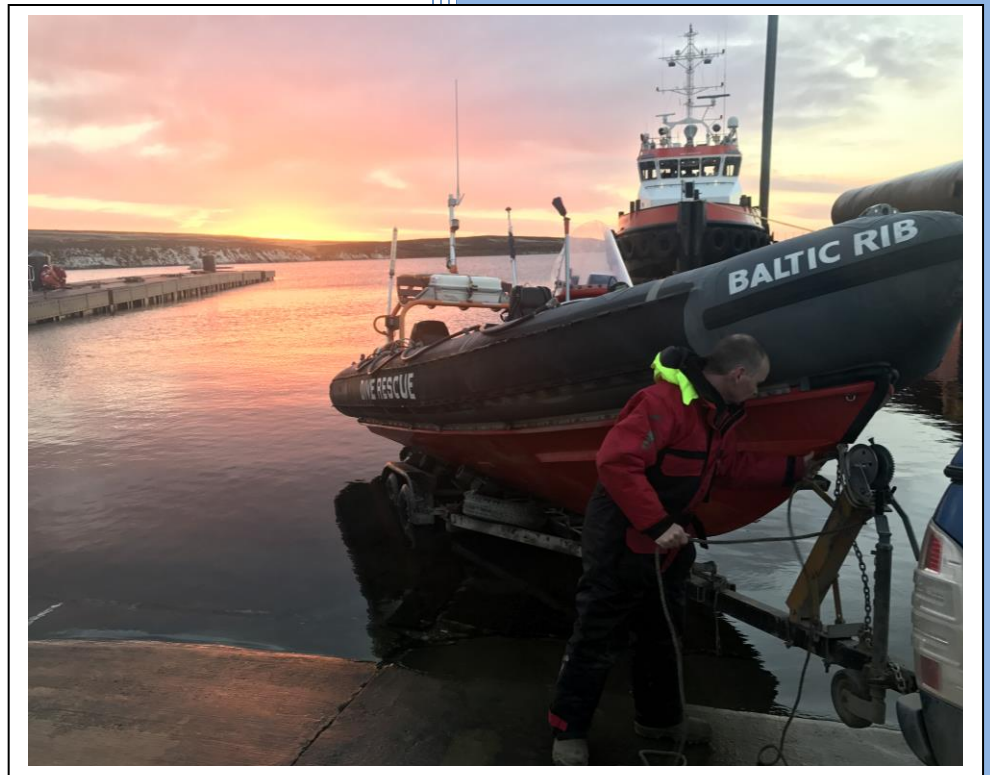




2017

DOKE Field Work Report Focal Survey #2 – Winter 2017



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SAERI
10/20/2017

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Grant Munro
Austral biodiversity

Background

South Atlantic Environmental Research Institute (SAERI) is leading a multi-partner project entitled 'Dolphins of the Kelp: Data priorities for Falkland's inshore cetaceans' (hereinafter DOKE), which is funded by the UK Government's Darwin Plus Funding scheme and the Falkland Islands Government (FIG). The project partners are Falklands Conservation (FC), Shallow Marine Surveys Group (SMSG), Austral Biodiversity, Oregon State University, and University of St Andrews. The aim of DOKE is to establish baseline data on the abundance, distribution, natural history and genetic diversity of the Falklands inshore cetacean populations to provide a scientific basis for conservation and ecosystem-based marine management initiatives. The target species are the Commerson's (*Cephalorhynchus commersonii*) and Peale's dolphins (*Lagenorhynchus australis*) although all cetaceans encountered are recorded.

The project is delivered through three complimentary work programmes: 1. island-wide transect survey, using line transect methods to estimate abundance of both species; 2. focal studies, carried out in three areas (A. Port Stanley – Port Williams – Berkeley Sound; B. Choiseul Sound; C. Port Howard – Many Branch) and using photo-identification and passive acoustic monitoring methods; 3. tissue sampling to determine genetic diversity, local population structure, and relationship to SW Atlantic contiguous continental stocks.

The purpose of this report is to describe the field work related to the second focal survey of the project, carried out in winter 2016. This document follows the Biopsy Report submitted by Scott Baker on the 20th of June 2017 summarizing the work done in January 2017 and the Focal Survey 1 – Summer 2016 submitted by M. Costa on the 25th of July 2017. Information about the study area, the boat, material and methods are found in the 'Focal Survey 1' report and in the 'Focal Survey Protocol Data Collection' file, also available on the SAERI website (<http://www.south-atlantic-research.org/research/current-research/dolphins-of-the-kelp>).

Summary

The field work was conducted in the winter of the 2017 from the 1st of June 2017 to the 6th of August 2017 in the three areas selected at the beginning of the project: A. Port Stanley, Port Williams, Berkeley Sound; B. Choiseul Sound; C. Port Howard/Many Branch. In total, 13 days were spent at sea from the 1st of June to the 08th of August 2017, of which 5 days were in area A, 6 days in area B and 2 days in

area C (**Figure 1**). The survey was interrupted for about four weeks from the 12th of June to the 9th of July due to the unavailability of our skipper, Steve Cartwright. For the last two days of survey the boat *Fram* was used instead of the *Baltic Warrior* due to a minor engine problem with the latter boat.

Navigation was carried out for 1050.9 km for a total of about 72 hours, of which 803 km were done in 'positive' effort, looking for dolphins (

Cetaceans were observed in 76 occasions with four species encountered, including Commerson's dolphin, Peale's dolphin, sei whale, and southern right whale (**Table 2**). The four species were observed in area A, while Commerson's dolphin was the only species observed in areas B and C (**Figure 2**).

Table 1). About 25 hours were spent in close association with cetaceans, taking photo-identification data.

People on board included crew members (MCOS and MGAR), one yearly volunteer (AGUE), volunteers (JSOL, PJEL, SCLE and NSMI) and PhD students (KBRI). Crew members provided training to volunteers and students on the following topics: use of GPS, use of DLR camera and underwater action camera; cetacean sighting and photo identification; group size estimation; introduction to research protocols; health & safety and good practices on board of small boats. The duration of the surveys reported in **Table 1** accounts for the training hours of the trainees.

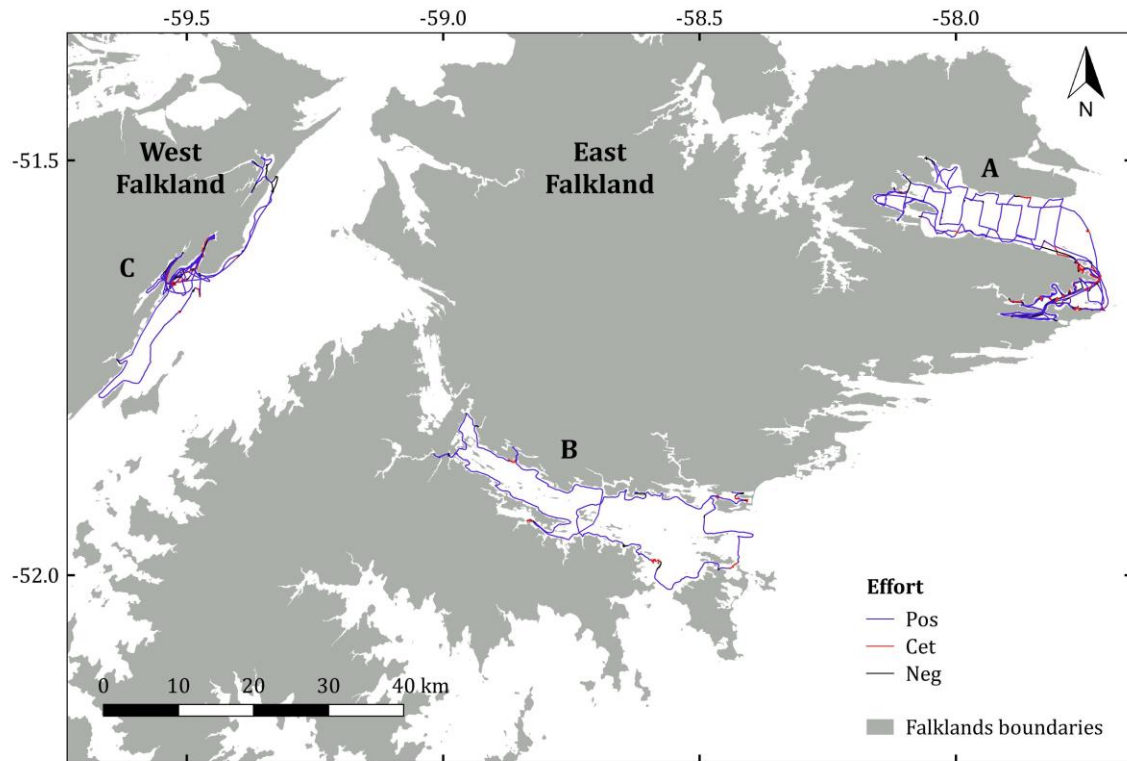


Figure 1 - Survey effort carried out from the 1st of June to the 8nd of August 2017, in the three focal areas. A. Port Stanley, Port Williams, Berkeley Sound; B. Choiseul Sound; C. Port Howard/Many Branch.

Cetaceans were observed in 76 occasions with four species encountered, including Commerson’s dolphin, Peale’s dolphin, sei whale, and southern right whale (**Table 2**). The four species were observed in area A, while Commerson’s dolphin was the only species observed in areas B and C (**Figure 2**).

Table 1 - Date, area, crew on board, and effort (total and ‘Positive’ kilometers, and total time) for each day of survey. Crew code: MCOS=Marina Costa; MGAR= Maria Garcia; AGUE= Amy Guest; KBRI= Katie Brigden; JSOL= Jenni Sol; PJEL= Pamela Jelbes; SCLE= Sasha Cleminson; NSMI= Ness Smith.

| Date | Area | Crew | Effort | | |
|------------|------|------------------|------------|---------------|--------------------|
| | | | Total (km) | Positive (km) | Total time (hh:mm) |
| 01/06/2017 | A | MCOS, MGAR, ELOW | 152.7 | 121.5 | 08:42 |
| 06/06/2017 | A | MCOS, MGAR | 144.9 | 104.4 | 08:09 |
| 07/06/2017 | A | MCOS, MGAR | 76.8 | 57.0 | 06:06 |
| 10/07/2017 | C | MCOS | 17.9 | 1.5 | 01:46 |
| 11/07/2017 | C | MCOS | 95.0 | 76.0 | 06:09 |
| 12/07/2017 | C | MCOS, KBRI | 78.8 | 62.8 | 05:29 |
| 13/07/2017 | C | MCOS, KBRI | 49.6 | 33.3 | 04:29 |

| | | | | | |
|----------------|---|------------------|---------------|--------------|--------------|
| 15/07/2017 | C | MCOS | 58.6 | 38.8 | 04:17 |
| 16/07/2017 | C | MCOS | 44.0 | 36.5 | 02:36 |
| 20/07/2017 | B | MCOS, JSOL, PJEL | 91.4 | 84.6 | 05:38 |
| 28/07/2017 | B | MCOS, SCLE | 100.9 | 81.9 | 06:39 |
| 02/08/2017 | A | MCOS, NSMI | 78.0 | 56.3 | 07:20 |
| 06/08/2017 | A | MCOS, NSMI | 62.2 | 48.5 | 04:44 |
| 13 days | | Total | 1050.9 | 803.0 | 72:09 |

Table 2 - Number of cetacean detections for each species (d=dolphin; w=whale), and for each area.

| Area | Species | | | | |
|--------------|-----------|----------------|------------|----------|-------------------|
| | All | Commerson's d. | Peale's d. | Sei w. | Southern right w. |
| A | 53 | 7 | 25 | 5 | 16 |
| B | 8 | 8 | 0 | 0 | 0 |
| C | 14 | 14 | 0 | 0 | 0 |
| Total | 76 | 29 | 25 | 5 | 16 |

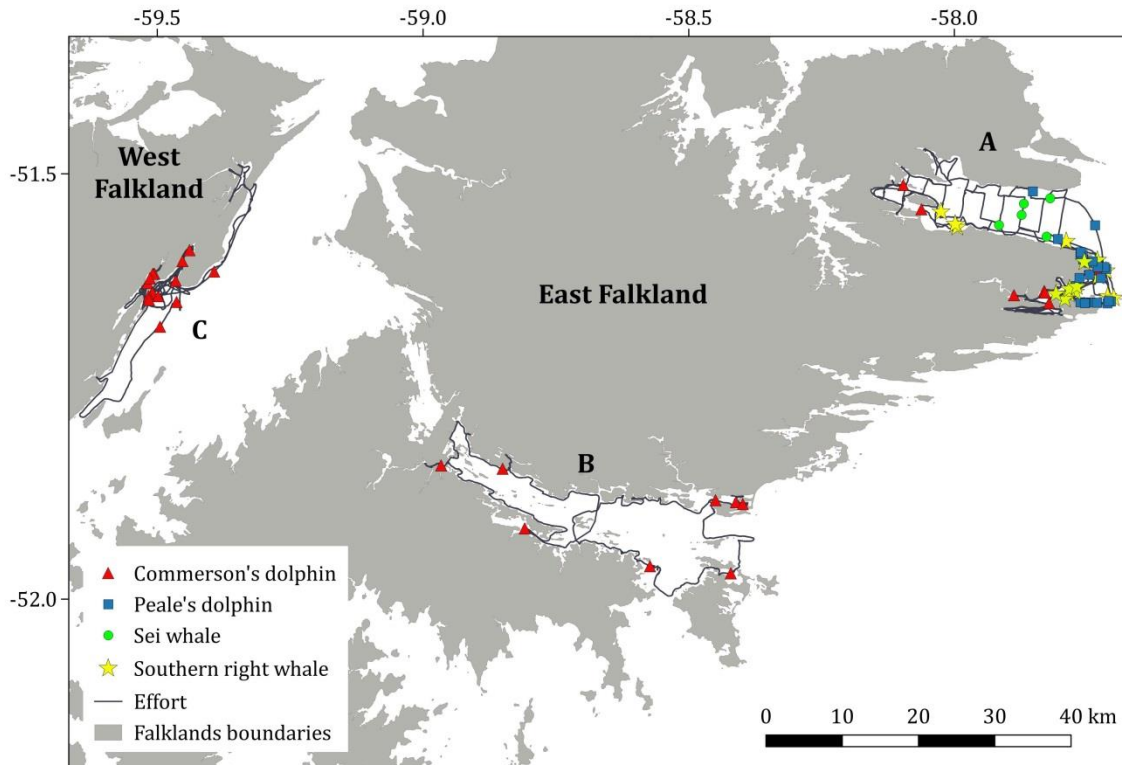


Figure 2 – Sighting distribution of cetaceans species encountered during the winter focal survey.

Out of the 76 cetacean sightings made, in 53 we interrupted the navigation and approached the animals to collect photo-identification data. Pictures were taken for three species, Commerson's and Peale's dolphins and southern right whale (**Table 3**). Matching and photo-identification work is ongoing.

Table 3 - Number of cetacean sighting and pictures taken for each species (d=dolphin; w=whale), and for each area.

| Area | All species | | Commerson's d. | | Peale's d. | | Southern right w. | |
|--------------|-------------|--------------|----------------|--------------|------------|--------------|-------------------|--------------|
| | Sighting | Photos | Sighting | Photos | Sighting | Photos | Sighting | Photos |
| A | 37 | 4,313 | 5 | 165 | 24 | 2,798 | 8 | 1,350 |
| B | 6 | 896 | 6 | 896 | 0 | | 0 | |
| C | 10 | 1,453 | 10 | 1,453 | 0 | | 0 | |
| Total | 53 | 6,662 | 21 | 2,514 | 24 | 2,798 | 8 | 1,350 |

Average group size for the four species encountered was calculated for all sightings made, for all the species, and for the three areas (**Table 4**).

Table 4 - Mean group size (Mean), standard deviation (SD), range and sum of individuals observed calculated using sightings (n) made in during the **winter** survey, for all the species, and for the three areas.

| Species | Area | n | Mean | SD | Range | Sum of individuals |
|----------------------|----------|----|------|------|-------|--------------------|
| Commerson's dolphin | A | 7 | 2.57 | 1.40 | 1-5 | 18 |
| | B | 8 | 5.75 | 6.18 | 1-20 | 46 |
| | C | 14 | 8.50 | 5.45 | 2-18 | 119 |
| Peale's dolphin | A | 25 | 8.08 | 6.98 | 2-27 | 202 |
| Sei whale | A | 5 | 1.60 | 0.89 | 1-3 | 8 |
| Southern right whale | A | 17 | 2.71 | 2.57 | 1-8 | 46 |

Contrary to what happened during the summer survey, only a few sightings of Commerson's dolphin were made in winter in area C. Commerson's sightings and individuals were fewer in winter than summer also for areas B and C although with smaller differences. On the contrary, Peale's sightings and number of individuals were higher in winter than in summer in area A (**Table 4, Table 5**).

Table 5 - Mean group size (Mean), standard deviation (SD), range and sum of individuals observed calculated using sightings (n) made during the **summer**, for all the species, and for the three areas.

| Species | Area | n | Mean | SD | Range | Sum of individuals |
|---------|------|---|------|----|-------|--------------------|
|---------|------|---|------|----|-------|--------------------|

| | | | | | | |
|---------------------|----------|----|-------|-------|------|-----|
| Commerson's dolphin | A | 9 | 5.56 | 3.91 | 1-13 | 50 |
| | B | 15 | 5.07 | 4.40 | 1-18 | 76 |
| | C | 54 | 12.26 | 14.11 | 1-55 | 662 |
| Peale's dolphin | A | 23 | 3.57 | 2.87 | 1-20 | 75 |
| | B | 1 | 2.00 | na | 2 | 2 |

C-POD

On the 11th of July 2017, the first service to the C-PODs was carried out. However, apparently due to a strong storm, the two units positioned respectively 1000m north (2089) and 1000m southeast (2087) the harbor canal, were lost (**Table 6**). The anchoring system used to fix the C-PODs to the bottom weighed 70 kg, the maximum weight we estimated to be manageable by hand from a RHIB.

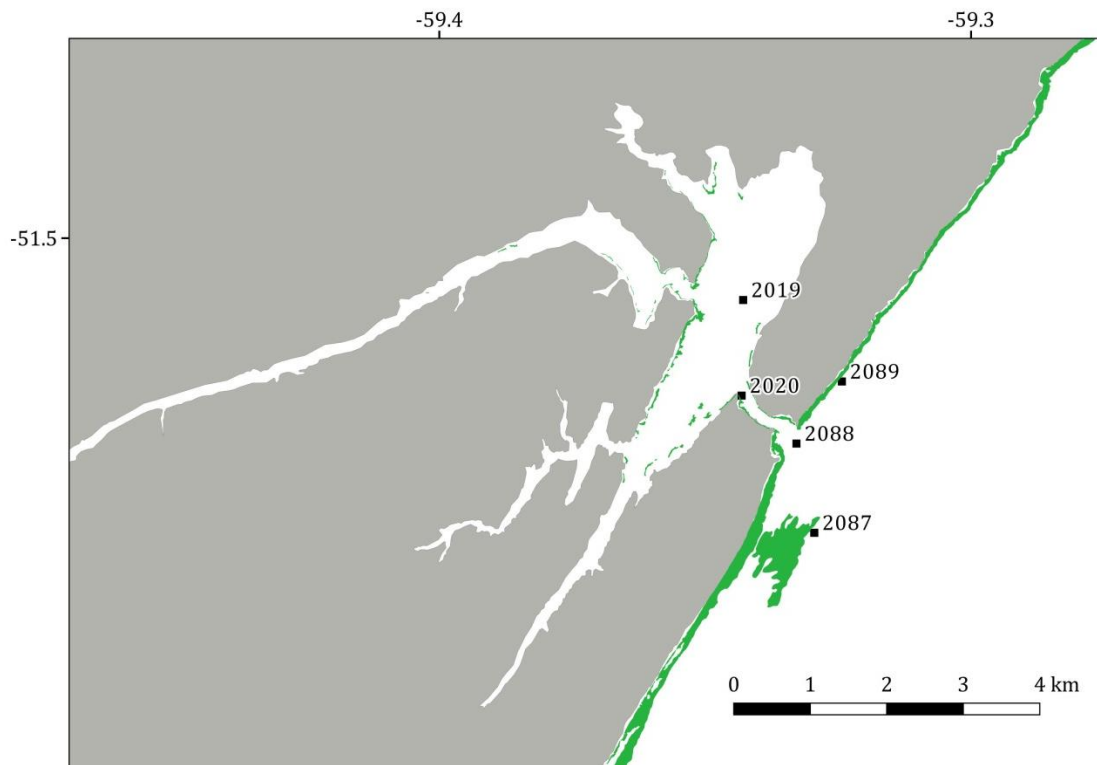


Table 6 - C-POD positions (black squares) at Many Branch Harbour, West Falkland. The units 2087 and 2089 have been lost during a storm occurred between mid-April and mid-July 2017.

The three surviving C-PODs units were recovered and, after downloading the data and replacing the batteries, were re-deployed in the same position. The unit 2088 was found damaged in its external shell, due to corrosion (**Figure 3**). The stainless steel hose clips, isolated with duck-tape, we used to fix the C-POD to its plastic

support is likely to have caused the corrosion. The stainless steel clips were replaced with plastic cable fastener (**Figure 4**).

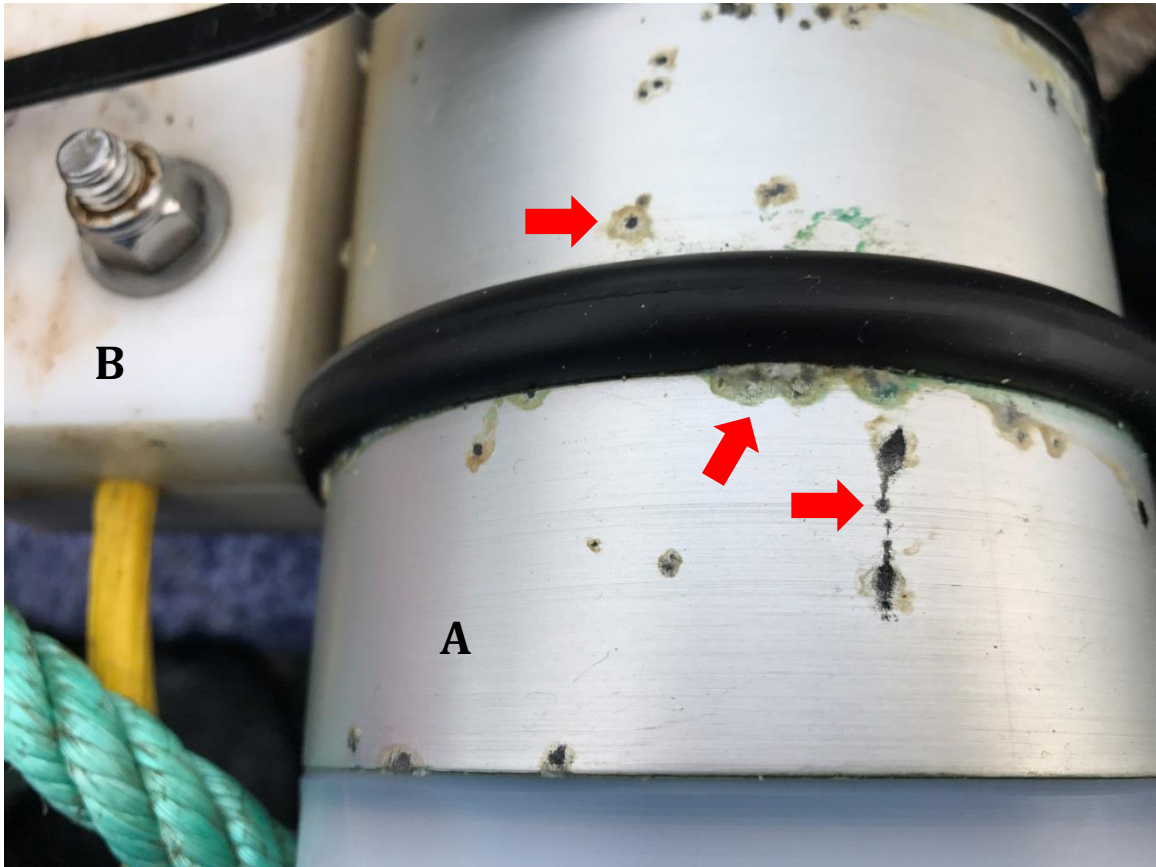


Figure 3 - Corrosion (red arrows) found on the C-POD unit 2088 and likely due to the stainless steel hose clips used to fix the C-POD (A) to its plastic support (B).

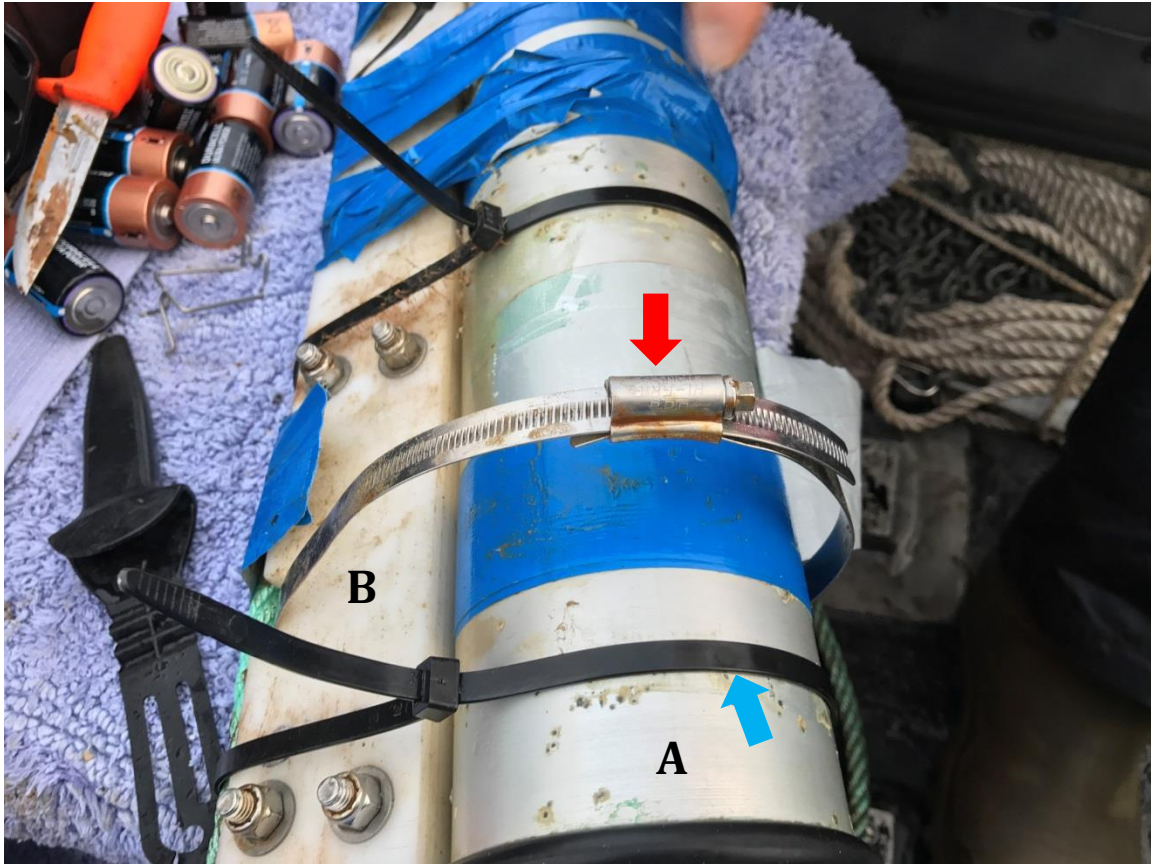


Figure 4 - The stainless steel hose clips (red arrow) used to fix the C-POD (A) to its plastic support (B) were replaced by plastic cable fastener (light blue arrow) to avoid corrosion.

Conclusion and next steps statement

The first winter focal survey was conducted successfully. As expected, there was a difference in the number of sightings and individuals observed in winter compared to those observed in summer. In particular, Commerson's dolphins seemed to have 'disappeared' during winter. Where they go is an interesting question we would like to answer in the future. Peale's dolphins however appeared, , more abundant during winter.

We lost two of the five C-PODS that were deployed at Many Branch harbor. However, data collected by the three surviving units should provide information about how Commerson's dolphins use the harbor in daylight and nighttime hours, and between seasons.

The next survey (the second summer survey) will be carried out in the period November-December 2017

Acknowledgements

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