

2014-2015 Weekly Field Reports

Cape Shirreff, Livingston Island

Report 12
January 19, 2015

Seabirds:

1. In the first week since gentoo penguin peak hatch, 14% of the reproduction study plots have at least one chick, 84% have failed and 2% are still on eggs. In the second week since peak chinstrap penguin hatch, 39% of the chinstrap penguin reproduction plots have at least one chick and 61% have failed.



2. We continue to monitor known-age penguins. Of the 43 known-aged gentoo penguins that initiated clutches, 28% have at least one chick, 67% have failed, and 5% are still on eggs. Of 39 known-aged chinstraps that have initiated clutches, 41% have at least one chick and 59% have failed.
3. On January 12th we deployed six satellite transmitters and three Time Depth Recorders (TDRs) on chinstrap penguins that are brooding chicks. The satellite transmitters will be used to determine where the penguins forage and the TDRs give profiles of diving behavior. We will recover these instruments after one week of deployment.
4. On January 18th we started deployment of radio transmitters on breeding gentoos to measure foraging trip durations during the chick-provisioning period.
5. To date, we have collected 10 diet samples from chinstrap penguins and five from gentoo penguins. Chinstrap penguin diet samples have consisted almost entirely of Antarctic krill (*Euphausia superba*) with trace amounts of fish. Gentoo penguin diet samples were a mix of Antarctic krill and fish. To date, we have found otoliths from the species *Gymnoscopelus nicholsi* and an unknown species.

6. Of the twenty pairs of brown skuas that we are monitoring, four nests are still on eggs, six nests have chicks, and 10 pairs have failed.



Pinnipeds:

7. Ten of our 32 CCAMLR attendance study females have completed six trips to sea. Five more are currently on their sixth trip to sea. All but one female has completed at least three trips to sea. Twelve females have lost their pup. This reduces our sample size to 20. Mean trip duration thus far is 4.02 days (s.d.: 1.68; N=122).
8. Our TDR females have completed 52 trips to sea, averaging 3.58 days (s.d.: 1.60). Approximately half of the monitored trips have been with GPS-capable TDRs.
9. We captured two adult female fur seals this week. These captures were for instrument recoveries from attendance study females that have lost their pups.
10. We have started to collect pup weights after the females have completed six foraging trips to sea. The current mean is 104.9 g/d (s.d.: 17.6, range: 82.3-128.3, n=7.) Unfortunately, leopard seal predation is high this season and we have lost 12 study pups prior to getting a “post six trip” weight. In an effort to recoup growth data, we have weighed a sample of pups after their mother’s fourth trip to sea; the current mean for this subset is 183.5 g/d (s.d.: 43.4, range: 105.8-286.7, n=19). All weights are taken post-absorptive the day following the mother’s departure to sea.
11. We continue to monitor our adult tagged female population and mother/pup pairs to obtain a measure of reproductive success and loss of pups due to leopard seal predation. Thus far the estimate of offspring mortality attributed to predation is 30%.
12. This week we are collecting our fifth sample of fur seal scats for diet analysis. To date, 48 scats have been collected and 41 samples have been processed. All of the samples processed have been composed of krill.
13. On January 16th we completed our eighth weekly Cape-wide phocid census. We recorded 248 southern elephant seals, 15 leopard seals, and 38 Weddell seals.
14. To date we have recorded 94 sightings of leopard seals and the arrival of 19 tagged leopards. Four untagged leopards have now been tagged. We have taken over 335 photos of leopards for the photo ID archives; 161 of these were of untagged leopards.
15. We have tagged 12 Weddell seals thus far this season. We have sighted 24 tagged Weddell seals.



16. We continue to see juveniles that were tagged as pups. To date, twenty five 3-yr-olds have been observed, only one two year old and no yearlings. Juveniles are still arriving for the first time and we expect to see more in the coming weeks.

UAS Missions:

17. No successful flight missions to report this week due to heavy winds, dense fog, or other operational priorities. We had a brief opportunity to survey on January 16th, however heavy snow arrived while trying to map Maderas Beach to Chungungo Beach, significantly reducing the quality of the photogrammetry.

Weather:

18. This week brought a mix of increased winds, occasional snow flurries, and sunshine. Outdoor temperatures also fluctuated greatly, with a mean temperature of 0.6 °C, but a low of -2.9 °C and a high of 4.3 °C. Wind direction varied with approximately 37% westerlies, 30% easterlies, and 16% each from the south and north. Average wind speed was 8 mph, with a high of 39 mph. Precipitation totaled 0.24 inches for the week, bringing the total precipitation for the season to 1.55 inches. The average daily solar radiation reached 16024 watts per sq. meter, the third highest value for the season, and Jan 17 had the highest average hourly solar radiation for the season at 1311 watts per sq. meter. Despite the sunny days, daylight is now only approximately 18 hours and 25 minutes with nights being noticeably darker.



Camp:

19. On January 17th, Dr Mike Goebel left Cape Shirreff via helicopter (aerial view of the Cape on previous page taken during his helo flight) and successfully landed at Chilean Base Escudero on King George Island. He currently awaits transportation to Punta Arenas, Chile in the coming days. The crew is very sad to see him go. David Vejar assumes the role of camp manager.
20. The crew brought the new window covers up from the beach and began installing them. During removal of the old window covers, most of them began to fall apart. The new window covers couldn't have come any sooner.
21. The wind generator continues to perform effectively. No noticeable power issues at the camp this week. Our crew is preparing to install the new solar array to the roof of the workshop/fur seal lab. We are currently awaiting additional guidance for mounting the brackets to the roof; once the crew understands how to mount the array, we can expect to begin installation during the next round of dry days.
22. Two problematic 3kw generators have been completely serviced, including new air filters, oil change, spark plugs, and new carburetors. These two generators have not been reliable since camp opening. Cycling the two generators online will begin this coming week.
23. Heavy snow around camp continues to make access/usage of the ATV impossible.
24. We had snow from the east, but very light rain with only a negligible amount of water added to our freshwater supply.
25. On the evening of January 16th, we celebrated Mike and the three Chileans' pending departure with a dessert "social". McKenzie made her famous chocolate éclairs and the Dutch scientists contributed a delicious Dutch cake. We spent the evening learning about culture, family and science.
26. January 17th was a sunny day. We used this time to shovel walkways throughout camp. As of this week, the only three areas of deck still under snow are the main hut east, workshop south, and supply hut south. Five feet of snow remains around much of the camp.



Submitted by AMLR researchers currently residing at the Cape Shirreff field station, Livingston Island. Images taken by Mike Goebel.