U.S. Antarctic Marine Living Resources Program

2015-2016 Weekly Field Reports
Cape Shirreff, Livingston Island

Report 6
December 7, 2015

Seabirds:

1. We conducted the annual chinstrap penguin nest census on 1 December, approximately one week after the peak clutch initiation date. We counted 3302 nests, 4.7% lower than last year's count of 3464 and 36.4% lower than the previous 16 year mean of 5187.

2. We conducted the nest census for gentoo colony 8 on 1 December. We counted 68 nests, bringing the total for the rookery to 655, which is 10% lower than last year's total, and 20% lower than the previous 18 year average.

3. We conducted gentoo egg measurements on 2 December, approximately two weeks after mean clutch completion. Weather during egg measurements was less than ideal, with rain and moderately high winds affecting measurement accuracy. Given the caveat, raw data suggest first egg and second egg weights were 0.4% and 4.2% higher than the previous 18 year averages; volumes were comparable to the previous 18 year averages, being 2.7% and 0.7% lower respectively.

4. To date, 78% of gentoo repro nests have completed clutches, 20% have failed, and 2% have failed and reinitiated.

5. To date, 1% of chinstrap repro nests have one egg, 95% have completed clutches, and 4% have failed.

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6. We continue to resight and monitor banded known-age penguins. To date, 25 known-aged gentoo penguins have initiated clutches. Four percent have partial clutches, 72% have complete clutches, and 24% have failed. There are currently 27 known aged chinstrap penguins that have initiated clutches. Of these, 11% have partial clutches, 85% have full clutches, and 4% have failed.

7. We continue to monitor brown skua territories for nesting activity. Many of the hilltops are beginning to melt out, and more paired skuas have been sighted on territories. No eggs have been found to date.

8. A malfunction in the temperature logger at the Skua shack caused it to record outside temperatures in the high 70's centigrade for several days. We are replacing the unit with an older model.

Pinnipeds:

9. We began perinatal fur seal captures for attendance and foraging behavior on 2 December. We captured one female on that day as we refined our technique, trained new team members, and searched for our groove. To date we have completed 7 of the planned 32 captures. All females have received VHF radio transmitters for monitoring attendance behavior (i.e. trip and visit durations; CCAMLR Ecosystem Monitoring Program protocol). Five females, thus far, have also received a time depth recorder for monitoring diving effort for the first six trips to sea.

10. Our two VHF receiving stations are recording and appear to have increased coverage from last year thanks to a refurbished signal amplifier on the El Condor station. We downloaded our first data and everything seems to be working as expected. Thus far none of our instrumented female fur seals has departed on their first trip to sea.

11. At the last census of fur seal study beaches on 8 December, we recorded a total of 188 pups (185 live and three dead). This is a 48% decrease compared to the same time last year.

12. Thus far, 32.7% (37/113) of our tagged female population have returned to Cape Shirreff. The natality rate for returned females to date is 80.0%. There are, however, still females arriving and Pupping, and we expect over-winter survival and natality rates to change.

13. During this week's phocid census, we observed 146 elephant seals including 88 juveniles and 47 pups. We also saw 24 Weddell seals, but no crabeater or leopard seals.

Hexacopter:

14. Severe weather conditions throughout the week prevented hexacopter operations. We plan to obtain aerial coverage of all penguin colonies in the coming week, given the opportunity.

Weather:

15. This week's weather featured an impressive two day storm preceded and followed by windy and precipitation-filled days. The mean wind speed this week was 16.2 mph, the maximum was 78 mph out at the bird blind. Wind direction was predominantly from the west (76.2%). The mean temperature for the week was 0.4°C, the high was 2.9°C and the low was -2.0°C. Total precipitation this week was 0.6 inches, which was 82% of our season's total. Mean daily solar radiation this week was 13,872 watts per square meter.

Camp:

16. We took advantage of our spans of severe weather this week, when science work was prevented, to make some significant improvements to the power system at camp. First, the new aluminum wind generator tower was customized, and a second wind generator was installed. Subsequently, we installed a power inverter into our system. This allows us to provide 110V AC power to any building at the Cape without the use of a gasoline generator. Thank you Tony for doing most of the installation and for a well-designed configuration!

17. The late spring thaw has caused us to have to bring another 55 gallon barrel of frozen water into the main hut to thaw. We are now on our 4th water barrel.

18. This week we shoveled snow off of most of the main deck and moved the frozen water barrels against the buildings.

Submitted by AMLR researchers currently residing at the Cape Shirreff field station, Livingston Island. Images provided by Matt Klosterman and Mike Goebel.