

Sit. Rep. #11
US AMLR Field Station
Cape Shirreff, Livingston Island, Antarctica
15 January 2007

Seabirds:

1. The failure rate for chinstrap reproductive nests has remained the same this week at 29%. This is lower than those recorded at the same time last year.

2. For the gentoo reproductive study mean crèche was on 7 January, about a week earlier than last year. The reproductive study nests are not followed after crèche. The gentoo nest failure rate up to crèche is 14%. This failure rate is exactly the same as last year. Of the reproductive sites 1.34 chicks crèched/nest, compared to 1.52 chicks crèched/nest last year and the 8 year mean of 1.23 chicks crèched/nest.

3. We conducted our annual gentoo chick census on 13 January. We counted 956 chicks; this represents an 18% decrease from the previous season and is 5% lower than the previous 10 year mean. Based on our census data, the overall gentoo chick production was 1.22 chicks/nest. This is not significantly different from the past 9 year mean, but is 15% lower than last year.

4. In the past week, we began weighing chinstrap chicks at 21 days of age. The mass, taken when chicks are 21 days old, is used as a measure of chick condition before they crèche. We have finished taking 21 day masses of the gentoo chicks in the reproductive study. Average chick one mass is 1618 grams and chick two mass is 1398 grams. Chick one mass is 5% lower than the 8 year mean and chick two mass is 6% lower.

5. A total of 9 time-depth recorders and 16 satellite transmitters were deployed on January 9 and 10 on gentoo and chinstrap adults. The time-depth recorders give us information on penguin diving behavior and the satellite transmitters are used to determine where the penguins forage.

6. We have completed 2 rounds of diet sampling on chinstraps and 1 round on gentoos; for each round, we collect samples from 5 adults. We collected five chinstrap samples on 12 January. The diet samples consisted entirely of Antarctic krill (*Euphausia superba*). 67% of the krill were females, 13% were males, and 20% were juveniles. The mean adult length was 46mm and the mean juvenile length was 30mm. The five gentoo samples were collected on 10 January and composed mostly of fish. This is different than last year when gentoos were mostly feeding on krill.

7. Of the 21 brown skua pairs on Cape Shirreff that have laid eggs this season, 7 have chicks, 6 are still incubating eggs, and 8 have failed. Three pairs relayed. There are significantly fewer chicks than last year at this time.



Pinnipeds:

8. This week we deployed satellite transmitters and time depth recorders on 5 adult female fur seals in time for the large-scale oceanographic survey. We recaptured 4 of the five Round 1 PTTs deployed in late December. One PTT female from round 1 is still transmitting and will be recaptured this week. We have recorded 22 foraging trips from 5 females since 19 December.

9. This week one attendance female lost her pup, most likely to leopard seal predation. In total 4 of the 22 attendance females have lost their pups, 3 likely to leopard seals. All females in our core sample (non-primiparous females) have completed at least three trips to sea. They have completed a total of 138 trips. Mean trip duration for each trip is as follows: first trip: 2.5d (s.d.=1.1, n=22), second trip 2.4d (s.d.=1.0, n=22), third trip 2.9d (s.d.=1.3, n=22), fourth trip 3.0d (s.d.=0.9, n=20), fifth trip 2.9d (s.d.=0.9, n=17), sixth trip 3.1d (s.d.=1.0, n=13). Thirteen females have completed their 6th trip, and their pups were weighed according to protocol.

10. We have an additional twelve attendance females that are either primiparous or second-time breeders (all are four- and five-year-olds). All of these females have completed one trip to sea. Three females have completed 6 trips to sea. Mean trip duration for the first trip to sea is 3.7d (s.d = 1.8, n = 12).

11. 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 54.5% of all the pups of tagged females sexed and we continue collecting DNA from pups of tagged females.

12. Fur seal diet protocol requires collecting 10 scats each week for analysis of fish bones, squid beaks, and krill carapaces. This week we collected our fourth sample. To date 40 scats have been collected. As in previous years, we transferred scat samples (n=30) to the ship, where running water facilitates analysis. All samples collected have been predominantly krill.

13. We have re-sighted 71 fur seals tagged as pups in previous years have returned to Cape Shirreff. Of these 2 were new arrivals recorded in the last week. We saw our second tagged yearling this week.

14. The two adult female leopard seals instrumented with satellite transmitters are still in the area. More leopard seals are continuing to arrive.

Cape Shirreff Weekly Weather:

15. Variable weather prevailed this week as rain, sleet, snow, and sunshine chased one another around the region. Measurable precipitation fell every day with a total accumulation of 0.53 inches. Intermittent sunbreaks let things to dry off a bit and allowed nice views of the mountains

and glaciers. Cool temperatures prevailed with an average of 2.7 degrees Celsius, the high for the week was 8.8 degrees, and the low was only 0.4 degrees above freezing. Winds were mostly from the east, with an average of 10.5 mph, gusting to 42 mph.

Station News:

16. The Research Vessel Yuzhmorgeologiya arrived with supplies, fresh produce, and a few new faces for the Cape.

17. We welcome AMLR director Dr. Rennie Holt ashore for another field season. LT Russell Haner also arrived to assist with station operations. It is with a touch of sadness that we bid adieu to Dr. Mike Goebel, who is returning to La Jolla as scheduled after more than two busy months on station. His leadership and personality will be missed for the remainder of the season.

18. The delivery of mail to the Cape was a very happy occasion. It was great to hear the news from home, friends, and family.

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