



Conservation Council  
of South Australia Inc

# CCSA Fish Forum 2 – Notes of meeting

4<sup>th</sup> Feb 2009, Australian Sea Lions (ASL)

## Attendance

Approximately 40 people including representatives of:

- CCSA
- Marine Life Society of SA
- Department for Environment & Heritage
- PIRSA Fisheries
- Charter boat operators
- Commercial fishing industry
- Australian Fisheries Management Authority
- SARDI Aquatic Sciences

## Presentations

*Australian Sea Lions, Dr Simon Goldsworthy, SARDI Aquatic Sciences*

NB: The group Pinnipedia includes all the seals and sea lions, so collectively they will be referred to as pinnipeds.

- South Australia is the only state in Australia where all three of Australia's pinniped species are present: Australian sea lions, New Zealand fur seals and Australian fur seals.
- The Australian sea lion (ASL) is very unusual for many reasons:
  - ~17.5 month breeding cycle
  - Asynchronous breeding across range
  - Longest gestation for any pinniped; 14 month active gestation after 4-5 month delayed implantation; in other pinniped species gestation is around 8 months
  - Protracted lactation period, usually 17-18 months; max. 3 years
  - Extreme level of philopatry/population structure – DNA studies indicate little female gene flow and movement among colonies.

### Foraging behaviour

- ASL are benthic feeders (feeding on sea floor); most dives between 30-45 metres
- They spend approximately half their time at sea and half on land; different to other pinnipeds
- Continually active when at sea, do not rest unlike other pinnipeds
- Extreme variability in distance and direction for foraging
- Most seals make use of at least one other haulout

### Specialists

- There appear to be inshore and offshore specialists on different islands
- Offshore specialists are 25% heavier, 10% longer, have a 10% bigger girth, travel 30% faster, travel twice as far and dive 5 times as deep
- At 4 months old, pups are highly mobile, able to travel 20-60 kms with their mother; during this time it is highly likely that there is a transfer of knowledge/information about foraging behaviour, sites and prey
- 'Critter cams' are high definition cameras from National Geographic; they provide incredible insight into habitat, behaviour and diet. Attached cameras to two animals last year at Lewis Island
- Historic sealing took place between 1800-1830; skins were very valuable; no idea of pre-sealing numbers; colonies lost in WA, SA and Bass Strait; NZ fur seals has seen spectacular recovery since 1970s, no such recovery for ASL.

### Population statistics

- 48 known breeding sites in SA; 16% sites (6) make up 70% of the pup population
- Eight sites in SA host more than half of the total population
- Total SA population ~12,600, total Australian population ~14,700
- Status of most colonies is unknown, trend data is only available for Seal Bay, Dangerous Reef and The Pages
- Downward population decline since 1985, 3-4% per breeding season has been recorded at Seal Bay
- Dangerous Reef population is increasing, The Pages appear to be stable

### Management of threatening processes

- 2005 study showed no natural factors affecting population:
  - prey availability
  - disease
  - competition
  - breeding habitat availability
  - predation
- Evidence that bycatch is principal threatening process: entanglement rates, risk assessment/population viability analysis, independent observer data and population recovery at Dangerous Reef
- Monofilament gillnet 55% of all entanglements (15 years of data) at Seal Bay
- Population viability analysis: showed very high risk to extinction with even a small increase in mortality rates
- Sea lion fatalities reported to AFMA; WA rock lobster fishery – getting into lobster pots
- Recovery of ASL colony following cessation of fishing around Dangerous Reef, following a closure of gillnet fishing in Spencer Gulf in 2001

### ***Australian Sea Lions & commercial fishing, Paul Ryan, Australian Management Fisheries Authority (AFMA)***

- Fisheries management now takes into account the needs of the marine environment
- AFMA manages about 23 fisheries around Australia
- Fisheries Management Act 1991
- Objective 1(b) of the Act requires AFMA to manage fisheries consistent with the principles of ecologically sustainable development with specific reference to the 'impact of fishing activities on non-target species'
- All AFMA fisheries assessed by the Department of the Environment, Water, Heritage and the Arts under the Environment Protection and Biodiversity Conservation Act 1999
- AFMA were involved in the development of the 'National Seal Strategy' released in March 2007
- Ecological risk assessment involves assessing the effects of five factors:

- Target and byproduct
  - Bycatch
  - Threatened, endangered and protected species (TEPS)
  - Habitats
  - Threatening processes
- Bycatch and discard program:
  - Commonwealth bycatch policy, bycatch action plans
  - Ministerial direction 2005 – addressing overfishing, minimise interactions with TEPS
- Gillnet, hook and trap fishery:
  - Included in southern and eastern scalefish and shark fishery
  - Shark sector: gummy sharks, gillnet and demersal longline, 62 gillnet and 13 shark hook licences
- Observer program:
  - Auto longline sector
  - Gillnet sector: target coverage in 2007-08 - 73 days, actual 34 days; target coverage in 2008-09 – 73 days, actual to be determined
- Wildlife Trade Operation: condition requiring AFMA to develop and implement management measures, including fishery closures, to minimise the risks of interactions between AFMA fisheries and Australian sea lions by 21 December 2009
- Spatial management
  - Development of AFMA policy, based on CSIRO report which is currently in preparation
  - Need to integrate with other processes such as DEH (SA) Marine Parks, and Australian Government DEWHA Bioregional Marine Planning
- Other initiatives
  - Electronic monitoring cameras on boats being trialled now
  - Net configuration, investigation of 'sling' ratios (regarding the tautness of the net)
  - Protected species identification guide for fishers

## Discussion

There was healthy discussion regarding the following:

- The value of the gillnet fishery to SA (~\$23 million) and the economic flow-on benefit to the community.
- Future research to include stable isotope work with mothers and pups to indicate feeding areas
- Given the abundant evidence for population decline of ASL, what impediments are there to AFMA doing something? There may be spatial closure responses, working on data right now but with short deadlines. Fishery has been assessed by DEWHA as being sustainable with regard to TEPS.
- Work being undertaken by Simon Goldsworthy and AFMA includes study of the overlap between fishing effort and foraging areas/colonies.
- Role of sanctuary zones in marine parks – already net closures in SA, areas outside proposed marine parks already protected. If sanctuary zones are located where there are not currently net closures then would be beneficial. Need to put single species in context, marine parks are about more than that, which is where spatial management can contribute.
- Large amount of foraging range is outside the 3 nm state waters, so the largest management impact will come through spatial closures in Commonwealth waters.
- Little scope for changes to gear – potential studies to examine 'sling' ratio and whether this has any significant impact on bycatch.
- Predation of ASL – largely by sharks, most colonies have many animals with shark bite scars, most predation occurs on pups and juveniles.
- With little gene flow between colonies, science supports management of individual colonies.
- Having no prior population data makes recovery targets very difficult. Need to examine maximum catch before populations are impacted and work from there. Recovery from threatening processes is usually exponential, then when optimum population level established it levels out – Dangerous Reef has demonstrated this in a relatively short period of time (~8 yrs).
- Both shark species in fishery (gummy & school) are migratory, so if spatial management closures are implemented in fishery it might not impact the fishery that much because what is missed in spatial closures may be caught outside closed area. More data required.

- Many of the colonies of ASL on islands in Spencer Gulf are very low lying and it may be possible to lose some due to sea level rise. Most likely to impact Abrolhos Island colony because of sea temperature rise and sea level rise.

Research by AFMA is due to be reported by 21 December 2009. Paul Ryan has agreed to notify CCSA when these reports are published.