

*U.S. Antarctic Marine Living Resources Program*  
*2012-2013 Weekly Field Reports*  
*Cape Shirreff, Livingston Island*

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**Science Report**

Seabirds

1. On December 11, we weighed and measured eggs from a sample of 50 gentoo penguin nests. This data currently awaits analysis.
2. In the just over two and a half weeks since gentoo penguin peak clutch initiation there has been a 36% failure rate in the 50 study nests, while 10% are incubating one egg and 54% are incubating two eggs. In the third week since chinstrap penguin peak clutch initiation, 89% of the reproduction study nests are incubating partial or full clutches and 11% have failed.
3. We continue to monitor known-age penguins. Of the 33 known-aged gentoo penguins that initiated clutches 70% continue to incubate and 30% have failed. Of 57 known-aged chinstraps that have initiated clutches 61% continue to incubate partial or full clutches and 39% have failed.
4. We continue to monitor brown skua territories for nesting activity. Twelve pairs of brown skuas are now incubating partial or full clutches. 8 of 20 overwinter GLS instruments were recovered from brown skuas this past week.
5. To date, we have observed 29 kelp gull nest incubating clutches.
6. We observed 3 banded giant petrels scavenging a dead bull on one of the fur seal study beaches.
7. The small colony of blue-eyed shags on the west side of Cape Shirreff is currently brooding chicks. The estimated age for the majority of shag chicks is 2 weeks.

Pinnipeds

8. We will complete early-season perinatal captures of Antarctic fur seals later today. To date we have made 30 captures and instrumented 29 adult female fur seals with VHF radio transmitters. Eleven have also received a time depth recorder; six of which have GPS location capability. Next week we will report capture statistics.



9. We have recovered half of the overwinter GLS instruments deployed last year (30/59). There are another eight that have returned but have not yet been recovered. These are on females that are either not pregnant or have not been easily accessible to capture without considerable disturbance. We will capture these eight after the breeding season when animals are more easily captured.
10. We completed the first round of deployments of diving and location instruments for studies of foraging range and effort. We are now collecting at sea foraging location data on six lactating female fur seals using time depth recorder (TDR) instruments with fast-loc GPS technology. Four of the six females have completed their first trip and two have already completed two trips. One has not departed to sea yet.
11. As of this morning 23 of our 29 CCAMLR attendance females have departed Cape Shirreff for their first trip to sea. Sixteen have completed their first trip to sea. Trip duration thus far has ranged from 1.21 to ~7 days (for a female that returned after downloading our automated VHF receiving station).
12. We are monitoring pup growth of our CCAMLR attendance females and have gotten a post-perinatal mass on twenty of the pups whose mothers have departed sea.
13. At the last census of fur seal study beaches on 15 Dec we recorded a total of 461 adult females and 782 pups (765 live and 17 dead).
14. On the last phocid census on 14 December we counted 306 southern elephant seals, 44 Weddell seals, and two adult female tagged leopard seals. Both returning leopard seals were instrumented last year with overwinter GLS instruments. One, however, had lost her GLS and the other remains to be recovered.
15. We have deployed only one PIT tags (Passive Integrated Transponder) on an adult tagged female fur seal thus far this year. This is the seventh year of deploying PIT tags to address the high incidence of tag loss in the population and all but one of the captured fur seals had already been PIT tagged.
16. Our sightings of leopard seals are increasing. Our first “resident” tagged leopard returned this week and arrived exceptionally fat. She has been observed at the Cape every year since she was tagged five years ago. Pups have not yet begun entering the water and playing in tide pools so they are much less accessible to leopard seals.



17. We have recorded several sightings of tagged elephant seals that were tagged elsewhere.
18. We discovered a dead elephant seal pup that melted out of the snow. That brings the total elephant seal pup count for this year to 26.

### **Weather**

19. Even though we have had considerably warmer temperatures this week the Cape remains completely snow covered. The mean temperature for the week was 1.6°C. The high temperature for the week was 9.9°C and the low was -2.1°C. We have had unusually calm weather all week with a mean wind speed of only 6.6 mph. The maximum wind gust was only 25 mph. Prevailing winds this week were north and northwest. Our rain gauge only recorded 0.01 inches this week. Mean daily solar radiation this week was 18,347 watts per sq. meter.

### **Camp**

20. Rain gutters have been installed throughout the camp.
21. The camp has experienced an increase in whale sightings. Several pods of humpback whales have been spotted just off the east side of the cape, throughout the week.
22. We have yet to experience any precipitation and continue to use the existing water barrels. We are about to start on water barrel number five. However, because of the snow removal at the main hut entrance and the strong daily sunlight, the exposed water barrels have melted. The camp has just shifted to using the water barrels outside. The shift really opens up the kitchen space just in time for the holiday season.
23. We dug out the trash corral this week and moved scat water barrels from the landing zone and into position outside of the lab.
24. The crew is now partaking in holiday cheer throughout the twelve days of Christmas. Songs of joy and happiness are being sung in the evenings and throughout dinner.



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