U.S. Antarctic Marine Living Resources Program

2015-2016 Weekly Field Reports
Cape Shirreff, Livingston Island

Report 10
January 4, 2016

Seabirds:

1. To date, 24% of gentoo repro nests are incubating eggs, while 52% have hatched at least one chick. 24% have failed.

2. Up to now, 12% of chinstrap repro nests are incubating eggs, while 56% have hatched at least one chick, and 32% have failed.

3. We continue to monitor known-age penguins. Of the 29 known-aged gentoo penguins that initiated clutches 35% have hatched at least one chick, 41% continue to incubate and 24% have failed . Of 33 known-aged chinstraps that have initiated clutches, 49% have hatched at least one chick, 15% continue to incubate partial or full clutches, and 36% have failed.

4. We continue to conduct beach sweep in the evenings, weather and other work permitting. Overall numbers of known-age bands sighted during beach sweep remain steady, but low.

5. We continue to monitor brown skua territories for nesting activity. Nine pairs of brown skuas are now incubating partial or full clutches, while three pairs have failed.

6. We continue to opportunistically capture and pull feathers from selected chinstrap penguins for stable isotope analysis.

7. On 29 December, we put up the rain gutters at the skua shack, and are beginning to collect fresh water.

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8. On 30 December, we began diet sampling and collected samples from five nesting gentoo penguins using the wet offloading technique. Data on total mass of stomach contents, diet composition, and length and sex frequency of krill were recorded for each sample. To date, we have collected five diet samples from gentoo penguins. Gentoo penguin diet samples have consisted of a mix of Antarctic krill (*Euphausia superba*), as well as various squid and fish species.

9. Over the past week we have begun to tune and test radio transmitters for deployment on both gentoo and chinstrap penguins. A new receiver antenna setup promises to yield improved reception and range.

10. On 28 December, we launched a multidisciplinary expedition to Punta Oueste to check for brown skua nesting activity, as well as resight seals on Punta San Telmo. One skua territory was being attended, with one egg.

Pinnipeds:

11. As of 3 January, only four of our 31 CCAMLR attendance females had completed four trips to sea. Combined the females have completed a total of 68 trips with an average trip duration of 3.93 days (s.d.: 1.25, range: 0.35 – 7.10 days), which is slightly longer than the previous two years' mean trip durations (3.12 and 3.33 days respectively).

12. Our 16 TDR females have completed 46 trips to sea. Twenty one of these monitored trips included GPS capabilities. The mean trip duration for GPS capable TDR females is 3.63 days (s.d.: 1.03, range: 1.98 – 6.35 days).

13. Unfortunately, one of our attendance females with a GPS capable TDR has lost her TDR. Fortunately, we were able to find and recover the instrument, which will allow us to recover the data and redeploy the TDR if needed.

14. Since the loss of one study pup during the perinatal period, we have not lost any additional pups of attendance females.

15. We have continued to monitor the reproductive success of our tagged female population. To date, 11 of 100 (11%) tagged females that gave birth have lost their pups. Five of these are known to have not been caused by leopard seal predation. The remaining six have unknown causes of death. In addition, one tagged female that gave birth to twins lost one of the twins soon after birth. The second pup appears to be healthy and, while smaller than average, is growing rapidly.

16. Assuming pupping has completed at this time, our final natality rate for tagged female fur seals was 87.4%. Our tagged, breeding-age female return rate is currently 89.7%. We have, however, continued to see new juvenile males and females.

17. In addition to monitoring reproductive success, we have begun sexing and collecting DNA from the pups of tagged females. We have already sexed and collected DNA from 58 pups, including those of attendance pups. So far there are 25 males and 33 females.

18. At the final fur seal census of the season on 31 December, we counted 337 females and 546 pups (544 live and 2 new dead) on the US-AMLR study beaches. This is a reduction of only 33 pups over last year.

19. We collected 10 fur seal scats this week for diet analysis. As of 3 January, nine scats have been processed. All samples have been composed of krill, with only one otolith found.

20. On New Year's Day we completed our 10th weekly, Cape-wide phocid census. We saw four crabeater seals, three leopard seals, 200 southern elephant seals, and 16 Weddell seals.

21. While we have seen more leopard seals returning each week, we have not had nearly as many as last year at this time, when 14 tagged seals had been observed. Up to now, we have only resighted four tagged and three untagged leopards.

Weather:

22. The mean temperature was above freezing again for the week. The mean temperature for the week was 1.3ºC with a high of 7.0ºC and low of -1.8ºC. The warming temperatures have contributed to significant amounts of snowmelt. Three of four snow stakes are snow free with the fourth predicted to be snow free by the end of the week. The average wind speed was 9.3 mph with winds predominantly from the west (56.6%) followed by the east (29.7%). The maximum wind speed for the week was 45 mph. The total cumulative precipitation since 29 October is 1.32 inches, with 0.11 inches for the week. Mean daily solar radiation this week was 16,544 watts per sq. meter.

Camp:

23. In anticipation of our resupply in the coming days, we have worked on consolidating items in our freshies room and supply hut and have done a thorough cleaning of both areas. We are excited to refill our supplies of fresh vegetables and fruits.

24. We were finally able to put up our rain gutter system this week. With a few short bouts of rain and mist, we have begun adding to our fresh water supply, which is down to about four barrels.

25. With the rising temperatures we have been able to clear off nearly all walkways and deck spaces around camp.

26. The pull starter of one of our 3kw generators broke, however it was quickly replaced with a new one and is working splendidly. Our overall generator use continues to be low thanks to our improved solar and wind system this season, as well as a newly installed inverter.

27. With the loss of snow between camp and the landing beach, we have begun working on replacing the ATV's tracks with standard off-road tires.

28. We have officially put away our ski gear for the season. Even the remaining snow on the Cape has mostly turned to slush and made the use of skis a losing battle. Skis were given a tune-up before being put away.

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