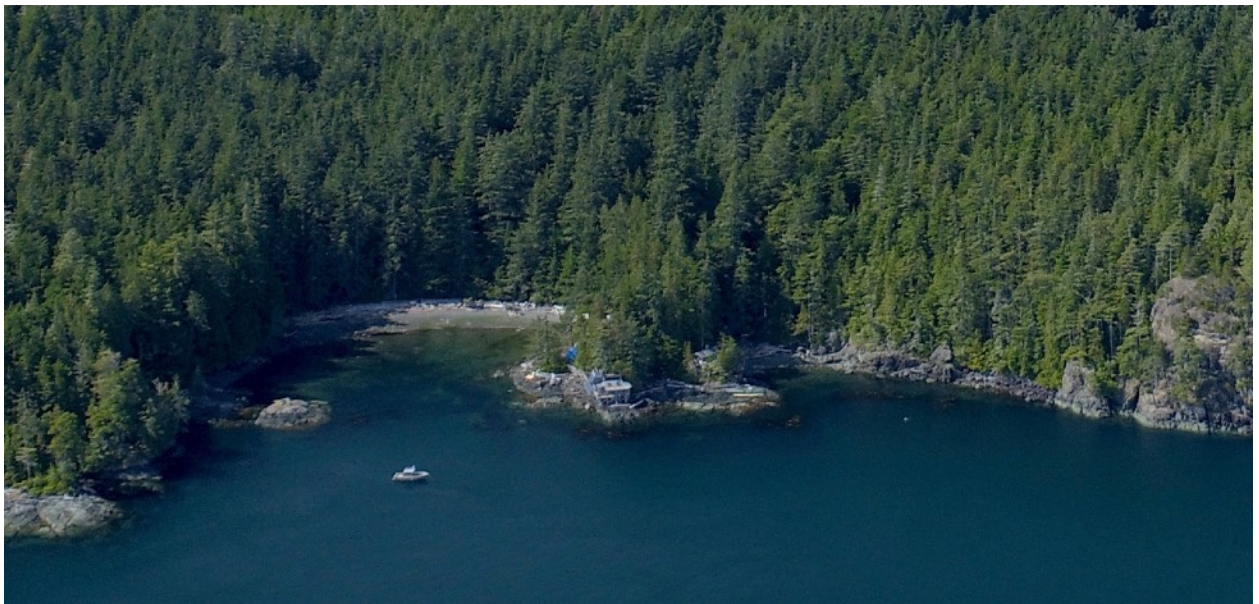


Pacific Orca Society: Annual Report 2017



Presented by Helena Symonds and Paul Spong
Pacific Orca Society/Orcalab

Report topics:

- Overview: Daily Life, daily routines
- Explore: Remote Cameras & Network Systems
- Research/Whales
- Corky
- IWC
- Volunteers, Visitors, Carpenters & Caretakers

Overview: Daily Life, daily routines

A long time ago, Dr Ian MacAskie came for a brief visit to Hanson Island. We had long admired this venerable scientist who with Dr Michael Bigg pioneered orca research on the West Coast. Dr MacAskie began work with the Department of Fisheries and Oceans (DFO) in the days when scientists used to kill their subjects in order to study them. This approach was obviously not going to work with orcas. Michael Bigg and Ian were assigned the task of evaluating the status of orca abundance on the coast in the wake of unregulated captures through the 1960s and early 1970s and in response to the growing public opposition to the captures. Their challenge was how to get information about orcas. So little was known and certainly no one had an inkling of how many orcas there were actually on the coast. Fisherman typically thought there were thousands, and the DFO in a misguided attempt to assuage their concerns that the whales were taking “their” fish and therefore their livelihoods and profits, mounted a gun above Seymour Narrows in the 1950s with the aim of eliminating and reducing orca numbers. Fortunately this did not work but the captures of a decade later would have a larger impact. Ironically, the captures introduced orcas to the public by capturing their imagination. Orcas became stars! and known to everyone as individuals, Moby Doll, Namu, Shamu, Skana. But the public, especially in Washington State, soon became very worried that the unchecked free-for-all roundups were increasingly unfair and dangerous and should no longer be allowed.

Paul, working at the Vancouver Public Aquarium (now the Vancouver Aquarium) had already begun to question the ethics of keeping orcas in captivity. Skana had revealed



some of the complexities of her intelligence and personality to him. Paul realised that Skana's needs were not being met in the confines of the very small concrete tank in which she was held. When Paul expressed these views publicly he and the Aquarium parted ways. Paul, compelled by what he had learned from the orcas he studied, went in search of wild orcas and this led him to Hanson Island in 1970. His opposition to captivity resonated and became part of the discussion that led the Canadian Government to commission its study of wild orcas.

To obtain baseline data Drs Bigg and MacAskie distributed hundreds of postcards encouraging people along the coast to mail in any sightings of orcas. From this they were able to determine areas orcas frequented and gained a rough estimation of their numbers.

Paul, by this time, had already headed north to Alert Bay drawn by its “Home of the Killer Whale” moniker. After consulting with locals he and his family found their way to Hanson Island where he encountered wild orcas throughout the summer of 1970. Through the subsequent years Paul made his home on Hanson Island while continuing to research the orcas that returned each year to the Johnstone Strait and Blackfish Sound area with a particular interest in their social and acoustic traditions.

Mike Bigg and Ian MacAskie, in the meantime, had likewise become deeply involved in orcas having developed their unique systematic approach of creating a photographic record of each individual.

They easily surmised that instead of thousands of orcas there were actually only small discrete communities to be found along the coast. Eventually, Mike Bigg went on to describe these groups as the Southern and Northern Resident and Transient communities and discover that there were at least two distinct eco types; the orcas that ate fish and those that ate other marine mammals. The latter were eventually renamed, Bigg's orcas in honour of Mike's discovery some time after his untimely death in 1990.

Ian MacAskie eventually retired and wrote books ("*The Long Beaches*") about his experiences as a scientist and naturalist. Clearly, on that day when he stood on the Hanson Island beach, not far from the tide line, he was intrigued by the unique way of life on Hanson Island and encouraged Paul and Helena to write about it.

Well...the busy Hanson Island scene has a way of distracting even the best of intentions. Each year, the Lab hosts many visitors and the daily effort to identify and track the movement of orcas in the area is all consuming. Over the years, OrcaLab has built up integrated networks to enable its work and fulfil its overall philosophy of non interference in the lives of orcas. In the early 1980s OrcaLab began to establish its hydrophone network by locating hydrophones in strategic locations that offered "acoustic windows" into other parts of the orcas' habitat. By 1985, the network was stable and coverage of these areas was now possible 24/7. Understandably, this expanded the number of hours during which the whales were monitored. The original hydrophone located off the Lab in Blackney Pass had only covered when the orcas transited the area immediately adjacent to the Lab. The network eventually included Blackfish Sound and most of the western section of Johnstone Strait from south of the Ecological Reserve to west of Weynton Passage. This kept the Lab increasingly lively through day and night. Eventually, following Ian McAskie's other offered advice, OrcaLab seriously began to entertain the idea of volunteers.

In the 1980s a young Japanese woman, Haruko (Hal) Sato, came to Hanson Island. She became an amazing help with the recordings and the developing systems. Hal as a young school student had heard Paul speak when on tour in Japan in 1974 and held on to the dream of coming to Hanson Island while doing odd jobs to save enough money for the trip. She was really the first dedicated volunteer. When, in her first year, the whales took off for at least two weeks, Paul worried that Hal must be disappointed after coming so far. When he mentioned this thought to Hal she replied, "Oh no Dr Spong, I see whales every day!" Paul, surprised asked her to explain. Hal told him she had been going up to the cliff behind the Lab every day to observe the scene below in Blackney Pass. And every day, she plotted on a freshly hand drawn schematic of Blackney Pass the whereabouts of every Dall's Porpoise, minke whale and every other animated thing in the Pass. The drawings were exact with times and movement. This would later inspire the making of renditions of view scapes from other locations around the area and daily maps detailing orca movements.



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Hal also had a wonderful acute ear for the different orca dialects. In those days, John Ford was developing his work on the dialects as part of his PhD thesis. He had shared a demo tape that gave an entry into the specific call types and dialects of some of the main groups. It was long before personal computers and easy acoustic software programmes so most of the learning was by ear.

When John's thesis was completed his painstaking spectrograms and measurements of the calls were then available. Helena and Hal worked closely together and developed their recognition skills. In those days the recording system was very complicated resembling more a switch-board, with plugs pulled in and out and then reinserted into different receivers. Hal took this in her stride, always calm and competent. When she disagreed with something we learned to take her comment, "I don't think so" very seriously. She was usually right! Paul, frustrated by the poor hand writing of some volunteers insisted on smaller, neater lettering. The Lab books are small to begin with and Hal, whose printing was impeccable took exception to Paul's comment. In perfect but incredibly small printing she continued her entries in the book. Paul got it and backed off. She spent endless hours in the Lab even foregoing drinks so that she would not have to run to the outhouse in the middle of a recording. In the Lab we have a contorted piece of wood that Hal found one day on the beach. She mounted it on a stand with the caption, "Hal's brain after boat noise". No task was too difficult. When Paul decided we needed a hydrophone transmitter high up on the mountainside of Vancouver Island, west of Robson Bight, he took Hal with him to help with the installation. After a hard slog up hill through the undergrowth Hal emerged from the forest with lichen, twigs and needles stuck to hair and clothing looking very much the wild woman! But the task had been completed successfully. Hal definitely set the standard of help around the Lab for the generations of volunteers who followed. After 1993, Hal went on to work with wild whales in Japan, contributing greatly to the understanding of the orca populations of northern Japan and Russia.

Through the 1990s the number of volunteers grew. The daily life around the Lab has naturally always centred around the whales who can be active both day and night. Over the years, the Lab has developed routines to help ensure no one gets too exhausted (although this still happens as everyone wants to be present during exciting events regardless of the time). Currently, to meet the demands of monitoring the cameras, as well as the hydrophones, we normally have at least two persons overseeing operations. If orcas pass offshore, someone will yell "ORCA!". This alert is passed along in a chain to all those awake enough to respond. Everyone converges on the Lab's deck ready to help and, most importantly, during daylight, to see. Technology has improved communications and last year, everyone was connected by "WhatsApp" so if there was an event a quick notice was sent around. Endearingly, this did not entirely supplant the older but still effective method. About two years ago we noticed when "orca" was shouted and everyone abandoned what they were doing and came to the Lab, the deer also took notice. With the protective perimeter nets up during the day, and everyone at the Lab, the crafty deer realised that the garden spaces were available and happily walked in! Our previous pets also understood what was happening and trotted to the Lab along with everyone, even Eva the cat, who would walk along the railing in front of the scopes while the dogs lay down in their favourite spots.

There are favourite shifts: For some, the wee hours enveloped by darkness, save perhaps moon and stars, are the times they feel most connected to the whales; listening to blows offshore, big, long extended ones if humpbacks, numerous short explosions if orcas and all the while listening to the calls and songs of whales emanating from some locale out in the dark, following the whales as they travel through their world, space and time suspended. For some, it is watching the day unfold through the succession of colours as the emerging dawn breaks into the brightness of day with the pace of life all around quickening once again.

Sometimes shifts are just a hard long slog; lots of boat noise, no sightings, sleep deprived, putting in the time. Then, the volunteers have to dig deep into their personal resources and believe in the promise of what might happen. At OrcaLab, it is a waiting game. Over the years there have been many surprises. Here are a few highlights:

August 6-7, 1982, was a beautiful evening. The whales had come "out" of Johnstone Strait and headed north through Blackney Pass and into the sun setting in the west. Their bodies bathed in the low, rich, orange, light. Captivated by the scene, all of us out on the deck, had failed to notice that the recording had stopped. Paul, in particular, after coming back outside, was cursing himself for "missing" this lovely passing. One of the passing whales blew a out loud "raspberry" in seeming disapproval. Paul got the message. Dinner and darkness followed. As the full moon rose over Blackney's still waters northern lights began to wave through the night sky drawing everyone back to the deck away from the dinner table. The experience was amazing. Then, as the sky continued to pulsate, the orcas returned. Their calls distant at first but definitely coming closer. In fact, groups from all three clans of the Northern Resident Community were on their way from Blackfish Sound. This time Paul made doubly sure the recording was working and then rejoined everyone outside to listen, speaking only in hush tones, as the 80+ orcas, spread out across the Pass, pushed their way forward through the currents and under the canopy of the lively sky, the cacophony of their calls matching the explosive energy above.

On August 8, 1993, while everyone was finishing dinner in the Main house, the volunteer minding the Lab, came in to say something very strange was happening on the Flower Island hydrophone in Blackfish Sound. Indeed, he had recognised that there were very unusual calls. Offshore orcas had just a week earlier made an unprecedented visit to Queen Charlotte Strait. Except for one breakaway group, who made it to Flower Island, the rest never made it through the myriad sports fishing boats enjoying the annual salmon derby, and eventually these rare orcas retreated. This group of orcas had never before been documented in inside coastal waters. Mike Bigg had suspected and speculated, before his death, that there was possibly this other orca community besides the transient and resident types he had identified earlier but he had only a few pictures and no direct encounters to go on. They eventually became known as Offshores, although for the time being we called them the "Unusuals". It was thought that their preferred range was further from the coast but still on the continental shelf. We had got a boat noise infused recording during their first visit that was not very satisfying for analyses (though we tried) so when, a week later, these same whales "came in" to Blackney Pass we were excited to really hear them clearly. And how different they were! Our ears had to adjust to their different sounds and our minds stretched to understand what we were hearing! The whales moved into Blackney but only got as far as the Parson Island Light opposite the Lab. By this time, we had become aware that the A30s (northern residents) were making their way west through Johnstone Strait toward Blackney. As the A30s entered Blackney, the Offshores formed a tight group and began to move away back towards Blackfish Sound. The A30s followed. Both groups were vocal at the same time. After a while, and as the Offshore calls became very distant, the A30s returned to Blackney Pass calling loudly and echo-locating profusely. It was now the wee hours of August 9. No one was tired!

On a lovely summer day, August 13 1996, the morning and afternoon had been fairly routine, full of orca calls and movements. About 30-40 whales were in the area that day. As the afternoon wore on the orcas decided to leave Johnstone Strait and head for Blackfish Sound via Blackney and past the

Lab. With most of the groups already in Blackfish, some of the A36s stalled mid channel, turned and waited for their oldest son, Cracraft (A32) and Sharky (A25, from the A5 pod) with her small family, to make their way into the Pass. Once reunited all the orcas disappeared into Blackfish Sound. Not too long after, with the setting sun now glistening off their backs, all the whales came back. But now they were in a tight, tight "ball" with their dorsal fins rolling over and over like some strange wheel. About 20 people were on the deck and rocks in front of the Lab. The *Blue Fjord*, with several tourists on board, was anchored just off of the kelp forest in front of the Lab. The light was fading and the very still water was beginning to darken. We strained to see if there were any new or missing groups from the previous pass. We were just beginning to wonder what had happened to the A30s when they suddenly, and without warning, rose from under the still waters, in unison, facing the Lab, just a few feet from shore. Everyone became transfixed as the three females and three large adult males, side by side, disappeared below the water with not a ripple. They repeated this three times. No one spoke, no one moved. Finally the A30s moved away unseen, later to reappear behind the rest of the whales still moving tightly together towards the Strait. The beauty, the unexpectedness of what had just happened touched everyone, there were smiles, sighs "wows" and tears, lots of tears.

Daily routines keep OrcaLab up and running smoothly. Every day; wood needs to be chopped so that the dinner at the end of the day can happen and help is needed to move, split and stack newly cut rounds; common areas such as the bath-house, the camp kitchen, the Lab etc need cleaning, as does the guest house ahead of arriving visitors; the boat needs watching if tied to shore and then the occasional cleaning; water has to be filtered and distributed; slugs need a vigilant patrol (yes! those sticky, slimy creatures are moved away from the veggie garden back to the forest); being on hand to haul batteries and equipment during hydrophone and camera site visits; driftwood is collected for the bath-house sauna and showers. Everyone soon learns that for their comfort and everyone else's island life may not be as easy as the one they left back in their previous life! Despite this the summer and fall days at the Lab are full and usually rewarding.

Of course, once winter settles in the routines are very different. After the whales (both orcas and humpbacks) have departed, usually by the end of November, the rhythm of life around OrcaLab changes significantly. Helena and Paul depart for their home in Alert Bay soon after the winter caretakers are established. For the past three winters, Brittney and David Cannamore from Alaska made Hanson Island their home. As they became more experienced it became a matter of turning over the keys and letting them manage from then on. About once a week (sometimes every two weeks if the weather was poor) David and Brittney would climb into the small boat (the "Car") and ride to town to grocery shop, have a very welcomed bath and a coffee & chat with Helena and Paul. After three years of living on Hanson Island, David and Brittney finally decided that they needed to be in Alaska for work and family, and to start developing their own property there. So, in early April, after being there since the previous October, they said good-bye to OrcaLab for the last time. Helena and Paul went back to the Lab until Janie Wray was able to come and take over.

Janie Wray is a long time friend and colleague. She first came to Hanson Island during a kayak trip in the area with her mother in 1995. She expressed a lot of interest in coming to volunteer and in 1996 she returned for the summer season. Janie continued returning as an assistant but also as a caretaker and friend. In 1996, she met another OrcaLab volunteer, Hermann Meuter, and they were married by Grandmother Cedar on Hanson Island in early October 1998. Together, Hermann and Janie travelled north and established "Cetacealab" on the southeast end of Gil Island. Inspired by their

time on Hanson Island they modelled their new home and work after OrcaLab. Cetacealab proved to be in an excellent location, strategically located near Douglas Channel and as part of the Great Bear Rainforest it became a focal point for the opposition to the proposed Northern Gateway project that would have introduced bitumen filled oil tankers to the coast. The data Janie and Hermann collected over the years clearly demonstrated the increasing and intense use by many cetaceans (orcas, humpbacks and fin whales) of the nearby waterways and that their well being would be directly impacted by unchecked, increased tanker traffic. There was a lot of support of their work to address this issue from First Nations, many concerned individuals and environmental organisations such as SaveOurSeas (SOS) and the World Wildlife Fund (WWF).



Recently, Janie has decided to concentrate her efforts on gathering data from other areas along the coast. She has established a remote camp on Fin Island for this purpose while continuing to run Humpback and Fin Whale surveys. Janie has developed an expertise in humpback behaviour and has created an identification catalogue of the humpbacks of the BC north coast. Likewise, she has documented the Fin whales in a similar manner. Hermann continues to run Cetacealab.

Janie is also looking to renew her involvement with OrcaLab. She has always felt a special bond with Hanson Island and OrcaLab. Ever since that time in 1996 when she ran her kayak up the beach and excitedly ventured into the Lab she has felt Hanson Island to be “home”. In the intervening years, she has both broadened and deepened her commitment to defending the welfare of whales and their habitats and will be a tremendous asset to OrcaLab.

Remote Cameras & Network Systems

Of course, there have been many changes at OrcaLab since Janie first visited. The hydrophone, camera and wireless networks are more extensive and complex. In 1996, OrcaLab was primarily obtaining data from its hydrophone network. “CP”, OrcaLab’s remote “outcamp” at Cracroft Point was already well established and since 1994 had been obtaining video, both underwater and surface, from the site. But there was no Internet and therefore no broadcast of either video or audio. That would not happen until year 2000 when OrcaLab partnered with NTT Data from Japan. In 1996, Janie would have worked in the Lab as part of the round-the-clock effort to monitor and track the orcas via the remote hydrophone network established in the early 1980s. She would have been well accustomed to late nights and long days. Spending time at an “outcamp” (such as CP) would have been part of her experience as well. In order to augment daily observations, OrcaLab had established several “outcamps” in key locations around the area. In addition to “CP”, “Sundance” (on the Johnstone Strait side of Hanson Island at Big Bay, “Waitin” (near where Weynton Passage joins Johnstone Strait), and “Gaviota” (on the Plumper Islands looking towards Queen Charlotte Strait), were established and operating through the 1990s and beyond. A rotation of volunteers ensured that the camps were manned continuously through the peak part of the summer. Usually, one person was chosen to manage each camp. The volunteers all loved the chance to be independent, prove their self

sufficiency and develop their observational skills. Linked by old BC Rail radios, each camp was able to report observations back to the main lab.



Each morning, all the detailed information from the night was relayed and collated at the Lab. With this exercise completed, a written summary of the recordings and observations for the past 24 hours was produced and used to create a hand drawn map of the orca movements throughout the area for the same time period. This was a very time consuming task involving several people. A few people became experts at making the maps but to do so they had to squirrel themselves away in a secluded place where they could concentrate uninterrupted on their

masterpieces. These early maps still exist and show in detail, the patterns, fluctuations and associations of the orcas at a glance.

The camps themselves demanded a lot of maintenance and servicing. Groceries, laundry, equipment and volunteer rotations all took a weekly effort. "Sundance" at Big Bay was at the top of a high cliff overlooking Johnstone Strait. Everything had to be hauled up from ocean level. The trail back to OrcaLab took at least 40 minutes along a narrow forest trail. When the OrcaLive video/InternetProject began in 2000 it was decided to scale back the camps in order to concentrate on this new endeavour. All the "outcamps" were eventually abandoned save "CP" which because of its strategic location became an essential hub for the remote networks and for connecting to the Internet.

From 2000 - 2006, OrcaLab partnered with NTT Data to broadcast over the Internet both live video and audio. It was a very successful project and considering it began during the early days of the Internet quite groundbreaking as well. At first, the signal was transmitted from a big dish at "CP", up to a satellite, then down to Calgary in Alberta where it was sent to Japan, and then to the world. The picture was very small at first but the audience didn't care and were enthralled to be watching live, wild orcas. Eventually, as technologies changed the "window" was enlarged and more than one view was offered, including underwater scenes of the kelp forest adjacent to "CP". The audio was amazing and the audience was able to listen, whether day or night, to the orcas as they moved around the area. This project lasted until 2006, after which, OrcaLab was able to only offer an audio broadcast of the hydrophone network and only occasional video.

Years later, OrcaLab fully returned to offering live video when it partnered with Explore (www.explore.org). The reinvented remote camera systems took advantage of the improved technologies that had advanced since the previous project. It became possible to provide live video in a much more comprehensive fashion. Each year, Explore has supported system wide upgrades and expansion to the camera, wireless, surface microphone and hydrophone networks. These integrated networks now consist of 6 hydrophones, 11 remote cameras, 1 hand operated surface camera during the season and 9 microwave radios. The hydrophone network monitors approximately 50 square kilometres of designated orca Critical Habitat while the complementary camera network covers approximately 30 square kilometres. The wireless radios are instrumental in conveying the signals from

these networks to Alert Bay and the Internet beyond, as well as, back to the Lab for monitoring purposes.



In previous reports, we have detailed the yearly efforts made in servicing and upgrading these systems. In June 2017, OrcaLab welcomed Roger Pagel and Cody Reynolds of Bexel Global Broadcast Solutions to Hanson Island. Assisted by Mike Durban, they reinstalled the underwater video camera at the Main rubbing beach while placing it in a new and better location. The old camera had been taken out in advance of the winter storms. The remote camera at the sea lion haul-out, just south of the Lab, was likewise reinstalled.

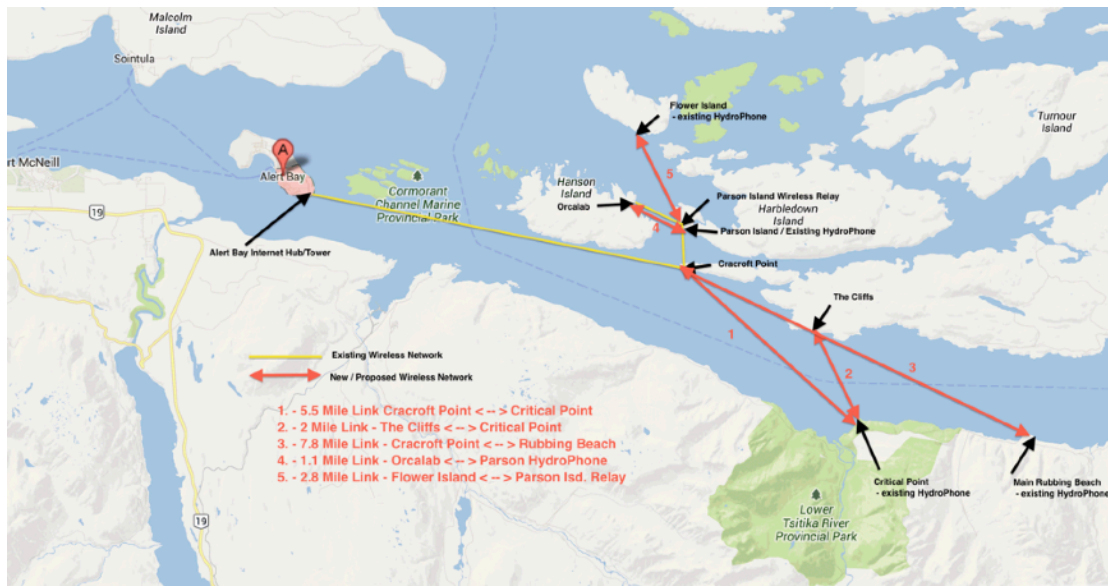
As well, Roger mounted new surface microphones at the Main rubbing beach, Critical Point (Robson Bight), CP (Cracroft Point), the sea lion rocks and at the Lab. These microphones effectively capture the local ambient sounds at each site, including blows when the orcas are nearby, the sounds of birds, and the growls and grunts of the lounging sea lions.

A good working hydrophone at the Main rubbing beach was a critical omission as the orca season began in earnest. For the second year in a row it proved not possible to re-establish a hydrophone at this site. The site has always been problematic due to power and weather conditions. Typically, the hydrophone fails sometime in the winter and even be destroyed or disappear under the gravel after a violent storm. In 2016, a new hydrophone was installed at the time of the system upgrade but this too failed. This has meant that the ongoing acoustic data OrcaLab has collected consistently over the summer/fall season for years was interrupted. Instead, for the last two years, the Lab become almost solely reliant on visual data from the cameras. This had two drawbacks: One, the information was dependent on daytime visuals and any activity at night was unknown; two, the hydrophone had been used to provide data about the possible distance from source and the direction of movement. Hearing distant orcas approaching offered an early alert to possible activity at the beaches. Likewise, when whales became distant on the hydrophones after passing the beaches we could determine which direction they were travelling. A precipitous drop in calls usually signalled a pass to the west, gradual fading meant travel to the east. BC Park Warden Marie Fournier, positioned on the Cliff site opposite Robson Bight, was often able to report if whales were approaching the beaches. This was very helpful but still meant night data were unavailable. The break in the data comes at an unfortunate time when it is being determined if the orcas are using the Main beach less often and for shorter durations than in past years. The lack of hydrophone data has meant this trend has been more difficult to document.

The Ecological Reserve has three beaches at which the whales rub. The second largest beach, Strider, lies to the west of the Main beach. In the last few years, the orcas have shown a marked preference for Strider and for a very small beach west of the Ecological Reserve. They are known to rub at other locations such as off the northern tip of Vancouver Island, on the northern shore of Malcolm Island near Bere Point, at an "offshore" beach in eastern Johnstone Strait and at a couple of locations on the Sechart Peninsula favoured during the winter. This change of preference led to a discussion we initiated with BC Parks and SARA (Species at Risk) as to whether the Main beach had undergone fundamental changes. Paul had noticed on his trips into the Main beach for servicing the cameras and hydrophone that there were less pebbles and more sand on the beach. Lots of the pebbles had either been pushed further up the beach to the height of the high tide line and away from

where the whales typically rub or had disappeared. BC Parks and SARA decided this warranted commissioning a new survey of the beaches by Thomas Millard, a research Geomorphologist, who issued a technical report for the Forest Service on the condition of the beaches in 2003 (Schmidt Creek Sediment Sources and the Johnstone Strait Killer Whale Rubbing Beach). The results of this new study have not yet been released but meanwhile there are new concerns that impending logging operations on the steep hillside near Schmidt Creek, just to the east of the Main rubbing beach, might cause damaging landslides that could further degrade the beach.

After the Bexel visit, summer progressed. Through the previous year we had been aware of problems concerning the network especially the frequent drops in the relaying and delivery of the wireless signals to the Internet hub in Alert Bay. Tim Sears, of HDonTap, who had set up the original networks for Explore and did the annual upgrades, was convinced that the wireless radios were too small to handle the signal transmission over the large distances over water required to deliver the signals between the various sites belonging to the remote systems and then from Cracroft Island to Alert Bay. He surmised that signals were being lost as they bounced off the water surface. He proposed that larger radios be installed to rectify the problem.



Tim Sears' original concept for OrcaLab radio/camera network, since modified to include additional cameras at Parson Island, Sea Lion Rock

Before Tim returned to tackle the system upgrade and address the efficacy of the wireless radios, Tom Dakin of Ocean Networks Canada arrived in September to help with the reinstallation of our ICListen hydrophone which had been located at Critical Point in Robson Bight. During the Spring the ICListen hydrophone failed and later was removed.



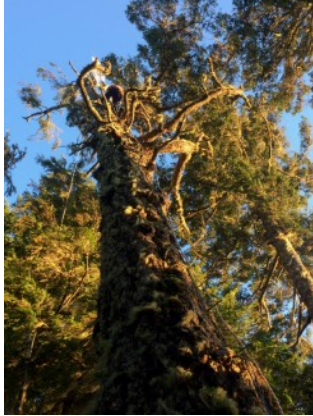
It was sent back to Ocean Sonics for repair and then sent to Tom who brought it back to Hanson Island after calibration. Volunteer Suzie Hall and Mike Durban made an initial dive at Critical Point to position the hydrophone. The first attempt was unsuccessful as handling this hydrophone is quite tricky and conditions and co-ordination have to be aligned. They went back the next day after a strategy rethink and were successful. The timing could not have been better as the old analogue hydrophone at this site had just failed and it was determined that a totally new installation would be required. It was decided that if the ICListen hydrophone could be plugged into our system's mixer then we could continue to monitor the area covered by the old hydrophone. The superior quality and sensitivity of the calibrated ICListen was a big plus. We continue to use this hydrophone to collect data that will allow future analysis of boat noise occurrence in Johnstone Strait. Eventually, we would like to have all of the hydrophones connected through our network rather than relying on the old (and getting older) VHF transmitters which involve a significant loss of data by transmission through air.

We have done incredibly well by the old hydrophone systems which we began to put in place in the early 1980s. These had been built by radio enthusiast Bill ter Brugge in Alert Bay. Bill became an expert at cobbling together the systems, at first from whatever equipment he could find, then later even manufacturing his own hydrophones. His contribution cannot be understated and OrcaLab owes him a huge debt of gratitude. Bill is over 90 years old now and still acts as consultant for OrcaLab.



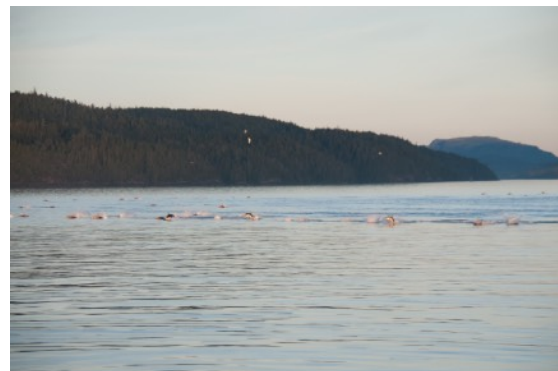
Trying to solve power issues has always been important to OrcaLab, especially as consumption increases with development of more complex systems. To that end, OrcaLab has continued to install a variety of energy alternatives to meet its growing needs while addressing concerns for the environment. Solar and wind figure significantly. The aim has always been to become completely free of fossil fuel dependency. However, the Lab, although equipped with both solar and wind power systems, still relies on a gas generator at the Lab to boost battery performance. Fuel cells at some of the remote sites have reduced site visits to replace batteries, which helps a lot. In 2017, during Explore's system wide upgrade new solar panels were added at the sea lion, Cracroft Point, Parson Island and rubbing beach installations. This has successfully reduced the amount of fuel consumption and the need to service the fuel cells frequently. Efforts were also made to increase wind power both at Cracroft Point and at the rubbing beaches, again to decrease fuel cell consumption. Michael Reppy brought a windmill which he had purchased for another purpose and this was erected at Cracroft Point in August.

Later, during the September-October upgrade Michael's windmill was removed and relocated at the main rubbing beach. Two other windmills, one facing west and the other southeast were then installed at CP.

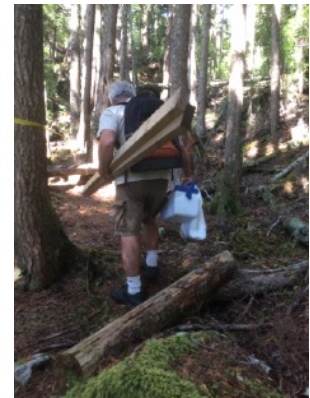
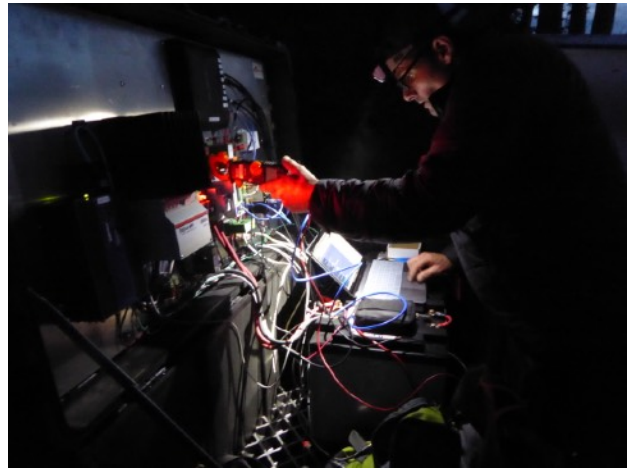


By the time Tim arrived all of the assistants had departed. Mike Durban was on hand to help Tim and his assistant Andrew Olsen. Mark McCallum was finishing up the roof job begun earlier and was about to depart. Jonathan Silvo, from Explore, visited during the early stages of the work and pitched in to help wherever he could. David Howitt and Barbara Bender, from Friday Harbour, came as well. David was called upon to use his arborist skills to climb the very high and scary tree at CP to install the new radios and work on the preparation of the windmill installation at the rubbing beach. Helena kept the home fires burning and looked after the Lab as there were still active orcas and humpbacks in the area.

One aside begs to be mentioned. On September 26, getting on for 5pm we were headed to Telegraph Cove to pick up David and Barbara after being in Alert Bay for the day. Mark, back at the Lab, let us know that a group of orcas had passed in front of the Lab headed north. We imagined it was the entire group who had been around earlier in the Strait. Unsuspecting that this was not the case, we left Telegraph Cove around 6pm. The sun was beginning to set, the ocean and sky alike were touched by the developing sunset and glowed with soft colours. Halfway across we were surprised by an advancing line of orcas mid strait. We stopped, turned off the engine, and watched as they slowly, elegantly passed and turned toward Weynton Pass. It looked to be the G17s, I4s and as we later learned the G46s as well. G59 was further over and closer to Hanson Island possibly (it was too far to see) still with the I68s. Two humpbacks blowing near Hanson Island completed the scene. After a pause, we looked back down the Strait and saw, not too far off, a solid wall of at least 300 dolphins heading straight for us. Before they reached us they suddenly veered towards Vancouver Island, then veered again and came rushing back across the Strait to their original position, and again toward our stationary boat. Under, around and under again they passed to the other side of the boat and into the light of the sunset. They turned again toward Telegraph Cove and in a singular moment leaped clear of the water. The noise of their rush was amazing! We waited a while longer for them to be clearly gone from us before we headed back home. A good start to what was to become a very, long and intense effort.



A typical day was up at 6am, departure by 7am, on site till 6pm, then back to Hanson for a shower, sauna, dinner and then bed. To be repeated the next day, the next, then the next and so on. The weather and the lessening amount of daylight was not always helpful to this routine; however these challenges were countered by everyone's perseverance and good humour. Lots of equipment had to be hauled into place at each site, including heavy batteries, more trees had to be climbed, radios aligned, cameras tried out. Finally, Tim had the task once more of making sure everything was connected and worked while he spent his last days in the Lab. Not as easy as it sounds and we are always grateful for his expertise, patience and ingenuity.



Great effort as always was made to not be within the Ecological Reserve at the same time as the whales. But on one occasion the whales came up from the east (remember we have no hydrophone

forewarning anymore) and surprised everyone. We had just been trying to convince Jonathan and Explore that a camera system at Strider might be a good idea. Jonathan was not totally swayed by the arguments but when the whales, after a quick pass at the Main beach, went directly into Strider for a much longer rub Jonathan was impressed even perhaps convinced.



The upgrade was finished by mid October. The weather by then was seriously becoming iffy and on the last morning a southeaster was quickening. Andrew tidied away all the equipment and tools that were to be left at Hanson and stowed all the returning equipment (lots) onto the *June Cove*. Everyone jumped on board, including Laura Gossett from the BornFree Foundation who had been visiting for a few days before the project concluded. As the *June Cove* confidently made way to Alert Bay despite rolling waves and lashing sideways rain, Laura, managed to see a group of westbound orcas through the steamy windows, another fitting bookend to this great effort.

Research\Whales



2017 began on a high note when 8 Gray whales passed the Lab in January. This was a first. Gray whales have been known to travel through the area but usually alone.

For a couple of years a lone small Gray whale foraged for several months off Alert Bay. The Gray whales in January were travelling north close to each other and there was a lot of surface activity so the passing was quite exciting. David & Brittney took some great photos, one of which became January on our 2018 calendar. They were observed in Queen Charlotte Strait later the same day. For Brittney it was the highlight of her 3 years at OrcaLab.

At OrcaLab, we are very aware of the benefit of monitoring such an extensive remote hydrophone network that has been operating continuously since the 1980s. It has been especially effective during the winter months when weather and shortened days make visual observations difficult and sometimes impossible. Over the years we have built up a comprehensive record of the year round presence of cetaceans, especially Northern Resident and Bigg's orcas, in the Johnstone Strait and Blackfish Sound area. Patterns of use by the Northern Residents throughout the year have become evident. Predictably the Northern Residents will have established themselves in the area by July and will continue to maintain a presence through October. Typically (there have been exceptions) families from the A1 pod will be the first to arrive sometime after or around the summer solstice and we normally would expect the A30s to be the first group. We have noticed that the matriline of the A1 pod seem to have had a pivotal role in meeting, ushering in and accompanying other visiting groups while they are in the area. In recent years, the A1 matriline has somewhat relinquished this tradition to other related groups. This may have been caused by some dynamic changes within their own group (s), such as the deaths of older members. In 2017, the A30s resumed this role and spent the majority of the summer performing the role of "host" much as they had done in the past. However, the A34s were hardly present until much later in the season. For two years this group had been joined by Kaikash (A46) the last remaining member of his A36 matriline, also part of the A1s. In 2017, he was absent and presumed therefore to have died. We will never know for certain if his death was relevant to the change in behaviour of his adopted group but it is consistent with what other groups have done when a close family member dies.

The Northern Residents are wired to certain species of salmon. They have a huge preference for Chinook, aka Spring or King salmon, and follow their migrations down the coast each spring and summer. Chinook are the biggest of the 5 salmon species and it is easy to imagine their large, fatty appeal to orcas. The decline in the abundance of this important fish species due to deforestation, over fishing, industrialisation, the impact of fish farms, and now climate change, directly threatens the livelihood of the orcas who have honed their preference over thousands of years. Although 2017 was more encouraging, the lessening number of different visiting orca families coming to the Johnstone Strait area in recent years is still of concern. The majority of the community seems to be looking elsewhere while only certain groups maintain their loyalty to this particular area.

Resident fish eating orcas also like Chum or "Dog" salmon as well. The Chum runs occur later, usually in September and October. The abundance of Chum is also in decline and may explain why the orcas have been departing earlier in their season. Again, 2017 was somewhat encouraging and whales from various families took advantage of the available Chum. The fishermen were less fortunate. Although the Chum run was not considered to be particularly good it was better than the last few years. Historically, G clan orca families (there are 3 acoustically defined clans in the northern residents) have made the journey to Johnstone Strait to join A clan groups to intercept migrating Chum. On these occasions the orcas will typically spend hours and days foraging in the tide rips where the fish

are churned by the strong currents. This is the orcas' best chance to bulk up ahead of the long and leaner winter ahead.

After the feasts are over, the majority of the orcas leave. Eventually the last remaining families depart sometime in November. Around the winter solstice one or all of the A5 pod (the A1s have travelled on to the north not to return until next summer) often return to what has become a winter haunt for them. Occasionally they have company. During the increasingly inclement winter days the hydrophones prove their worth! Days are short, the early and long nights dark and the weather unpredictable. Whoever is on Hanson Island has the task of listening for the whales. But they have help as well. Jared Towers in Alert Bay, when he is not observing whales in the South Atlantic, has the capability of listening to the OrcaLab hydrophones, as do Helena and Paul in Alert Bay and Alexandra Morton on Malcolm Island. Alex, who has been preoccupied by the continual and frustrating fight to remove fish farms in the Broughton Archipelago has sorely missed being involved with orcas. To her delight, she is able to listen to OrcaLab's network and keep an eye on Blackfish Sound and Queen Charlotte Strait from her fantastic prospect. This additional monitoring help has come in handy as the following story from December 2016 illustrates.

On 2 December 2016 around 10am David and Brittney at Orcalab became aware of Bigg's orca vocalisations on the Critical Point hydrophone. At the same time, Alex listening heard them too. Jared, Helena and Paul were alerted and soon began paying attention as well. What quickly followed was a focused discussion about how different these orcas were sounding. There were a few possibilities. Perhaps this was a rare group with a different dialect? Californian, West Coast Transients, pelagic and Alaskan populations have distinctive dialects. It was not immediately clear that this theory applied as there were some typical West Coast calls audible as well. However, one very aberrant call in particular was predominant and frequent. It was definitely strange. As the weather was good Jared decided to go out and take a look. After about an hour the orcas were out of range of the OrcaLab hydrophones as they travelled to the west toward Alert Bay. Jared and his two assistants found the orcas soon after, just south of Alert Bay at 11:07am and began to follow what appeared to be two different groups, the T68s and part of the T46s. A pair, consisting of an adult mature male and his mother (the T68s) were following 3 individuals from the T46 group who were still travelling west at a very fast pace. One of the three individuals appeared to have fresh wounds suggesting that there had been some sort of altercation prior to this perceived chase. The rest of the T46 group (including a brand new baby) were found west of Alert Bay. They stayed ahead of the others but eventually joined the rest of their family half way to Port McNeill. The male and his mother were behind by about 200m. Jared had stopped to deploy his hydrophone ahead of the whales but there were no calls at this time. The whales advanced to the west. When the whales were 500m ahead, Jared and his two companions noticed a lot of splashing and activity. Getting closer, Jared realized that the orcas had engaged in an altercation in which the large male had grabbed the neonate baby away from the other group and had it steadfast in his mouth. The encounter was by all accounts quite violent. The mother rammed the adult male perpetrator causing him to shudder and blood was sprayed into the air. Jared filmed, photographed and recorded the sounds during this phase. Jared followed the whales as they continued west. The neonate remained in possession of the male and his mother while the other group followed behind and to the side. As the neonate never again surfaced it was assumed to have drowned. Eventually, with daylight failing, Jared decided to leave.

When Jared returned to Alert Bay he informed Helena and Paul as to what had happened. Over the next year, OrcaLab collaborated with Jared in writing the following paper (<https://www.nature.com/articles/s41598-018-22714-x>) contributing specifically to the annotation of the acoustic recordings. On the OrcaLab recording during the initial “chase” at least one whale emitted repeatedly an aberrant variation of a common call type. This suggested that there was already a lot of distress going on prior to the actual attack. Calls during the attack, recorded by Jared on scene, were extremely intense and completely flooded the recording. These recordings complemented and supported the premise that a chase and then further altercation had happened.

Obviously, this was a very traumatic event to witness, then later analyse and for many, very difficult to absorb. Many have been shaken by this event. This had never been seen before in over 5000 DFO encounters with Bigg’s orcas. The interpretation that the male deliberately drowned the baby in order to facilitate access to the mother challenged many long held beliefs about orcas and remains controversial.

On a happier note, OrcaLab was able to contribute to the understanding of feeding habits of Humpback Whales in the Blackfish/Johnstone Strait area. Humpbacks are relatively new visitors to the area. Prior to 1967 and the cessation of whaling, the population of humpbacks on the BC coast had plummeted. They were an unknown presence in inside coastal waters. Slowly and after decades they began to make a return to inside waters. Now, hundreds of humpbacks make the coast their summer and fall home and enjoy the rich bounty of available prey. In the Johnstone Strait area, humpbacks were found to use a particular strategy to obtain food. With their heads raised above the water and their pectoral fins swinging freely they would “trap” feed (Marine Educational Research Society) by corralling small fish with their fins and directing them into their mouths. For a while, this and traditional “lunge” feeding, seemed the preferred methods. “Bubble net” feeding techniques were known to happen only in other locales, especially on the BC north coast and in Alaska. But it was just a matter of time. Other cultural habits, such as “singing” were evident first in Alaska, then off northern BC and eventually eastern Vancouver Island.



This past summer, the humpbacks surprised us by individually performing bubble net feeding close to the Lab. The distinctive circle of bubbles and the following quick ascent was clearly observed.

The remote cameras were able to capture similar events. The hydrophones picked up acoustic clues of such events, that were out of sight around the area, by the distinct sound of bubbles followed by a clear ascending call. It was clear, this “new” feeding strategy had been successfully adopted. But not everyone was convinced that individuals were making a sound before rising to the catch. Fortunately, OrcaLab’s Parson Island camera was able to document a particular individual whale (Lucky) engaged in bubble feeding while the adjacent hydrophone picked up his feeding sound. It was the proof that was needed.

OrcaLab continued in 2017 to monitor the surrounding 50 square kilometre covered by the remote cameras and hydrophones. This effort has yielded forty years+ of data about the movements and social behaviours of, in particular, the Northern Resident orcas, as well as, documenting opportunistic Bigg’s and Offshore orcas, Humpback whales, Pacific White-sided dolphins encounters, sea lions and other incidental marine mammal and animal encounters. As Fall approached we began to take notice of the cormorants who had, at camera level, begun to service their nests in the rock crevices near the Parson Island camera site. Such unexpected events underscores the effectiveness of focusing on developing technologies designed to optimise benign research methods. The extensive design of combined remote visual and acoustic systems powered by alternative energy is unique and the results effective and relevant.

Corky



Anti captivity campaigns began as soon as whales were first captured from the wild and placed in aquaria and zoos. Paul’s involvement predates his life on Hanson Island. While still employed by the Aquarium he found himself at the scene of two early captures in 1968 and 1969 where members of the Northern Resident orca community, the A5 pod, were captured at two separate locations in Pender Harbour on the Sechelt Peninsula. Paul did not witness the actual captures but arrived soon after. From the 1968 capture, year old Hyak was sent to the Aquarium after his mother Natisdalia died suddenly after being mishandled during a “medical” procedure. Paul was already working with Skana, a Southern Resident orca captured in 1967 and soon began to work with Hyak as well. In 1969, a second capture took place not far from the first. Paul again visited the site. On this occasion he saw Corky for the first time. She was just about four years old and was soon to be separated from her mother who was eventually let go to resume her life in the wild. Corky was shipped to Los Angeles, California. Paul and the Aquarium not long after parted ways. Paul was still working at the University of

British Columbia and still interested in whales. In 1970, he decided to look for a place in which to study wild whales and this brought him to Hanson Island where he observed for the first time free orcas. His recordings from that time still exist, poignantly preserving the sounds of the remnants of Corky's family, including her mother, when they returned, just months after the capture, to Blackney Pass.

Always, in Paul's mind was the idea of reuniting Corky with her mother. Eventually, a campaign to do so was created and this has carried on for the past several decades and has involved demonstrations, petitions, media events, films, bus tours, a very long banner, and most recently, concerts. Many, many people from around the world have participated.

Corky, herself, was eventually moved from her original facility to SeaWorld, San Diego in 1987. She experienced 7 pregnancies and after the move to SeaWorld she stopped ovulating. She suffered an attack by another female who tragically died as a result. She is now over 50 years old and has been in captivity nearly as long. Despite all the efforts to free her SeaWorld has remained obtrusive. However, when Dawne Brancheau, a trainer at Sea World, was killed by another orca, Tillikum, the situation changed. When the subsequent critically acclaimed documentary and exposé "Blackfish" was aired Sea World was finally made vulnerable and the anti-captivity campaigns gained new traction. SeaWorld stocks and attendance quickly plummeted. Their CEO recently resigned after failing to turn the declining situation around. The California Coastal Commission ruled against breeding in captivity. The tide was turning. The Vancouver Aquarium even eventually announced that it would no longer keep captive whales after a lengthy and public battle with the Vancouver Park Board. The creation of whale sanctuaries where captive whales and dolphins could "retire" and spend the rest of their lives back in the ocean also began to become a real possibility. In 2017, Helena and Paul attended a meeting that was held at nearby Farewell Harbour to discuss with a group (who later visited OrcaLab) dedicated to developing concrete plans for that purpose.

OrcaLab has long advocated that a facility be created in local waters in which Corky could be rehabilitated with the hope that she would eventually be reunited with her family, especially her mother. Unfortunately, Corky's mother died in 2000 and Corky, herself, was meanwhile ageing. As time went on the idea of a rehabilitation/reintroduction facility evolved into one for "retirement".

Through 2016 and 2017 effort was made to decide on a suitable location and open discussions both locally and further abroad about feasibility and logistics. Double Bay on Hanson Island is a possible site. The fishing lodge is for sale and the owners agreeable about this possible project. There are many hurdles but the idea is to continue to plan and promote the idea with the conviction that by doing so it can become a reality. Corky is living on borrowed time so there is increased urgency to fulfill the dream of her return to her natural home.





Volunteers, Visitors, Carpenters & Caretakers

At the beginning of this report we discussed what a daily routine might entail for volunteers who come to OrcaLab. Each year the composition of the volunteer group changes. Very often, experienced volunteers return to help out. In 2017, the group consisted of participants from Great Britain, USA, Canada, Japan, Germany, Belgium, Switzerland and Austria. Momoko Kobayashi, Megan-Hockin Bennett, Shari Manning, Hanna Zamernik, Kristen Kanes, Dylan Smyth all returned.

People who are familiar with routines, know what to expect, know the procedures and can already operate the equipment and complex systems lend their competency and confidence to the new volunteers.

Momoko returned for her eighth year. She continued with her still photography and it was her keen ear that determined that particular sounds on the hydrophones related to the humpbacks bubble feeding and later correlated the sounds with video images. Momoko plans to return in 2018.

Megan, likewise, returned to her post at Cracroft Point (CP) where she was once again ably assisted by Shari Manning. Megan was not able to be at CP for as long as in past years but she managed to produce several more amazing videos while there.

Muriel Hallé, Svenja Groschupp and Karien Bergmans arrived in June to start the season and get the camp ready for the others arriving later that month. Muriel, from Switzerland, had been living in Alert Bay for about two years. She came there because she loved whales from an early age and thought she might get opportunities to see orcas and other whales. She eventually became an assistant to Jared, accompanying him out on trips to document whales in the area as part of his contract with Fisheries and Oceans Canada (DFO). She was with Jared when they encountered the infanticide event in 2016. Muriel also worked with Sea Smoke, a local whale watching company. Karien took on the task of upgrading our social media effort making available information, media, pictures, stories to a

wider audience throughout the summer as it progressed. This was welcomed, as although we have diligently provided updates and notices about the whales as events unfold, our outreach has been somewhat uncoordinated and stunted. Karien was able to generate a lot more attention on the work being done at OrcaLab by her efforts.

As the OrcaLab project becomes more complicated technical expertise is very pertinent. OrcaLab in its partnership with Explore.org is fortunate to have Tim Sears design and execute the remote systems. However, Tim is not always available. In past years OrcaLab has encouraged volunteers with IT experience. In 2017, Max Woodman was able to assist OrcaLab with many technical issues, even enabling smoother, easier use of the remote video cameras while following the whales through the various fields. Max left OrcaLab committed to revamping its website.

Many of our assistants are very passionate about the environment, many are actively trying to find solutions to environmental problems and educating the public as well. Both Shari Manning and Suzie Hall have worked on plastic awareness campaigns and Shari has gone to Taiji as part of the vigil during the annual dolphin hunt. Suzie, a master diver, assisted with the reinstallation of the IC Listen hydrophone.

Hana Zamernik, who was a volunteer for several years (last 2009), came back in 2017. She immediately noticed both the changes and similarities. When Hana had first been an assistant there were no remote cameras operated from the Lab. She had been at CP and had, like Megan, operated the surface and still video cameras while observing and monitoring the ocean in front of the camp. But the main job back at the Lab on Hanson Island was listening and recording. Hana also noted the changes in Internet accessibility. Before, the Internet was severely limited and phone use was limited to a single phone call on Saturdays via an old Telus "bag" phone. This had been a vast improvement over using the BC Tel service line on the VHF radio which operated like an old fashioned party line as you lined up in a cue and had privacy only on one side of the conversation.

The mix of personalities and abilities of all the 2017 volunteers worked well. They were a very self sufficient and motivated group. OrcaLab would like to additionally thank Marissa Morrison, Charlie Shine, Kate Holmes, and Lea Specht. There were a lot of laughs, hard work and an enthusiastic willingness to embrace island life. They were rewarded for their efforts by several special encounters with the whales; including humpbacks close to the Lab, incredible recordings, and repeated camera views of the whales above and underwater at the rubbing beaches.

Again, there were many visitors who came to Hanson Island in 2017. Most visitors came during the summer months. However, Spring visitors to Hanson Island included former assistant Bianca Konig, daughter Anna with husband Tony and baby Jamie, friends of Janie, her assistant Elyse, and film maker Mirjam Leuze.

Before Janie left she hosted a weekend where humpback research along the coast was discussed. As mentioned, Janie has created a catalogue of the humpbacks who have visited the area on the north coast where her research base has been located. The Marine Educational Research Society has designed a similar catalogue for the Johnstone Strait and Blackfish Sound area. The DFO holds another ID set including humpbacks found off the west coast. The workshop hoped to compare pictures and identify humpbacks who have visited one or multiple areas. The aim was to ascertain what areas are preferred by individuals, whether there is any overlap and what differences might exist

in the timing of their arrivals and departures in and from each area. Social and feeding habits were also discussed.

During July, as Orcalab was beginning to settle into the daily routines, old friends, Dr Hal Weinberg, his wife Linda and their daughter Leah with her young family visited. It has been a long while since the Weinbergs have managed to make the trip. Hal, now retired, was a fellow brain researcher with a lab at Simon Fraser and had known Paul & Helena for years. He was also one of the original board members for the Pacific Orca Society. During the Weinberg visit, Steve Lapp returned to assess the efficacy of the last solar upgrade. He also provided useful hints as to how to improve and save energy around the house and the Lab. Maribel Garcia Barragan and her husband David came and discussed new fund raising ideas through social media. Fiona Wright and Cari Ackland arrived after having camped on the west coast. Fiona goes all the way back to when she was a young teenager visiting with her father. Later she became an assistant for several years and then family. It was special to welcome her back during a break from her busy life in Ottawa. Ann Moss along with mutual friend Nancy Azzam dropped in (literally as they came by float plane) for a wonderful lunch which they brought and provided for the entire group. Afterwards there was a nice ceremony conducted to honour John Lily who had been a friend to both Ann and Paul. Momoko, who recently had earned her boater's licence, drove Mike Durban's old skiff and managed to deliver Ann and Nancy safely back to the float plane despite the tricky currents and wind conditions. There were other occasions when Momoko's new found skill was called on and she later wrote how much she loved driving boats! She was becoming a truly island person. Our long time friend and supporter Andrew Morse and his daughter Julie returned for another visit. Andrew donated a two person kayak after he and Julie used it for a short trip into Blackfish Sound. It will be waiting for them when they return, hopefully in 2018! Julie Warrington (another former volunteer) visited and showed her daughter Betsy and husband Craig the life she had experienced at OrcaLab many years ago. By now we were into August and everyone was in the swing of summer. A very nice film crew from Great Big Story (CNN) spent a few days filming and developing a story on OrcaLab and Corky which was later aired on Youtube (<https://www.youtube.com/watch?v=h2ArSEk8MDQ>). Family were here next. Paul's son Yasha and his wife Brandy brought their three children, Amelia, Nate and Josie for their annual visit. A year older, the kids had no trouble remembering how to get around while watching for whales and heading out to fish. Once again we celebrated Amelia's birthday, her 12th. Granddaughter Hannah arrived soon after along with her friends. Great granddaughter Indica had fun showing her young friend Ember all the mysteries of beach and forest. As mentioned Tom Dakin generously gave up some of his valuable time for a visit during which he got the IC Listen hydrophone functional again.



Mark McCallum joined Mike Durban (who had been helping out throughout the entire summer) and began work on the roof of the main house. This was a huge job which had already been prepared for during previous visits. Mark had already done the Lab and part of the main house, replacing old shingles with metal. Leaky roofs had been part of OrcaLab since inception but it was obvious it was time to get beyond this problem. The new roofs have made a huge difference and go a long way to help preserve the buildings. It was an interesting exercise to tear up the rest of the roof during the busy summer. Tarps, everywhere, protected the floors and made it easier to clean up the old discarded roof but made for a very different approach

to dinner which is usually conducted in the main house each night. He had to replace the old skylights with new ones. The fan shaped roof with 8 skylights was a challenge. But we all managed and Mark had us soon comfortable under a secure roof. We are pretty committed to such renovations and will carry on in 2018 with plans to replace the old large single paned windows in the main house (there are 8 of these) and finish the interior side of the roof. After the main house, we will begin on the bath and guest houses - we will get there and know it will help secure OrcaLab's future. Mark was joined part way through by his partner, Lexi and their son Arthur who celebrated his first birthday while there .

As summer's end approached the volunteers began to depart. By the time David Howitt and Barbara Bender arrived ahead of Tim Sears and Andrew Olsen to begin the Explore upgrades, all of the volunteers had left. The Lab was still involved with the whales who remained. The following 3 weeks have been described but it must be said that this final push at season's end was very rewarding and even fun. The weather had begun to change and the days were getting shorter. Despite the lateness of the season, Laura Gossett from Born Free, managed to see both orcas and humpbacks. Helena and Paul departed with Laura and Tim's crew (including Mike) in the midst of a dismal southeaster.



It was time to turn over OrcaLab once more to the winter caretakers. Paul and Helena had promised Cal Rejall and his new wife Tricia a brief stay at OrcaLab as a wedding gift which they enjoyed, after which Lisa Larsson took over. She was joined by Janie Wray who had completed her work on the north coast and managed to bring her boat down to Alert Bay via the Prince Rupert ferry. After she launched her boat in Alert Bay she followed the *June Cove* to Hanson Island. With Hanson Island in good hands Paul and Helena departed to Alert Bay to begin their winter tasks of reviewing data, accounts and writing reports.

2017 was a good year. Strides were made on both practical and technical issues. We managed to maintain the data collection consistent to past years and we improved our skills operating the remote video cameras. Megan Hockin-Bennett did an excellent job of filming and photographing from the remote CP camp and created several impressive videos from her efforts. The remote systems proved their effectiveness for monitoring, both visually and acoustically, a large portion of the designated Critical Habitat they were designed to cover. Both everyday and unusual events were documented daily. OrcaLab managed to host family, friends, technical & practical help, media interests and supporters.

Despite the year's very positive accomplishments, we must sadly report the loss of three persons deeply connected to OrcaLab, in September 2017.



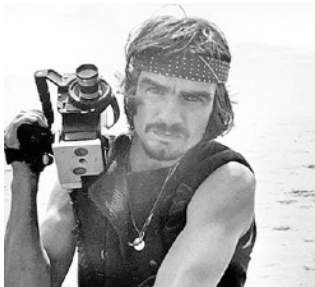
Twyla Roscovich was only 38 years old when she died. She first came to OrcaLab when she was just 17. Having recently completed film school, Twyla secured a job with the BBC as a "fly-on-the-wall" videographer during the 1996 summer season. She had to work with a very temperamental PAL video camera supplied by the BBC that was affectionately dubbed "Dewdrop" because it would stop if there was even the hint of any moisture (remember OrcaLab is in the rainforest). The temptation was to "do" drop it when it inevitably failed when Twyla was filming, usually at a critical moment.

Twyla managed to work around this and filmed many memorable OrcaLab moments for the BBC show. Despite her young age Twyla proved to be an amazing videographer. She had other skills as

well and had tremendous energy. Twyla loved the ocean as if it was part of her very being. She went on to become an acclaimed independent film maker, producing several videos on wolves ("*Last Wild Wolves*") and environmental issues, especially the fight to end the destructive practice of Atlantic salmon fish farming ("*Salmon Confidential*") and promoted effective voting strategies during the last provincial election ("*Don't Split the Vote*"). Twyla wrote and narrated her videos, so we are left with not only our memories, but also the warm resonance of her voice in those films which have become her lasting gift to the world for which she cared so much.



Jeff Jones was a lawyer and a member of the Pacific Orca Society board. Jeff's involvement with whales goes far back to when, as a young prosecutor, he was faced with the case of two men being charged with the shooting of orcas in Robson Bight. Unfortunately, a witness to the event failed to show up in court and the case was later dismissed. Even more tragic, a mother orca, along with her baby died as a result of being shot. Then less than a year later, the mother's adult son died. It was a sad introduction to whales. Jeff, as he transitioned to private practice, maintained his interest in environmental concerns and became a strong advocate for several causes. He helped many people on the North Island, including guiding Alexandra Morton who was spearheading the fight against fish farms through several court challenges. On invitation, Jeff became a member of the Pacific Orca Society board without hesitation and brought his clear thinking to every discussion and subsequent decision. He was the Society's secretary and made sure documents and files were always in good order. But most of all, Jeff brought his extraordinary energy and positive enthusiasm to every meeting.



Fred Easton made a huge contribution to whales by operating the camera on the Greenpeace vessel *Phyllis Cormack* in 1975 which captured the shot of a harpoon flying over the heads of Bob Hunter and Paul Watson in their tiny zodiac as they tried to protect a sperm whale. The harpoon exploded inside the whale and killed him, but Fred's shot echoed around the world and ignited the movement that led to the moratorium on commercial whaling agreed by the International Whaling Commission in 1982. Fred and Greenpeace were not alone in achieving this victory for whales of course, but their contributions were key elements. Afterwards, Fred went back to school and became a lawyer, initially practising in Victoria and then in Nelson, B.C. He became a founding member of the board of Pacific Orca Society in 1993 and provided invaluable legal advice regarding the structure and operation of the society. Subsequently, Fred became actively involved in negotiations over the land tenure on Hanson Island that enables OrcaLab to operate. After many active years Fred's other obligations caused him to leave our board but his legacy remains.

These wonderful individuals will be dearly missed, and we will ever remain grateful for their invaluable contributions.

Future



In 2018, improvements to the systems will continue. The problem of a hydrophone at the rubbing beaches will be addressed and hopefully before the start of the summer orca season. Work to improve the delivery of alternative energy to the remote sites and at the Lab will continue as well starting as early as April 2018.

OrcaLab looks forward to the 2018 summer season but 2018 has already been very eventful and it will be our pleasure to offer a full account next year. In the meantime we will hint that February and part of March 2018 was very busy with a long rare visit by a sperm whale who became affectionately known as Yukusam. . . but sigh, this will have to wait.

We are deeply grateful for all the support we received in 2017. We anticipate that 2018 will be another productive year, and we look forward to sharing many more exciting moments with you.

With our sincere best wishes,

A handwritten signature in black ink that reads "Helena & Paul". The signature is written in a cursive style and is underlined with a long horizontal stroke that ends in a small arrowhead pointing to the right.

Helena & Paul