

Science Report

Seabirds

1. Currently 16% of nests in the chinstrap reproductive study have begun to hatch and are brooding chicks, 69% are still incubating eggs, and the other 16% have failed. No gentoo nests in the reproductive study have begun to hatch, 56% are incubating full or partial clutches and the other 44% have failed.
2. Of the 35 known-aged gentoo penguin nests that were initiated only one nest has hatched. 49% are incubating partial or full clutches and 49% have failed. 17% of the 59 initiated known-aged chinstrap nests are brooding chicks, 37% are still incubating clutches and 46% have failed.
3. A macaroni penguin was seen on 27 December hauling out at one of the beaches near a chinstrap colony. It only stuck around for a short time because it was only seen that evening.
4. We continue to monitor brown skua territories for nesting activity. Nineteen pairs of brown skuas have initiated clutches, 89% of these pairs are incubating partial or full clutches and 11% have failed. Two new territories were discovered this past week, each incubating clutches. Two brown skua pairs have relocated from territories they held last year to territories that have been vacant the past several years. They are both incubating full clutches. We recovered 3 more overwinter GLS instruments this past week and our current total recovered are 14 out of 20 deployed.
5. We have been monitoring 34 kelp gull nests on the cape. Of these nests approximately 50% have hatched, and the other 50% are still incubating eggs. Once the chicks hatch they are fairly mobile and cryptic which sometimes makes it difficult to figure out if the nest hatched or if the eggs or chicks were eaten. We have not noticed any obvious failures of the gull nests monitored.

Pinnipeds

6. Twenty-six of our CCAMLR attendance females have completed at least one trip to sea. Three females have not returned since departing on their first trip. The pups of two of these females have perished the third is still alive but will perish soon. These females have been absent 21, 17, and 13 days. Another female had a first trip of 2.7 days but has now been gone 14 days on her second trip to sea. Mean trip duration for the first trip to sea for females successfully completing a first trip is 4.0 days (s.d.=2.0; range: 1.2-7.3). Seven females have completed four trips to sea. The total number of trips logged as of yesterday is 68. Thus far none of our attendance study females has lost her pup to leopard seal predation.



7. Five of our six GPS instrumented females have all completed at least two trips to sea and together they have completed 16 trips to sea. The mean trip duration is 3.5 days (range: 0.8 - 8.2 d). However, one of the six is a female that has not returned from her first trip to sea. She has been absent 17 days.
8. Since last week we recorded four tagged females arrive for the first time this season. All four females returned pregnant, but one had a still birth. The last tagged female to give birth did so on 27 December. Only three of our tagged females are still on their first visit to shore.
9. Thus far our return rate for the tagged adult female population is 81.0%. (136/168). The natality rate for returned females is 78.7%. Median date of pupping of our tagged female population is 6 December. Mean age for females returning is 14.5 years (s.d.: 4.2). The mean age of females that have failed to return (or have not been seen yet) is 14.2 years (s.d.: 6.1)
10. We have sexed and collected DNA samples from all but thirteen pups of tagged females (n = 136). It is a challenge to get all the pups sexed and DNA collected before leopard seals get them so we are pleased to have gotten almost all of them so early.
11. We had a female that carried a GLS overwinter show up on 29 December. This brings the total number of returned to 73% (43/59). Five of the 43 remain to be recovered. However one of these we believe has lost its instrument. Thus we have four remaining to recover.
12. We conducted our last census for fur seal pups on the U.S. AMLR study site today (31 December). Our maximum count was on 21 December we recorded a total of 907 pups (871 live and 36 dead). We are no longer seeing the occasional pregnant female arrive and give birth. Based upon daily pup counts the median date of pupping was 6 December. The median date of pupping for our tagged population was 6 December and the median date of pupping of our CCAMLR attendance females was 5 December.
13. We censused the entire Cape for fur seal pups on 27 - 28 December. We recorded a 14.8% reduction in fur seal pup production over last year.
14. The total number of southern elephant seals in the last weekly phocid census was 226.
15. Leopard seals seem to be arriving later and in fewer numbers than last year at this time. We recorded only two leopards in the weekly phocid census. The same number we recorded the previous week. However, we have seen more outside the census and we expect to see more arrivals in the coming week.



16. We collected our second weekly sample of fur seal scats for studies of diet. We collect ten every week. All scats collected this week were composed primarily of krill. We have installed a new sink to process scats.

Weather

17. The mean temperature for the week was 2.0°C and the high was 10.4°C. The low was -2.1°C. Winds were mostly westerlies this week with a mean wind speed of only 5.8mph. The max. wind speed was 31.0mph. Total precipitation this week was 0.12 inches resulting in total precipitation since 12 Nov of 0.43 inches. Sunrise and sunset are now 03:08 and 22:54. Mean daily solar radiation this week was 17,871 watts per sq. meter.

Camp

18. Cape Shirreff field station experienced a very lovely Christmas dinner. Mike smoked two turkeys, David made two stuffing dishes (one meat and one vegetarian), Nicole made gravy, Michelle made the pumpkin pie, Jay made mashed potatoes and Melany made her mother's broccoli casserole. We opened our Christmas Eve presents and woke up on Christmas to rejoice in the holiday spirit and open gifts from our loved ones and from each other. Thanks to everyone who remembered us during the holidays!
19. On the morning of 31 December, the National Geographic M/V *Explorer* arrived at Cape Shirreff and deployed three people ashore. Douglas Krause, Fisheries Biologist, AMLR, Greg Marshall, Founder of the National Geographic Crittercam team, and Kyler Abernathy, Director of Research, National Geographic Crittercam team. The Cape Shirreff team welcomed them warmly with freshly baked cookies. Special thanks to the Executive Baker of M/V *Explorer*, Oscar, who spoiled us with fresh-baked bread, cheesecake and sweet cake. Special thanks to the zodiac crew of the M/V *Explorer* who navigated inshore to drop off the Crittercam team!
20. 12 v power outages continue to plague the camp. We experienced three overnight outages this week. Lack of sunshine and weak batteries in our bank have resulted in excessive use of our gasoline-powered electric generators. The quantity of onsite gasoline is not sustainable for excessive use of the electric generator.
21. The camp is installing a sink in the lab for fur seal scat processing. We are expected to have it completed this week.



22. Cape Shirreff field station is getting prepared to have an amazing New Year's Eve party. There will be good food, music and perhaps a little bit of dancing. Everyone is excited to bring in the new year with our new team members, Doug, Kyler and Greg.
23. Everyone at the Cape sends their best wishes to all for a Happy New Year.



Presented by Mike Goebel and Nicole Cook, with assistance from Jay Wright, Melany Zimmerman, Michelle Goh, and David Vejar at the Cape Shirreff Field Camp, Livingston Island, South Shetland Islands, Antarctica

