

ORCA Foundation Quarterly Work Report

(1 January 2018 – 30 March 2018)

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A NEW CHAPTER

The start of 2018 brought a brand new team to the ORCA Foundation Volunteer Program. With 3 new staff members (two experienced marine biologists and a conservationist) the program now hosts a wide range of marine related research, conservation and education activities. January was just crazy! The new team had to move into the volunteer house and prepare everything for the arrival of our first group at the end of the month, all while getting to know each other and learning to work together. A lot of time was spent refining existing program documentation and activities, planning and developing new activities and research projects, applying for funding, research permits and permissions, and testing project designs in the field. Before the team had time to take a breath the first volunteer group had arrived and the 2018 program officially kicked off. And what a ride it's been so far... The team is still learning every day, and with the assistance from volunteers (including critical but constructive feedback forms!), the program keeps getting better and better as they grow. Read further for a short report about our work activities over the last 3 months.



CONSERVATION, EDUCATION & OUTREACH

River health assessments (mini-SASS evaluation)

Since January a total of six river health assessments (mini-SASS) were completed at two different locations along the Bitou River. This was done by examining macroinvertebrates found in the river which help to determine its overall health. The score indicated that the river is currently in very poor condition (possibly due to pollutants from further upstream or nearby farming practices). Results were fed into the online miniSASS database. When compared to previous entries from past assessments we can determine whether the health of the river is improving or deteriorating. In October of 2017, the rivers health was determined to be "very poor". However when tested in February 2018 the river was found to be "fair". It therefore had improved over that period of time. The river's health, however again deteriorated to a "very poor" level the next time it was tested in March 2018. Future assessments are necessary to monitor possible seasonal influences on river health.



Fig. 1. A) Volunteers examining and identifying the macroinvertebrates found in the Bitou River. **B)** A volunteer collecting the macroinvertebrates from the river.

Assistance at SANCCOB seabird rehabilitation centres

The seabird rehabilitation centre in Port Elizabeth, SANCCOB, was visited three times since January. Volunteers assisted with general maintenance around the centre and were able to attend a seabird feeding session involving African penguins, Cape gannets and cormorants. Volunteers also assisted with general maintenance of the facility which involved scrubbing and cleaning boulders in the holding areas, cleaning the clinic, dusting shelves in the education classroom, replacing old sand in the penguin enclosure, removing unwanted weeds from the entrance walkway, repositioning stones in the parking area and cleaning out holding areas to prevent the spread of diseases.



Fig. 2. A) Volunteers scrubbing rocks in the main holding area. **B)** Volunteers replacing sand in the penguin enclosure.

Alien plant clearing

Alien plant clearing was done during a trip to the Brackenburn Nature Reserve where volunteers were asked to remove seedlings of the invasive Black Wattle. This required volunteers to search underneath scrubs to locate and remove plants with the use of their hands. They were required to remove plants, roots and all, to prevent resprouting. The foundation now also assists with alien plant clearing in partnership with the Bitou Municipality. A site in Plettenberg Bay town centre just off of Marine Way has been the focus during two operations. Here, volunteers removed invasive species such as Lantana. Small plants were cut with the use of clippers and saws. Gloves and gumboots were necessary to protect the hands and feet of volunteers as the species have numerous spiny thorns. Larger plants were cut down as best as possible and “Kaput” poison was painted on the stumps, which kills the plant to prevent regrowth. The volunteers are currently still busy with this site and plan to return in the following months...



Fig. 3. A) Volunteers removing alien plants by the roots. **B)** The “Kaput” poison being applied to the plant where it was cut down.

Assistance at Knysna Animal Welfare Services (KAWS)

The Knysna Animal Welfare Society (KAWS) was visited once every two weeks since the end of January. Volunteers assisted with the walking of the dogs around the designated area. They also played with the dogs and cats to familiarize them with people to improve their chances of being adopted. So far we have been happy to see that many of the dogs we have walked have been adopted and found homes. One dog, Bear, is a volunteer favourite as he has the happiest personality among the lot, and is so soft and furry. The volunteers thoroughly enjoyed giving him a good brush.



Fig. 4. Volunteers walking the dogs from the Knysna animal welfare society.

Beach clean-ups and surveys

Beach clean-ups and surveys were done as often as possible. On the way out volunteers search the dune areas and then return along the shoreline. Most beach debris was found amongst the dunes. The majority of the material collected was identified as plastic bottle caps, straws, string, cigarette butts, sweet wrappers and alcohol bottles. All rubbish collected was brought back to the ORCA house where it was sorted and placed into the relevant recycling bins. During beach clean-ups volunteers also recorded stranded marine animals. Their GPS locations were recorded, carcasses photographed and reported to the Plettenberg Bay Marine Animal Stranding Network. Stranded animals ranged from marine mammals to seabirds, and something that really fascinated some of our volunteers, the jellyfish. Cetacean and seal stranding response events are reported in more detail under the research section.



Fig. 5. A) Volunteers with a jellyfish they found while on one of their beach surveys.

Assistance at Siyakula crèche

Every Thursday the Siyakula crèche (located in Qolweni Township) welcomes ORCA volunteers to assist with lessons, read stories and play games with children. Volunteers drew a picture for the kids depicting the sky, the sand and the beach and started off by teaching them about words starting with the letter “S”. This picture has been used for all the lessons so far and the kids have been taught about the various animals that live in the sky, the sand and the sea. These animals include, birds, fish, whales, dolphins, turtles, seals and even the starfish. The kids were also taught how to spell these words and the volunteers help them with their writing. Many of the children struggle to write the letters “s” and “e”, either writing them upside down or back to front. The stories were always fun and the children really enjoyed them. They especially enjoyed it when they were allowed to answer questions about the story. Games included fish and dolphins, Simon says and duck duck goose, one of their favourites!



Fig. 6. A) Volunteers reading the children a story. **B)** One of the volunteers showing the children how to spell the word “starfish”. **C)** The volunteers playing the “dolphins and fish” game with the children.

BIRD RINGING WITH NATURES VALLEY TRUST

ORCA Foundation staff and volunteers joined up with Nature's Valley Trust on a number of occasions to assist them with their regular bird ringing research. The bird ringing takes place at Kalanderkloof and our volunteers get to see and learn about a range of different bird species. Along with the usual Cape white-eyes and forest canaries, we have also seen some interesting species such as the Cape batis, Chorister's robin and Cape sugarbird. Our volunteers also enjoy listening to the great wealth of knowledge delivered by Dr. Mark Brown during these sessions.



Fig. 7) ORCA volunteers release two captured Cape white-eyes which were ringed by the NVT team for future identification purposes.

CETACEAN RESEARCH

Cetacean stranding response and necropsy

Between January and the end of March, our biologists, who are part of the Plettenberg Bay Stranding Network and act as agents for the Port Elizabeth Museum, responded to three cetacean strandings.

Two of these strandings were of bottlenose dolphins (*Tursiops aduncus*), one of our coastal dolphin species which is commonly seen here in Plettenberg Bay. The first of these strandings was a very decayed adult reported along Keurbooms beach which had much of its flesh missing, thereby exposing much of its vertebral column. The second was a bottlenose dolphin calf reported in Brenton Bay by members of the public. Standard measurements and a few samples were collected.

The third stranding was of a 12.4m male Bryde's whale (*Balaenoptera brydei*) near Wilderness. ORCA staff and volunteers assisted Dr. Gwen Penry, a local expert on the species, with the collection of standard measurements and some skin, blubber and muscle samples. Although the whale had already been dead for some time and was quite decayed, this was still a rare and exciting opportunity for our volunteers to see such a large marine mammal fully exposed. Dr. Penry stated that the cause of death was difficult to determine, as there were no signs of shipstrike or entanglement, and that the animal may have died due to old age or illness. Despite the fact that the species is present along the South African coastline year-round, it is not common for these animals to wash ashore on beaches. This stranding event was therefore a valuable opportunity to collect data on the species.



Fig. 8. A) The collection of measurements from an Indo-Pacific bottlenose dolphin calf in Brenton Bay. **B)** ORCA Foundation staff and volunteers assisting Dr. Gwen Penry at a Bryde's whale stranding near Wilderness.

Opportunistic boat based surveys with Ocean Blue Adventures

Since January, we have conducted 44 opportunistic surveys with Ocean Blue Adventures to collect data on the cetaceans and marine life of Plettenberg Bay. During these trips we encountered cetaceans on 80 occasions and recorded 175 sightings of seabirds, seals, sharks, turtles, boats and fishermen. Most of the cetacean encounters were of bottlenose dolphins (31 sightings) and Bryde's whales (29 sightings), with 17 encounters of Indian Ocean humpback dolphins (*Sousa plumbea*) and only three sightings of common dolphins (*Delphinus capensis*). The species sighted represent the usual aggregation of cetaceans in the area at this time of year, when the migratory whale species are feeding off Antarctica.

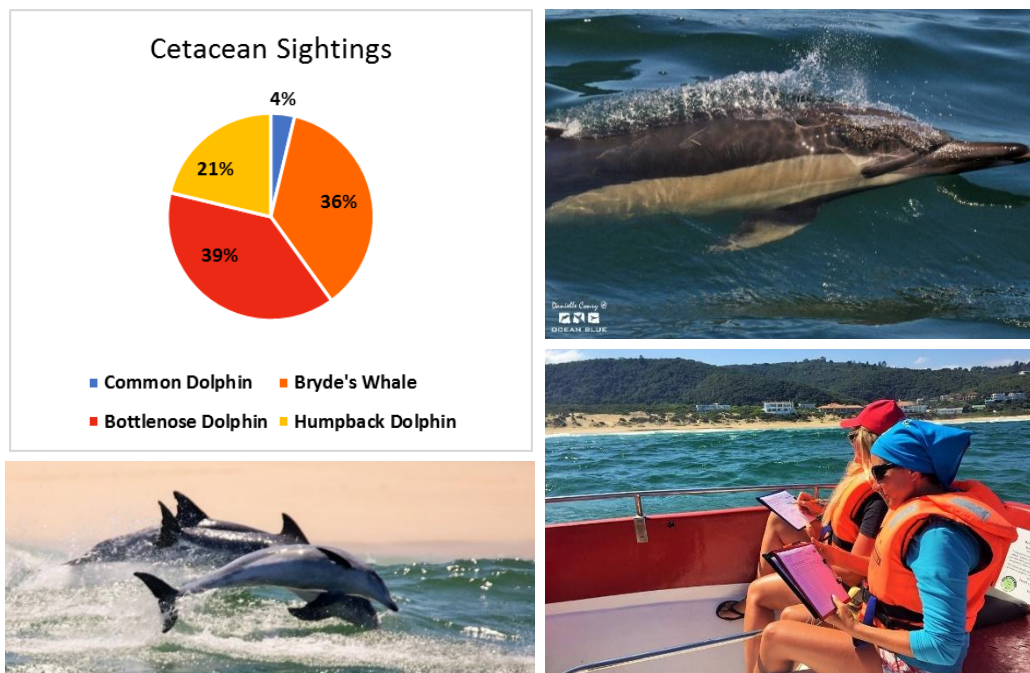


Fig. 9. A) The percentages of cetacean species encountered during 44 opportunistic trips. **B)** A common dolphin surfaces to breathe. **C)** Bottlenose dolphins jump exuberantly from the back of a wave along Keurbooms beach. **D)** Volunteers recording sighting and effort data during an Ocean Blue trip.

During our time at sea, ORCA staff and volunteers observed a number of interesting sightings and recorded a number of uniquely marked individuals through the use of dorsal fin photo-identification, as well as resighting a number of familiar dorsal fins. We recorded an interesting Bryde's whale with a deep notch in its dorsal fin, and a white scar just to the front of its dorsal fin. It's photo will be catalogued so that we can recognise the individual whenever it is resighted in future. A number of known humpback dolphin individuals were also resighted during our trips, including individuals named Roslynne and Grey. Our cetacean researcher has encountered Roslynne and Grey here in Plettenberg Bay previously. She is always happy to see familiar dorsal fins and keeps a record of all new and resighted individuals.



Fig. 10. A) Indian Ocean humpback dolphins photographed for identification purposes. **B)** A distinctive Bryde's whale photographed for future identification.

On 6 March, we observed some exciting behaviour in our two inshore dolphin species. On our first trip for the day, we encountered a large group of Indo-Pacific bottlenose dolphins which were dispersed across a large area just offshore of the breakers. Every now and then we would see the white belly of a dolphin racing just beneath the surface before it broke the surface with a splash. During a few of these events we witnessed the dolphins snatching fish during the splashing. They were feeding! Bottlenose dolphins are known to have a variety of feeding techniques and this particular behaviour is known as "snack feeding" or "snacking". This behaviour is characterised by swimming belly-up near the water's surface where prey is trapped and chased until being caught. Although dolphins of all ages are observed snacking, it is most commonly seen in calves. In fact, in Shark Bay, Australia, it is the first foraging behaviour learnt by bottlenose dolphin calves. Now you may also wonder why they would chase the fish belly-up. Well, as it turns out, dolphins have good binocular vision beneath their heads and so swimming belly-up allows them to focus on the fish with both eyes. To our surprise, we also observed Indian Ocean humpback dolphins snack feeding off Central beach on our second trip. The white flash of the belly was visible as the animal chased the fish and then caught it in a splash at the surface. The animal surfaced normally again with the fish in its mouth at which point we managed to snap a photo. What an exciting day!



Fig. 11. A) Bottlenose dolphin snack-feeding off Keurbooms beach. **B)** Humpback dolphin surfacing with a fish in its jaws.

PINNIPED RESEARCH

Seal stranding response and necropsy

The past three months was a particularly busy time for our seal biologist. Between January – March a total of 37 dead Cape fur seals were reported ashore between Tsitsikamma and Buffalo Bay, mostly on Robberg and Keurbooms beaches. All were attended to by our biologists, mostly with assistance from ORCA Foundation volunteers. 20 carcasses were fresh enough to perform brief necropsies or collect external samples for ongoing research at the Port Elizabeth Museum. ORCA volunteers further assisted with four full necropsies involving fresh seal carcasses, two of which was lead by Dr. Greg Hofmeyr and veterinarian students at the Port Elizabeth Museum.



Fig. 12. A) Dr. Greg Hofmeyr from the Port Elizabeth Museum leading a necropsy (post-mortem dissection) demonstration on a juvenile Cape fur seal carcass. **B)** ORCA Foundation volunteers assisting biologists of the Plett Stranding Network during a full necropsy on an adult female Cape fur seal carcass.

Furthermore, our team responded to two reports of injured Cape fur seals ashore. The first, a yearling (juvenile), was reported coming ashore frequently on a public beach in Buffalo Bay. After assessing its condition and behaviour our biologists determined that the seal was in good condition and chose this particular sandy beach as a resting site. Due to constant harassment from the public, and the possibility of someone getting bitten, the seal was captured, tagged and released on a secluded beach situated roughly 15 km east in the Goukamma Nature Reserve. The seal was seen hauling out here to rest on a further 10 occasion over the next two months. It was monitored by Wayne Meyer and his team from the Goukamma Nature Reserve (Cape Nature), who confirmed our accurate assessment and success of the necessary

intervention with regular updates on its movements and condition on the Plett Stranding Network WhatsApp group.



Fig. 13. A) ORCA Foundation volunteers assisting biologists of the Plett Stranding Network during the capturing, sampling, tagging, translocation and release of a young Cape fur seal that was moved from a busy public beach to a more secluded area in the Goukamma Nature Reserve. **B)** Successful release of the tagged seal who's frequent return was subsequently monitored by local Cape Nature rangers.

Another live seal, badly injured, was reported ashore at the Storms River Mouth in the Tsitsikamma National Park. The large adult male came ashore on a small public beach with both its eyes ruptured and two puncture wounds to the skull. Upon arrival at the scene our biologists took lead in crowd control, taping off the area and warning the public about the dangers of approaching an injured seal. In collaboration with the Port Elizabeth Museum, South African National Parks and the Department of Environmental Affairs, a decision was taken to euthanize the animal. The carcass was subsequently transported to Plettenberg Bay where ORCA volunteers assisted our biologists with a full necropsy. Sadly, two small calibre rifle bullets were found lodged in its skull, the impact of which probably caused swelling in the brain and the rupture of its eyes, thus rendering the seal not only blind but also in a great deal of pain. Conflict between seals and particularly squid fishermen in this region is common. Samples collected will be used as part of our seal biologist's planned PhD on seal-fisheries interactions.



Fig. 14. ORCA biologist performing crowd control and preliminary assessments until relevant authorities arrived to euthanize a shot Cape fur seal that came ashore near Storms River mouth.

Seals in estuaries monitoring

Since January we have performed 21 kayak and boat-based photo-ID surveys in the Keurbooms River estuary. Interestingly, only 1-3 seals were encountered during each survey. Thus far we have identified three seals that regularly frequent the estuary, all displaying unique flipper scars which makes them easily recognisable. Commonly observed behaviours include resting, travelling and predated on a range of estuarine species including spotted grunter, two mullet species, octopus and cuttlefish. Seals have been sighted at various locations along the entire survey route, from the river mouth all the way up to Whiskey Creek, roughly 12 km upstream. Although we have received many anecdotal reports from river fishermen, interactions with recreational boat and shore anglers appear negligible as none were observed during any of the surveys. There is however potential for resource competition. In collaboration with the PE Museum, we intend to collect more data in order to determine the seasonal presence of Cape fur seals in the estuary, their movements, behaviour and potential impact on vulnerable estuarine fish species that are also of recreational and conservation concern. In addition, we aim to use long-term data to place the possible impact of river specialists into context with current recreational fishing pressure, which we also record.



Fig. 15. Top row) Two specialist seals that regularly frequent the Keurbooms River estuary, aptly named “stumpy” and “pinkie”. **Bottom row)** Seals preying on octopus and spotted grunter in the Knysna and Keurbooms River estuary.

Robberg land-based observations

Since the end of January we have performed 46 dedicated land-based observation sessions from 8 cliff-top vantage points along the Robberg Peninsula nature trail. Our volunteers record movement behaviour and group size of Cape fur seals travelling in the water, as well as the presence of great white sharks, dolphins, whales, tourism vessels and fishermen. In collaboration with the Port Elizabeth Museum we plan to continue monitoring seal-shark interactions in the Robberg Marine Protected Area (MPA) to study the seasonal impact of shark presence on seal movement behaviour and group size. Data will be complimented with opportunistic boat-based sightings of sharks, seals and shark-inflicted wounds on seals (observations made onboard OBA vessels and assessment of wounds on seal carcasses washed ashore). We also started recording recreational fishing activity and possible interference by seals. We intend to use this data to validate fishermen perceptions (via questionnaires) on the operational impact of seals on shore angling catches in Robberg MPA. Although independent of the Robberg MPA resonation process, results will form part of our biologists broader PhD project, which aims to update the current nature and extent of seal-fisheries interactions in the Agulhas Current to inform management with scientific advice.



Fig. 16. A) ORCA volunteers performing dedicated land-based observations from cliff-top vantage points on Robberg Peninsula. **B)** Recreational shore anglers fishing from Robberg Point. There is a permanent presence of seals at the breeding colony on Robberg Peninsula. Seals are constantly observed swimming along the Northern edge of the peninsula as they travel to and from feeding areas far out at sea.

Seal scat processing and prey remain identification

During March volunteers assisted our biologists with routine processing and preliminary prey remain identification of 28 scats collected at the Robberg seal colony. Each scat was soaked and prey remains such as fish otoliths, eyeballs, vertebrae, scales, spines and cephalopod beaks separated using fine meshed sieves. All samples were transported to the Port Elizabeth

Museum for further analyses. Data from monthly scat samples will be used to update the current diet of Cape fur seals that haul out on Robberg Peninsula. Results will aid in future studies that aim to examine the role of seals in the Agulhas Current. This is especially important in terms of physical (environmental) and biological (prey availability) changes that are taking place in this ecosystem.



Fig. 17. A) ORCA Foundation volunteers assisting biologists with seal scat processing and preliminary prey identification. **B)** Chokka squid hard parts (squid beaks, statoliths and sucker rings) commonly found in seal scats. Prey remains of fish (not pictured here) include otoliths, eyeballs, vertebrae, scales and spines.