



Sea lions bask on a sunny beach at Kangaroo Island.

## Concern surrounds the secret life of sea lions

**A** lack of knowledge about the habits and habitat of the Australian sea lion (*Neophoca cinerea*) is hampering efforts to conserve the species, according to a leading CSIRO scientist.

Data gathered by Dr Peter Shaughnessy of CSIRO Wildlife and Ecology and other scientists in the past decade has added considerably to our knowledge of sea lions (see *Understanding Australia's lion of the sea*, *Ecos* 90). But little is known about what the species eats and at what depth it feeds, despite the possible role such information could play in conservation efforts. Adding to the worry is evidence that the population has levelled off and may even be decreasing, Shaughnessy says.

The Australian sea lion occurs in the coastal waters of southern Australia. Its principal breeding colonies are on The Pages Islands, at Seal Bay on Kangaroo Island and at Dangerous Reef near Port Lincoln in South Australia, and there are more than 50 smaller breeding sites in Western Australia and elsewhere in SA.

Rangers with National Parks and Wildlife South Australia have monitored breeding at the Seal Bay colony for more than 20 years. These data show that the number of pups born has fluctuated, but there have been no clear trends either up

or down. Conversely, large pup mortalities were reported at other breeding colonies in 1996: 56% on The Pages Islands and 30% at Dangerous Reef. The cause or causes of these significant 'die-offs' are unknown, Shaughnessy says.

There are other elements to the mystery. While sea lion numbers have stagnated – with worrying pup mortality rates – the population of the species' cousin, the New Zealand fur seal, is climbing by a healthy 10% a year on Kangaroo Island.

'The real question one should ask is why the sea lions aren't increasing like the fur seals,' Shaughnessy says. 'Both of them were heavily harvested in the 1800s and early 1900s and their numbers were reduced, but while the fur seals are rebounding impressively, the sea lions are not.'

A number of factors could be implicated. Hookworm has been known to decimate fur seal populations in the Northern Hemisphere, and was found in one dead sea lion pup at The Pages Islands colony in 1997. Or environmental imbalances such as competition from the booming fur seal population could reduce the availability of food for lactating females.

There is also a possibility that sea lions are being accidentally caught and drowned

in fishing nets during feeding. 'We know that sea lions are active around some fisheries, and we suspect they're sometimes an unintended part of the catch,' Shaughnessy says.

This is one reason why knowledge of sea lion feeding habits could be crucial to their conservation. If we know the depth at which the sea lions feed, what they feed on and where they feed, a management plan might be developed so that the fishing industry and sea lions don't compete for the same resources at the same time.

'It might just be a seasonal thing,' Shaughnessy says. 'All that may be needed is to say, well, don't fish near the sea lion colonies during these seasons.'

'But before we can do that, we need considerably more research – and that means more funding. We'd also like to work cooperatively with sectors within the fishing industry, because a better understanding of sea lion feeding habits is in everyone's interests.'

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