Sit. Rep. #10
US AMLR Field Station
Cape Shirreff, Livingston Island, Antarctica
8 January 2007

Seabirds:

1. The failure rate for chinstrap reproductive study nests has increased marginally over the past week. The current failure rate for chinstraps is 29%, compared to 25% last week. This is slightly higher than last year at this time. The gentoo reproductive failure rate has held steady at 12%.

2. Chinstrap chick production was higher compared to previous seasons. Reproductive study nests hatched 1.53 chicks per pair on average, compared to the 9 year average of 1.20 chicks per nest. Gentoo chick production was lower than previous seasons. Study nests hatched 1.38 chicks per pair, compared to the 8 year average of 1.48 chicks per nest.

3. We began diet sampling on chinstraps this week. We follow adults returning from foraging trips back to their nests to verify that they are breeders and capture them before they feed their chicks. Samples are collected using the wet-offloading technique. Data on total mass of stomach contents, diet composition, and length and sex frequency of krill are recorded for each stomach sample. We collected five samples on 4 January. The diet samples consisted entirely of Antarctic krill (Euphausia superba). 67% of the krill were females, 16% were males, and 17% were juveniles. The mean adult length was 49mm and the mean juvenile length was 26mm.

4. This week we will deploy satellite transmitters and time-depth recorders on chinstrap and gentoo adults. The satellite transmitters will be used to determine where the penguins forage while the time-depth recorders give us information on their diving behavior. The timing of the deployments will coincide with the first leg of the AMLR oceanographic survey.

5. Brown skua chicks have continued to hatch this week. Currently six nests have two chicks, two nests have one chick, and five nests still have eggs. One of these nests has one egg and is a recent relay.

Pinnipeds:

9. The five fur seal females equipped with satellite transmitters and Time Depth Recorders (TDR round 1 deployments) continue to collect data. Since 18 December, one female is on her sixth trip, three others have made three trips, and the fourth is on her third to sea.

10. This week two of our attendance females have lost their pups, most likely to leopard seals. All females in our core sample (non-primiparous females) have completed at least two trips to sea. Average trip duration for the first trip was 2.4 days (min: 0.4, max: 5.2, SD=1.2, N=22) and for the second trip it was 2.4 days (min: 0.7, max: 4.8, SD=0.9, N=22). All but two females have completed three trips. Eight females have completed their 6th trip, and their pups were weighed according to protocol.

11. We have an additional twelve attendance females that are either primiparous or second-time breeders (all are four- and five-year-olds). One of these has not yet departed on her first trip to sea but the mean first trip duration for the remaining eleven is approximately one day longer than the other females.

12. On 29 December we completed our annual end-of-breeding-season total pup census. With three observers we census our entire study area for live and dead pups. We calculate inter-observer variance and mean total count. Total pup production was 2080 ±27.3. (Last year total pup production was 2126 ±12.5). The median date of pupping was 6 December and day earlier than last year. Counts were within a maximum ±2.6%. Early season pup mortality was 4.8%. Leopard seals have arrived and have begun to feed on fur seal pups.

13. On 6 January, we assisted our Chilean colleagues with the collection of the first CCAMLR pup weights.

14. Daily tag re-sight censuses for adult females indicate an 88.4% return rate from last year (compared to 85.2% for adult females in 2005/06). Natality for adult tagged females is also 88.4% compared to 84.5% last year. We now have 41.5% of all the pups of tagged females sexed and we have begun collecting DNA from pups of tagged females.

15. Today is the end of the third week of fur seal diet studies. To date we have collected 30 scat samples all scats collected thus far have been krill.

16. Daily tag re-sight censuses indicate increasing portions of animals tagged as pups arriving. To date we have recorded 69 animals that were tagged as pups. All but one have been three years old or greater.

17. We now have two adult female leopard seals instrumented with satellite-linked transmitters. They haul out every day on our study site. One also has a VHF transmitter and her haul out pattern appears to correspond to the tidal cycle.

Cape Shirreff weather for the week:

18. The Cape enjoyed a dry pleasant week. Total precipitation for the week was 0.3 inches, most of which was in snow. The weekly mean wind speed was only 10.8 mph and westerlies prevailed. Mean temperature was 2.8º Celsius and the max temperature was 10.2 º C. Most of our snow is now melted and the weather has been so dry that most streams on the Cape are dry.

Camp:

19. We have seen humpback whales on a regular basis this week, with some individuals feeding at relatively close distance to camp.

20. The dry weather allowed us to paint camp.

21. The *R/V Yuzhmorgeologiya* arrives today at 16:00. They have had good seas and are arriving a half a day earlier than scheduled.

Report submitted by AMLR researchers currently residing at Cape Shirreff. These reports are also posted at http://swfsc.noaa.gov/aerd-field.aspx.