

2009-2010 Weekly Field Reports

Copacabana, King George Island

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Science report:

1. Penguins: The first of our 21-day chick measurements were done this week. When the oldest of the chicks in each of our reproductive study nests reaches 21 days of age, we weigh it and its sibling, which will give us an indication of their condition before crèching. We have been placing colored Velcro flipper bands on the chicks in our repro and known-age study nests, to be able to identify them for 21-day weights and so we can put stainless steel bands on the latter (chicks of known-age parents) when they are big enough. Several of these chicks will be large enough for stainless steel flipper bands in the upcoming week.

Radio transmitters (Tx) were deployed on 19 breeding Adélie penguins this week for the foraging trip duration study. We select an even ratio of males to females with two chicks under two weeks old and epoxy and zip-tie the Tx's to their lower backs. These instruments will remain on the birds for the entire breeding season and will fall off during their molt at the end of the season. A radio receiver/data logger at the hut receives and records the radio signals while the bird is on land, since the signal is lost when the birds enter the water. From this, we are able to determine how long the birds are on land versus at sea foraging (i.e., presence vs. absence), thus allowing us to get foraging trip durations for the whole breeding season. This varies depending on the availability and location of krill in the area.

We started our Adélie penguin diet samples this week. Diet samples of Adélie, gentoo and chinstrap penguins will be conducted throughout the season during each penguin's chick-rearing phase. Adults with at least one chick are captured as they return from the sea and then stomach lavaged using the wet-offload technique. From these stomach samples we determine the species, length, age class, and sex of the krill they consumed during their foraging trip, since krill is their primary food source. *Euphausia superba* is the most common type of krill eaten by the penguins, but the Adélie penguin diet samples this week contained a variety of krill species and size-classes, including the following: One sample with mostly *Thysanoessa macrura* (a smaller krill species); one sample with many juvenile (under 36mm) *Euphausia superba*; and the other samples with mostly male *Euphausia superba* in the 37-47 mm range.

Gentoo penguins in our reproductive study sites are still laying eggs, but the banding of one mate at each of our 100 study nests was completed this week. These study nests will be followed throughout the duration of the breeding season to determine egg-lay and loss dates, chick-hatch and loss dates, 21-day chick weights, and crèche age of chicks. Out of 74 known-age gentoo penguin nests, 51 are still active (11 already with chicks), and twenty-three have failed, although one did relay.

We have started our nightly "beach sweep" this week. Since the majority of penguins come ashore by the evening, each evening we walk around the penguin colonies recording all banded known-age Adélie and gentoo penguins we observe.

Copa had its first chinstrap penguin chick this week in one of its three active nests.



2. Skuas: Many skua nests were lost in the snow and wind storms this week throughout the entire western Admiralty Bay region, especially those on flat or in exposed locations. At Copa alone we lost four of our seven skua nests. Currently, there are two brown skua nests at Point Thomas with chicks. One unbanded breeding brown skua at Point Thomas was captured to band and measure -- the tarsus, culmen length, and depth are measured to aid us in sex and species determination, if necessary.

3. Snowy Sheathbills: No sheathbill nesting activity this week with the one pair still present.

4. Southern Giant Petrels: The giant petrel nest censuses for Copacabana and Point Thomas were completed this week. For Copa, there was about a 17% decrease in the total number of nests with eggs from last year, most likely due to the heavy snow conditions early in the season. At Point Thomas, however, there has been a small increase in the number of nests with eggs over the last three years.

5. Whales: Two solo humpbacks were observed in the bay this week.

6. Seals: There has been an increase in the elephant seals present in the Point Thomas area, as they start to come ashore for their annual molt. One elephant seal was branded with the mark 772 ST; this is the second seal we have seen this season with the ST brand. These are most likely from nearby Stranger Point, where the Argentines have studied these seals intermittently over the past several years. No leopard seal predations were observed.

Camp Activities:

We topped off all the rain barrels with more snow, just in time for the two new snow storms. A large quantity of glacier ice floated ashore one day, so we collected some and filled a fish tote with it for melt-water, to ensure we would have enough water for later in the season.

On Monday, 12/21, we had our annual Solstice party. Three Poles from Arctowski, plus several Chilean sailors (including the captain) from their Navy vessel "Lautaro", joined us for a nice celebration of the coming of summer. On Christmas Eve we went to the Polish station to visit our extended Antarctic family. We were also joined there by 10 members of the sailing vessel, Selma, from Britain, with many Polish folks aboard. It was a very nice evening for all.

Weekly Weather:

Just in time for the beginning of summer the snow has returned! We had a beautiful white Christmas with 4-6 inches of fresh snow. This new storm, and one on Saturday (12/26), covered all the newly open and snow-free land, and with the winds the drifts have deepened and temperatures fell below freezing.



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