U.S. Antarctic Marine Living Resources Program

2014-2015 Weekly Field Reports
Cape Shirreff, Livingston Island

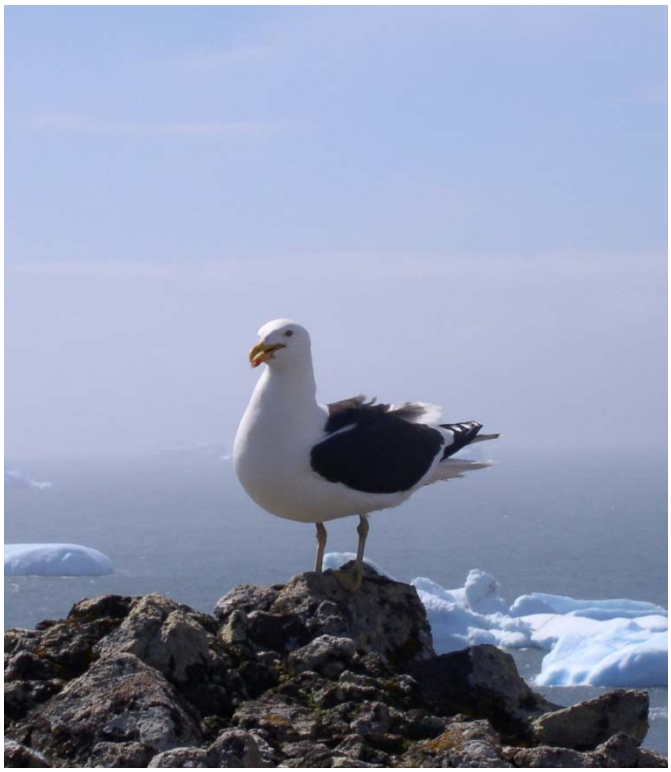
Report 6
December 8, 2014

Seabirds:

1. In the one and a half weeks since the start of chinstrap penguin clutch initiation, 18% of nests in our reproductive study have failed. One week since mean clutch initiation date for gentoos, 48% of nests in our reproductive study have failed. This unusually high failure rate is likely attributed to snow cover inhibiting adequate nest construction and snow drifts burying eggs.

2. To date, 38 known-age chinstrap penguins that were banded as chicks have nested. Of these, 11 pairs have failed. Thirty three known-age gentoo penguins that were banded as chicks have nested. Of these, 11 have failed.

3. We conducted the annual chinstrap nest census on 4 December. We counted 3569 occupied nests, which represents a 34% decline from the previous 17 year mean, but was only 13 fewer nests than last year's census.



4. We weighed the eggs from 50 chinstrap nests on 5 December. Egg weights and volumes varied less than one percent from the previous 17 year mean.

5. Brown skuas have initiated clutches and 10 pairs are currently incubating eggs. The first skua egg was seen on 3 December.

6. There are currently 27 active kelp gull nests and 2 that have failed.

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Pinnipeds:

7. We have completed 14 of the 32 fur seal perinatal female captures we have planned for attendance and foraging ecology. All females have received VHF radio transmitters for monitoring trip duration (CCAMLR Ecosystem Monitoring Program protocol). Eight females thus far have also received a time depth recorder for monitoring diving effort for the first six trips to sea. Two of the TDRs also have GPS Fast-loc technology for recording at sea location. Our CCAMLR trip duration captures began on 29 November and, as of yesterday, only one female has left and returned for her first trip to sea.

8. We have now recovered 14 of the 24 over-winter geolocating light sensors (GLS). We have three more females that have arrived with GLS and are either still pregnant or have had a pup in the last 24 hrs. Thus far we have been able to recover all 14 within 48 hours of parturition. A full complement of samples (blood, milk and whisker) have been collected for each female. Nine of the 14 have provided lat-long data for the entire duration. Two more provided data at least until October. The mean number of days of location data thus far is 270 days (range 218-287). We have been unable to interrogate three tags; these tags will be returned to the manufacturer for data recovery. Ten of the 24 females in the over-winter dispersal study also carried a small time-depth recorder (TDR) which sampled temperature at 1 sec intervals and light at 60 sec intervals for the entire duration. Eight of the ten have returned and their TDRs recovered with the full complement of data. No females have returned without their TDR and we are hopeful the remaining two females will return soon.

9. At the last census of fur seal study beaches on 7 December, we recorded a total of 408 pups (399 live and 9 dead). This is a ~14% decrease compared to the same time last year.

10. Thus far 66.9% (81/121) of our tagged female population have returned to Cape Shirreff. The natality rate for returned females to date is 82.4%. There are, however, still females arriving and pupping, and we expect over-winter survival and natality rate to increase in the coming week.

11. On 4 December we observed the first tagged adult female leopard seal of the season.

12. We recorded a total of 17 Weddell seals hauled out on one of our northern beaches two days ago. In the weekly census on 5 December, we recorded 31 for the whole Cape. Only one leopard seal was recorded in that census, a tagged female observed for the first time a week ago. A total of 104 elephant seals was recorded.

Weather:

13. Our temperatures remain below freezing and the Cape is completely snow covered. The mean temperature for the week was -0.7°C. The high was 1.4°C and the low was -3.2°C. Easterlies continue to persist but westerlies dominated though barely so. We also had two days of strong southerly winds. It was our wettest week since arrival with a total precipitation 0.26 inches. Sunrise and sunset are now 03:01 and 22:41 as we close in on the longest days of the year. Mean daily solar radiation this week was 15,248 watts per sq. meter reflecting the many days of sun this week.

Bahia Mansa during a low snow year (left, 11/27/2008) versus this season (right, 11/29/2014), a high snow year.

Camp:

14. On the morning of December 4, we were surprised to see a helicopter appear over the glacier. It flew by but then disappeared from the direction it came. It did not land.

15. This was the first week we could look out of our east facing windows and see something other than a snow bank. However, soon after we had a storm that deposited enough snow to cover the lower third of the windows.

16. We have begun having regular sightings of humpback whales off the east side of the Cape.

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. Usually by this week we have put up our rain gutters to collect fresh water but it has been too cold so we have not done this yet.

Submitted by AMLR researchers currently counting critters at the Cape Shirreff field station, Livingston Island. Images taken by Mike Goebel, edited by S. Sexton.