

*U.S. Antarctic Marine Living Resources Program*  
*2013/2014 Weekly Field Reports*  
*Cape Shirreff, Livingston Island*

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**Science Report**

Seabirds

1. The first chinstrap penguin chick was seen on 20 December. Currently none of the 100 nests in the chinstrap reproductive study have hatched, 86% are incubating partial or full clutches, and the other 14% have failed. The first gentoo chick was seen on 18 December. To date, 10% of the 50 gentoo reproductive study nests have hatched, 74% are incubating partial or full clutches, and 16% have failed.
2. None of the known-aged chinstrap or gentoo penguin nests have hatched. Eighty-two percent of the 39 chinstrap pairs that initiated clutches continue to incubate their eggs, while 17.9% have failed. Eighty-five percent of the 40 known-aged gentoo penguin pairs that initiated clutches continue to incubate their eggs, and 15% have failed.
3. We continue to monitor brown skua territories for nesting activity. Twenty-three pairs of brown skuas have initiated clutches; 22 of these pairs are incubating partial or full clutches, and one has failed.
4. To date, there are 39 active kelp gull nests, five of which have chicks.
5. The blue-eyed shags in a small colony on the west side of Cape Shirreff are currently brooding chicks.
6. Wilson's and black-bellied storm petrels have begun to show up in larger numbers this past week. A Wilson's storm petrel was also seen incubating on Maderas ridge.

Pinnipeds

7. As of yesterday, all but three of our CCAMLR females have completed one trip to sea. Of those completing their first trip to sea, the mean trip duration was 3.35 days (s.d.: 1.33, n=27, range: 0.9-6.69). Three females have completed three trips to sea.



8. All pups of CCAMLR attendance study females were re-captured and weighed approximately 24 hours after their mother's first departure to sea. These mass measurements give us a metric for pup growth rates. Mean growth rate for all study pups was 162.0 grams per day (s.d.: 63.9, range 27.3 – 276.7).
9. We continue to census pups, live and dead, on the U.S. AMLR study site which comprises approximately a quarter of total fur seal production. Our maximum count thus far was on 21 December, and we recorded a total of 759 pups (738 live and 21 dead), which is a 15.3% decrease from last year at the same time. We are still observing an occasional pregnant female arrive and give birth. Median date of pupping was 6 December.
10. We are still recording an occasional tagged female arriving for the first time. The last tagged female to arrive did so on 19 December.
11. We have seen an increase in Weddell seals and leopard seals this week and a slight decline in elephant seal numbers. The totals for the phocid census on 20 December are 85 Weddell seals, five leopard seals, and 140 elephant seals.
12. We have started to collect our first sample of fur seal scats for studies of diet. So far we have collected five of the 10 scats for this week. To date, two scats have been processed; these scats were composed of krill with no evidence of fish or squid. The remaining scats appear to be composed primarily of krill as well.
13. Leopard seals are increasing and we observe new animals tagged in previous years arriving almost daily. To date we have observed seven tagged leopard seals, which is more than twice the number seen at this time last year. We have recorded six sightings of untagged leopard seals. All untagged leopard seals were photographed and added to our photo ID catalog.
14. This week had us back in the air again with our APH-22 hexacopter. We took advantage of a calm day, and obtained aerial coverage of all Antarctic fur seal study beaches. These images were taken in conjunction with ground counts of pups, and will provide census comparisons as well as density measurements for our fur seal breeding beaches. In all, 305 images were taken over four study beaches.



## Weather

15. We have just finished up our 8<sup>th</sup> consecutive week with mean temperature below zero. The Cape remains completely snow-covered except for patches on steep slopes on the hills around the Cape. The mean temperature was  $-0.7^{\circ}\text{C}$  and the high temperature for the week was  $4.7^{\circ}\text{C}$ . The low was  $-2.6^{\circ}\text{C}$ . Winds were mostly from the west and south this week with a mean wind speed of 7.7 mph and maximum of 40.0 mph. We received 0.07 inches of precipitation this week and total cumulative precipitation since arriving is 0.73 inches. Sunrise and sunset today was 02:57 and 22:57. Mean daily solar radiation this week was 15,375 watts per sq. meter.

## Camp

16. In anticipation of the arrival of our collaborators from National Geographic on 31 December, we have expanded our bunking capacity. From 18-20 December, snow and ice were cleared from a large section of El Condor flats, and our insulated Weather Haven tent (12' x 16') was inspected, assembled, secured, and cleaned. The additional space for gear and personnel will be much appreciated.
17. Due to our continued streak of freezing temperatures, we have been unable to set up gutters to collect rain water, set up the sink tubing, or move our current-use water barrel out of the kitchen. We are currently using our sixth water barrel. We have been conserving water as much as possible by using snow for showers, dishes, and now, for sorting fur seal scats.
18. A new propane freezer was installed in the drying shed this week to compensate for the loss of our 12 volt unit. It appears to be running well, and it will house all non-scat samples.
19. Our war against mold, dirt, and mildew continues apace. This week additional walls were cleaned in main camp, along with the drying shed and Weather Haven tent.
20. We experienced our longest day of the year on 21 December. We celebrated the solstice by watching the one movie that is universally respected as the best movie of all time, Point Break.
21. We are excited for the Christmas holiday and have begun planning our Christmas dinner. A turkey has been thawing, and we are hoping to salvage our last pumpkin for some tasty pie.



22. Everyone at the Cape sends their thanks to all those family and friends that sent Christmas presents and cards with the camp opening in October. Their thoughtfulness will make Christmas at the Cape that much more special. Best wishes to all for a Happy New Year from the AMLR Cape Shirreff crew.

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