U.S. Antarctic Marine Living Resources Program

2015-2016 Weekly Field Reports
Cape Shirreff, Livingston Island

Report 9
December 28, 2015

Seabirds:

1. Peak hatch for gentoos in the western colonies occurred on December 24, with 63% of gentoo nests in the western colonies hatching at least one chick. By comparison, only 10% of gentoo nests in the eastern colonies have hatched to date. Overall, 42% of gentoo nests have hatched at least one chick, with 36% incubating and 22% failed.

2. Chinstrap chicks have started to hatch, with the first chick in a repro plot occurring on December 26. To date, 65% of chinstraps continue to incubate, 7% have hatched at least one chick, and 28% have failed.

3. We continue to monitor known-age penguins. Of the 30 known-aged gentoo penguins that initiated clutches, 20% have chicks, 53% continue to incubate, and 27% have failed. Of 33 known-aged chinstraps that have initiated clutches, 3% have hatched at least one chick, 67% continue to incubate partial or full clutches, and 30% have failed.

4. On December 21 we began beach sweep. Beach sweep is a study in which we walk the beaches near the penguin colonies in an effort to resight non-breeding, known-age gentoo and chinstrap penguins. Although we have begun to see yearling chinstrap penguins, none are banded and overall known-age resight numbers remain low.

5. We continue to monitor brown skua territories for nesting activity. Eleven pairs of brown skuas are now incubating partial or full clutches while two pairs have lost their eggs.

6. We continue to sight Adélie penguins throughout the Cape.

Pinnipeds:

7. All of our attendance study fur seal females (n=31) have completed, or are on, their first trip to sea. The total number of trips completed by attendance females is 50, with four females currently on their fourth trip to sea. Mean trip duration of the first trip to sea was 3.7 days (n=30, s.d.=1.52; range: 0.35 – 7.1 days).

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8. We have recaptured and weighed all 31 of our attendance study females' pups within approximately 24 hours after their mother's first departure to sea (mean: 0.62 days, s.d.: 0.40, range: 0.06 – 2.01 days). Mean perinatal growth rate was 223.5 grams per day (s.d: 80.4, range: -20.0 – 409.2). This represents an increase over 2013 and 2014 when the mean perinatal growth rates were 166.1 grams per day (s.d.: 57.1, range: 27.3 – 276.7) and 198.6 grams per day (s.d.: 63.1, range: 70.2 – 314.3), respectively.

9. We continue to see new births on the study beaches, including two tagged females who pupped on December 26. The natality rate for our tagged population is 88% with a female return rate of 89% thus far. These figures include six primiparous females aged four to five years old.

10. We conducted our cape-wide census of live and dead fur seal pups on 26-28 December. The three observers counted a mean total of 1,681 pups (s.d.= 30, range: 1,657 – 1,714), with the minimum and maximum counts differing by only 3.3%. The reduction in fur seal pup production compared to last year was 21.1%. The total count has not been adjusted for loss due to leopard seal predation prior to the count.

11. The total number of southern elephant seals (274) at the last weekly phocid census was its greatest for the season. While we have started to see leopard seals trickle in, we only observed two during the phocid census. Sixteen Weddell seals and two crabeater seals were also observed during the census. To date we have seen three tagged leopard seals, 19 tagged Weddell seals, and seven tagged southern elephant seals.

12. This week we observed our first instances of leopard seal predation on fur seal pups. Leopard seals were seen hunting on multiple beaches and one tagged female was observed successfully catching a pup on shore on one of the study beaches.

13. Saturday marked the start of the second week of scat collection for fur seal diet studies. It took all week to collect our quota of 10 scats, and this week is proving difficult as well, however we remain confident we will find enough by the end of the week. Thus far, six scats have been processed. All were composed primarily of krill with no otoliths found.

Weather:

14. Mean temperatures have been over 0 ºC for the past four weeks. The mean temperature for the week was 0.4ºC with a high of 5.1ºC and low of -2.3ºC. Warming temperatures have affected snow melt with two of four snow stakes on the cape free of snow and a third predicted to be snow free within the next week. The average wind speed was 12.3 mph with winds predominantly from the west (41.6%) followed by the east (38.4%). The maximum wind speed for the week was 51 mph. The total cumulative precipitation since October 29 is 1.21 inches, with 0.16 inches for the week. Mean daily solar radiation this week was 14,918 watts per sq. meter.

Camp:

15. This year the Cape Shirreff crew celebrated the Christmas holiday on Christmas Eve with a large dinner and the opening of presents from past and present camp mates, as well as family and friends back home. We had two smoked turkeys, smoked salmon, mashed potatoes, corn casserole, Brussels sprouts, and chocolate chip cookies, among other decadent delights. Thanks to everyone who was thinking about us this holiday season and sent cards or emails our way!

16. Christmas Day also brought the departure of our camp leader Doug Krause. With his exodus via the *R/V Laurence M. Gould*, the (human) population of the Cape dropped to four, its lowest in years. The brief stop by the *Gould* also brought many gifts and goods from nearby Palmer Station. We would like to thank everyone for the delicious bagels, bread, and cookies, as well as the small gifts for everyone here.

17. Due to the persistent snow and wind this week, we have been unable to put up our gutters to begin collecting rain water. However, we still have five full barrels of fresh water (and plenty of fresh snow) if needed.

18. Everyone at the Cape sends their best wishes to all for a Happy New Year!

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