed well, then the livelihoods of those who depend on these industries will be in danger.



## Coastal and Marine Resources



# Attention!!

## Giant Australian Cuttlefish

The mass spawning of the Giant Australian Cuttlefish can be found near Whyalla and it is recognised as one of the most spectacular natural events in Australian marine waters and unique in the world. Giant Australian Cuttlefish are short-lived (12–18 months) and the strength of one population critically depends on the strength and spawning (egg laying) success of the previous generation. If one generation is over exploited then a significant population decline would be expected in the following season.

Research by South Australian Research and Development Institute (SARDI) Aquatic Sciences indicates that this species is now under significant stress and the population is steadily decreasing. A cautious approach should be taken to any development in the breeding area, as research suggests that there is no input to this population from other Giant Australia Cuttlefish populations.





## Coastal and Marine Resources

# Research Ideas

## about Coastal and Marine Resources

- 1 What is meant by 'coastal and marine resources'?

---

- 2 How does the way we use our coastal and marine resources affect the environment?

---

- 3 How have human activities impacted on the coastal and marine resources in your community, South Australia, Australia and globally?

---

- 4 What does the State of the Environment report tell us about coastal and marine resource issues in South Australia?

---

- 5 What might happen in the future if things continue as they are?

---

- 6 What are government, business and industry doing to address coastal and marine resource issues?

---

- 7 What can we do individually, or in communities, to reduce our impact on coastal and marine resource?

---

### Resources

For more detailed information on the issue and actions you can take see the State of the Environment report for South Australia 2008.

This is available at:  
[www.epa.sa.gov.au/soe](http://www.epa.sa.gov.au/soe).



This fact sheet is part of a set of 20 fact sheets about the key environmental issues identified in the State of the Environment report 2008, produced for the Environment Reporting Education Resource. You can access the fact sheets and learn more about taking action for the environment at the Education Resource website: [www.epa.sa.gov.au/soe](http://www.epa.sa.gov.au/soe). For more information call the Environmental Education Unit of the Department for Environment and Heritage (08) 83463 3911.



Government of South Australia  
 Department for Environment  
 and Heritage

