

For now, fortune favours the seals



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The changing fortunes of Australia's rare fur seals and sea lions is highlighting the precarious juggling act required of biologists when they try to protect different species occupying the same habitats.

During the past few decades, marine biologists have managed to pull fur seals back from the brink of extinction, but now have to balance the success of this operation with its possible impact on the equally rare Australian sea lions.

Fur seal numbers are increasing at a time when the food supply they share with sea lions – fish and squid – appears to be diminishing and sea lion numbers have mysteriously stalled. Australian sea lions are unique and only found off South Australia and Western Australia and at last count in the mid-1990s totalled a mere 2000.

'Small, stationary, populations such as this are always the most vulnerable,' says Dr Peter Shaughnessy of CSIRO Sustainable Ecosystems, leader of a coordinated scientific effort to secure the health of both species.

'We urgently need to find out why sea lion numbers have levelled off,' Shaughnessy says. 'Data collected suggest that too many pups are dying and we don't know why.'

'For example, in 1996 at two colonies we found mortality rates of 30% and 55%. The following year mortality decreased, but the worry is that we have no idea what's causing these dramatic fluctuations in pup mortality.'

He says possible causes of death include parasites, such as hookworm, environmental disturbance causing a food shortage for lactating female sea lions, high rates of aggression by adult males, direct human harassment or by entanglement in fishing gear.

But the most worrying possibility is that sea lions may be facing stronger competition for food from the fur seals, whose numbers have been increasing on places such as Kangaroo Island at an annual rate of about 10%.

'The Australian sea lion is an endemic species that we need to take care of. It's a tourist icon, up there with the koala, which attracts tens of thousands of visitors to the sea lion colonies every year. If we don't find out why their numbers are not increasing, we may face more serious problems later on,' he says.

Shaughnessy has begun a project with officers from National Parks and Wildlife South Australia to try and learn more about fur seal and sea lion behaviour and movements.

The main distinction between fur seals and sea lions is that fur seals have two layers of hair; an inner fine fur and an outer coarse hair. Sea lions have only one layer, which is why they weren't hunted as much.

In addition to the first-hand surveys which often require Shaughnessy to actually dive into the ocean and swim to rocky outcrops with his waterproof notebook, he and

other researchers have begun attaching instruments to some animals to trace their movements, and in particular their feeding habits.

They are also studying the interaction between fur seals, sea lions and the fishing industry, in the hope of reducing the number of marine mammals caught in nets.

'Often the seals caught in nets have been attracted to the area by unwanted fish discarded by trawler crews,' Shaughnessy says. 'It's a big problem, although one answer may be the addition of a steel grid to stop seals being drawn into the bottom of the net with the fish.'

The research is a painstaking process of finding the fur seal and sea lion colonies, then counting, weighing and marking the animals to build up a detailed profile of the populations and their wellbeing.

The fur seal colonies extend from Kangaroo Island to Flinders Island (near Cape Leeuwin) in WA, although 70% of the population is in the central South Australian waters from Kangaroo Island to the southern tip of Eyre Peninsula.

'Like a lot of environmental protection, the work is about building up your knowledge of a species and how it interacts with, or is affected by, human activity,' Shaughnessy says. This, hopefully, becomes the basis of wildlife, and national parks, management.'

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