

2012-2013 Weekly Field Reports

Copacabana, King George Island

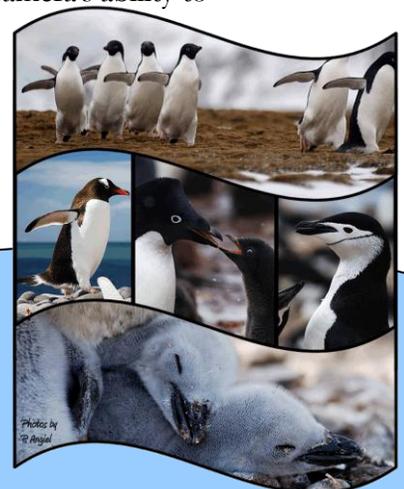
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October 14, 2012

Camp Activities:

We arrived in Admiralty Bay, King George Island, during the night of 13-14 October 2012, on board the ARSV *Laurence M. Gould* (LMG). Due to 40-50 knot winds in the morning, offload operations were postponed, hoping that the conditions would improve over time. The winds had decreased enough by the early afternoon to begin operations. Even with moderate surf and a 4-6 foot ice berm on the beach in front of Copa, we were able to land there, resulting in a much faster, albeit wet, offload. Three of our Copa team went ashore in one of the first zodiacs to start opening up the hut and preparing things for the coming loads of supplies and food, while the remaining two stayed on board to oversee operations there. There were moderate to high snow drifts around the hut (~4-5 feet), but the decks were relatively clear. There were drifts that needed to be cleared, however, to access the fish boxes in back and the storeroom window in front. The storeroom window was frozen shut, with a solid layer of ice covering the lower sash, so all the food items had to be carried through the hut instead of being passed through the window, causing some congestion in the main room, where the LMG Electronic Techs (ETs) were busy setting up and testing the radios (HF and VHF), Iridium phone and email system, and the computers. The ETs also turned on the power system, put up the wind generator, and made sure the gas generators started and ran well. We had many hands helping with the shuttle of supplies from the ship to the hut, and we completed the offload and camp opening chores in a few hours. We were able to unpack and put much of the food away in the storeroom, freshies room, and freezers, and sent most of the empty cardboard boxes and shipping containers back to the ship for disposal/retrograde. We are immensely grateful to all who helped make this year's Copa opening a huge success: Cara Ferrier (our new USAP POC), John Evans (our past USARP POC –here in spirit), Eric Hutt (LMG MPC), LMG ETs (Sheldon and Mike), the MTs (Krista and Jeremy), the MLT (Julie), Captain Ernest and the crew of the LMG, and all the Palmer scientists and staff (too numerous to mention by name) – we couldn't have done it without you all!

Science Report:

1. Over-winter Camera Deployment.: We installed a camera above the penguin colony in March 2012 in hopes of photographing the penguin colony below during the winter period. The camera was on loan from the AAD (Australian Antarctic Division) and we were using it to monitor the winter occupation of the resident gentoo penguin population as well as testing the camera's ability to operate over winter in the wet, moist climate of the South Shetland Islands. We are pleased to report that the camera worked well throughout the winter period, with only a few short hours – days where the lens cap was frozen shut.



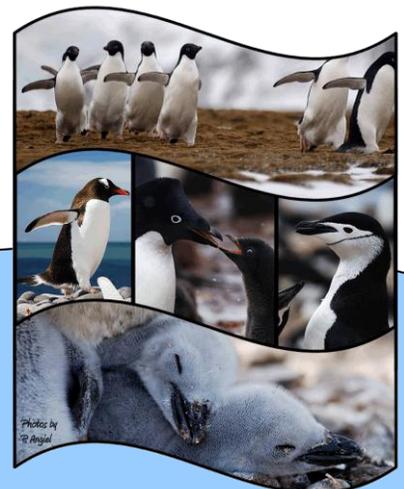
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We collected 5 photos daily at sunrise, half an hour after sunrise, local noon, half an hour before sunset and at sunset. A computer program in the camera moved the timing of the sunrise and set periods over the winter to correspond with local light changes. The gentoo penguins remained in attendance at the colony until mid-April when all penguins had completed their annual molt, then the entire population migrated away from the colony as pack ice moved into Admiralty Bay. The penguins first returned to the colony in early September with the retreat of pack ice from the Bay, left briefly again as winds blew ice back into the bay in mid-September, then returned for good following the ice departing and began occupying nest sites. The first Adélie penguins were also seen coming ashore in late September and their numbers continued to grow daily through the rest of September in to October.

2. GLS tag retrieval: We placed 52 small (2 cm²) GLS tags (light-sensing geolocation tags) on leg bands of 52 Adélie penguins with chicks at the close of last season in January, prior to the adults departing for the winter. We have now retrieved 34 of these tags in October from birds back at their breeding colonies where they are courting and nest building, in preparation for egg laying. The tags provide location data throughout the winter period, based on light levels. We have also pulled feathers from the birds when the tags were removed. These samples will provide dietary information using isotopic analyses and we expect to know where the animals spent the winter and the major prey items in their diets during that time. Detailed analyses of the tags and feathers will be done back in the lab following the field season.
3. Penguins: Adélie penguins were in pairs and occupying colonies when we arrived, but due to the snow level and lack of exposed pebbles, there was little, if any, nest-building activity taking place. While waiting for the first eggs to be laid, everyone has selected their Adélie penguin reproductive data collection sites throughout the colony and is in the process of mapping them. Each person is responsible for 5-8 areas of five nests each of both species (Adélie and gentoo) and will follow all nests daily to collect reproductive success and nest attendance data. The reproductive studies involve banding both members of Adélie penguin pairs, but only one member of gentoo penguin pairs, for a total of 200 Adélie and 100 gentoo penguins banded at 100 nest sites per species. Adélie penguin pairs will be followed daily to provide data on nest attendance and both species will be monitored for reproductive success during the incubation and chick brooding periods. Banded Adélie and gentoo penguins from the past three years will also be relocated to determine over-winter survival of the breeding population. In addition, all bands seen in the colonies from past years are recorded, both the returning known-age birds (banded as chicks) and the “old repro” birds (banded in previous years’ reproductive studies). The former will be used to determine age-specific survival rates of known-aged penguins for each species.



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Gentoo penguins were present when we arrived, but loosely occupying their colonies, leaving daily at dawn and returning throughout the day. This is still occurring, although more colonies are now being filled, particularly those in the higher areas. Gentoo penguins are more flexible than Adélie penguins in timing of clutch initiation, so are able to delay egg-laying when conditions are unfavorable, such as when there's too much snow in the colonies.

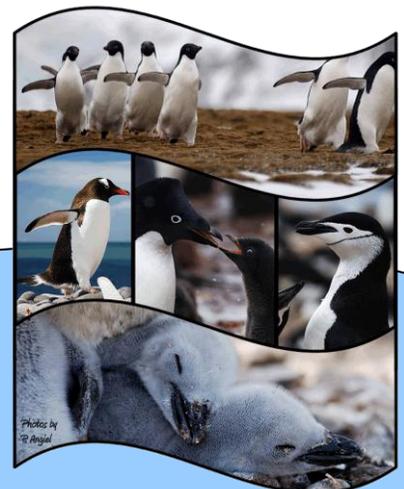
4. Skuas: The first brown skua was seen at Copa on Sunday, 21 October; a female from one of the pairs that controls part of the penguin colony. As the skuas begin to arrive, we record the arrival dates of each member of a pair at each skua breeding territory, and any other birds they associate with or are on the territory. All of the territories in the ASPA are monitored regularly, at least once a week, with the ones around Copa checked daily.
5. Seals: A crabeater seal was seen near Copa last week, which is not a common occurrence here, since this is a pack-ice loving seal. This is probably a result of the below normal temperatures and pack ice in the area lately. A fur seal was also seen on Copa Beach last week, as were several sub-adult male elephant seals. Elephant seals breed a few miles south of Copa, so it is not uncommon to see them at this time of year. The Poles informed us that there are two Weddell seals with pups near Arctowski, as well.

Weekly Weather:

Moderate to strong SSE winds on most days, often with snow. Most of the winds have been around 20-30 knots, with the strongest winds gusting to near 50 knots. Temperatures have mostly been well below freezing, averaging about 15-20oF, most days. Today, Tuesday 23 October, is the first above-freezing day we've had, with winds from the NW, resulting in a welcome melt-off of much of the snow around.

Hut Improvements and Maintenance:

The shelves and walls in the storeroom, pantry, and some of the other rooms, were wiped down with a bleach and water solution to control mold. The storeroom and pantry food items were also reorganized at the same time. Decks have been cleared of much of the snow and ice, with daily clearings as needed. We are still melting water in large pots in the hut and on the stove, due to the below average temperatures we've had since arriving. The gutters for the water collection system will be put up soon, now that the temperatures are above freezing.



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