U.S. Antarctic Marine Living Resources Program

2014-2015 Weekly Field Reports
Cape Shirreff, Livingston Island

Report 10
January 5, 2015

Seabirds:

1. In the fifth week since gentoo penguin peak clutch initiation 2% of the reproduction study plots have at least one chick, 26% are still incubating partial or full clutches and 72% have failed. To date, 27% of the chinstrap penguin reproduction plots have hatched at least one chick, 29% are still incubating eggs, and 44% have failed.

2. We continue to monitor known-age penguins. Of the 43 known-age gentoo penguins that initiated clutches 7% have hatched at least one chick, 44% continue to incubate and 49% have failed. Of 39 known-age chinstraps that have initiated clutches 31% have hatched at least one chick, 15% continue to incubate partial or full clutches, and 54% have failed.

3. We started beach sweep this past week. Beach sweep is a study in which we walk the beaches around the penguin colonies in an effort to resight banded non-breeding chinstrap and gentoo penguins. We are seeing many yearling chinstrap penguins; however we have yet to see a banded one.

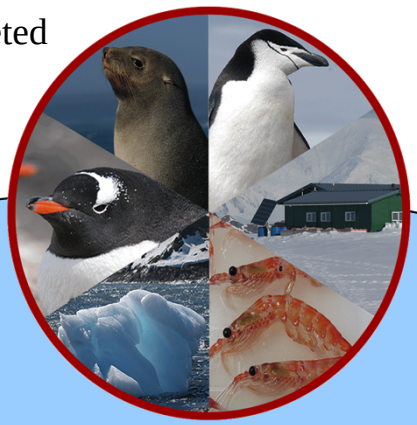
4. A juvenile macaroni penguin was seen on beach sweep the evening of the 4th.

5. We continue to monitor brown skua territories for nesting activity. The first skua chicks were seen on January 4th. Thirteen pairs of brown skuas are now incubating partial or full clutches, two pairs have chicks and six pairs have lost their eggs.

6. We have lost an average of 40 cm of snow since our arrival measurements on November 3rd. Since our last weekly measurement we have lost an average of 14 cm with the most loss on the western penguin colonies (26 cm) and the least amount of snow loss on the flats inland from the water several hundred meters (4 cm).

Pinnipeds:

7. Only one of our 32 CCAMLR attendance study females has completed six trips to sea. Ten (31%) have completed at least four trips to sea. Four females have lost their pups, and another two are missing and presumed lost. This reduces our sample size to 26.



National Marine Fisheries Service
Southwest Fisheries Science Center

8. Mean trip duration thus far is similar to last year at 3.33 days (s.d.: 1.72; range: 0.52-7.25; N=78)

9. Our time-depth-recorder (TDR) instrumented females have completed 35 trips to sea, averaging 2.91 days (s.d.: 1.68; range: 0.56-7.08). Twenty three of the monitored trips have been with GPS-capable TDRs.

10. Two of the pups from the three females that have completed six trips to sea have been weighed according to protocol. When the third female leaves on her 7th trip we will weigh her pup as well.

11. We took our first sample of CCAMLR pup weights on January 4th (30 days after the median date of pupping).

12. We continue to monitor our adult tagged female population and mother/pup pairs to get a measure of reproductive success and loss of pups due to leopard seal predation. Pups have begun entering the water and spend considerable amounts of time now playing in shallow water, making them easily accessible to leopard seals. Thus far the estimate of offspring mortality attributed to predation is 15.6%. Total mortality is 18.8%.

13. On December 29th we captured an 8-yr-old adult male fur seal to recover a geolocating light sensor (GLS) unit originally deployed on January 18, 2012 (three years at liberty!). The male was first ID-tagged (small tag with unique number) as a pup and then later at five years of age, he was instrumented with the GLS unit. We recovered the GLS, however, as expected with the long deplyment, the I/O ports were eroded and we were unable to download the data. It will be returned to the manufacturer for possible data recovery. Since removing the GLS unit, the male has continued to haul out every day in the same vicinity as originally seen this season (photo right).

14. Our fur seal diet protocol requires collecting 10 scats each week for analysis of fish bones, squid beaks, and krill carapaces. This Saturday we collected our third sample. To date 24 of 30 samples have been processed. All of the samples processed have been composed of krill. Twenty carapaces from each scat have been measured to derive krill length. Only two fish otoliths have been found; squid is absent from the samples.

15. On January 2nd we completed our seventh weekly Cape-wide phocid census.

16. Leopard seals continue to arrive and haul out on our study beaches. As of 1/5/15, we have recorded 61 sightings of 14 tagged seals, and have added photo ID records for another 11 untagged animals to our catalog.

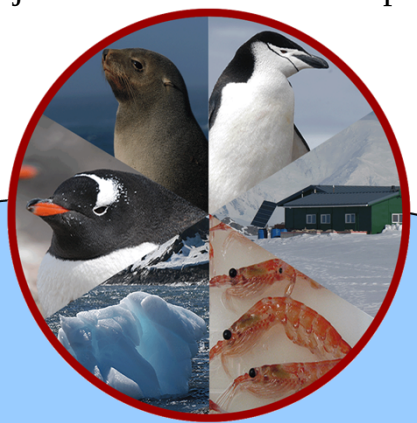
Weather:

17. The cape remains entirely snow covered with only the steep slopes free of snow. We have had a week long period of calm weather. Winds averaged 6.7 mph with a maximum wind speed of 40 mph. It was also our third week with a mean temperature above freezing. The mean temperature was 0.8C° (range: -1.0 to 4.2 C°). This was also the first full week of no precipitation. Our cumulative precipitation since early November remains at 29.2mm. The mean daily solar radiation was 15,688 W/m^2. Day length is now at 19 hrs 31 min!

Camp:

18. NOAA corps LTJG David Vejar arrived at Cape Shirreff on January 1st. The crew welcomed the accompanying resupply of fresh produce and other camp needs, including five barrels of gasoline, eight propane tanks, a large rotomold case for our new weatherport tent, and two UAS hexacopter systems. Many thanks to the NSF's *R/V Laurence M Gould*, the captain, crew, MPC, and the many volunteers (now en route to Palmer Station) for their support in getting David and our resupply ashore.

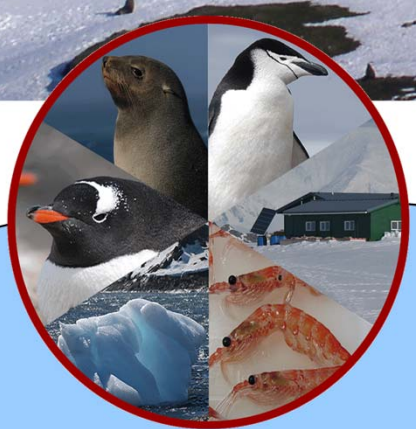
19. In anticipation of the arrival of Chilean INACH scientists, throughout the week our crew helped Renato prepare INACH's Guillermo Mann Field Station (adjacent to the AMLR camp site). Ten boxes of surplus fresh, frozen and dry goods were assembled from our camp for the INACH camp. The ten boxes were provided to replace items that unfortunately did not arrive as we had originally expected in our January 1st resupply.



20. One 3kw generator appears to have carburetor issues. We are planning to overhaul the carburetor sometime this week and continue to monitor its performance. Three other 3kw generators have been tested successfully.

21. We have not yet taken our ATV out of winter storage as the ATV shed is still surrounded by five feet of snow.

22. Because of the lack of precipitation this week, our fresh water supply had a net loss. We hope to get a few days of rain to top off our supply.



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