



Photo: Jared Towers

Pacific Orca Society

Annual Report 2019

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Pacific Orca Society/Orcalab

Report topics:

- Past & Present: Waves in the pond
- Coast-Wide Hydrophone Network
- Research/Whales
- Corky Update - Sanctuary made for one
- Film Projects
- Volunteers, Visitors, Caretakers & Carpenters

Past & Present: Ripples in the pond

When contemplating this report we became reflective about the past. OrcaLab has existed from the early 1970s. Paul and his family set up camp in June 1970. They wanted to find out if it was feasible to study orcas in the wild. Previously their experience was with the captive orcas at the Vancouver Aquarium but they had also been more directly exposed to wild whales at the Pender Harbour capture site in 1968 and 1969. As Paul's involvement with captive orcas became more intimate and complex he began to understand that keeping whales in captivity was unfair. Expressing these sentiments publicly he was set free of any further obligations to the Aquarium, and went in search of wild whales. This took him to Alert Bay, "Home of the Killer Whale", late in 1969. Given guidance by many locals he, his family, and some friends set off for Hanson Island several kilometres south of town the following summer. They landed their small craft in a promising bay overlooking Blackney Pass. Sheltered from the prevailing summer northwest winds it seemed like an ideal location. There was even a little creek, and orcas passed by soon after their arrival. It was a new beginning.

Returning each summer, like the orcas, the camp grew from tent to hand built shelter, a collection of plastic, old windows, cedar shakes and salvaged beach wood which became beams, shakes, tables, benches and stumps. Each season the old Land Rover was piled high (very high) with equipment, food supplies, building materials - whatever might be needed. In those days there was no highway to the north island and transportation to Alert Bay was via a ferry that was boarded at Kelsey Bay in the "lower" Johnstone Strait. The route of this ferry traced that used by the Northern Resident orcas.

Not long after the capture of the A5 pod in December 1969 during which Corky (A16) was taken her sister, A21 was most likely tragically struck and killed by the Powell River ferry (Killer Whales, Second Edition, Ford et al, 2000). But this tragedy, and the sad captures did not deter the orcas from continuing to use these waters, although, that said, they never returned to Pender Harbour.

The camp on Hanson Island, known locally as "Hippy Point", and later as "OrcaLab", soon became a fixture, attracting many visitors over the years. Hanson Island gave people a focal point to play out their own attraction, fantasies, curiosity and empathy for whales. Many came to help in whatever capacity they could offer. It was the '70s and the locals got used to the stream of young people looking for an alternative way to live and engage with Nature. For the people who had grown up on the north island, mainly fishers and loggers, used to a way of life driven by their immediate needs, their communities, the rhythms of the seasons, the availability and health of the salmon, the strength of the forests, and for many the echoes of traditions and history of ancestors who had occupied these lands for thousands of years, it probably took a while to fathom what these "strangers" were about.

After her first year teaching at the Alert Bay primary school, known affectionally the "Little School". Helena went hiking in the Rockies during the summer of 1979. At the Edith Cavell hostel, high up the mountains, during a party to celebrate the full moon, a young, intense man, when he found out that Helena was from Alert Bay, declared with certainty his intention of going to Hanson Island one day because he had just read, "The Starship and the Canoe". This book, written by Ken Brower, follows the aspirations of a young kayak maker, George Dyson (one of those likeminded young people seeking alternatives) as he discovers life on the coast. George's father, Freeman Dyson, was a brilliant physicist who had worked on the Manhattan Project during World War II. At one point in the book

George meets up with Paul, and the reader is introduced to orcas and the Hanson Island way of life. That young man at the hostel never made it to Hanson Island but Helena did soon after meeting Paul the following September in Alert Bay. While there she happened to find an old beat up copy of the "Starship" on one of the shelves. Reading it gave Helena an inkling as to the type of life she would soon experience for the next 40 years.

Paul's life before this was taking its own twists and turns in the early 1970s. In 1972, Paul was invited to a reception at the Georgia Hotel in Vancouver where he met for the first time, Farley Mowat, who was on a book tour for the recent publication of "A Whale for the Killing". Farley understood the precarious relationship between people and whales and the dismal situation facing whales world wide. Paul and he talked for the whole evening. The upshot of this meeting was that Paul became involved with the efforts to stop whaling. The course of his life was reset and the rest, as they say, "is history".

From his encounter with Farley, Paul became involved with the Canadian branch of Project Jonah hoping, through petitions and appeals, to end Canadian whaling once and for all. Mostly through Farley's connections and his dogged determination the federal government stopped all whaling operations based in Canadian ports by 1972. The last of the British Columbia whaling stations, Coal Harbour, had been closed in 1967 but two stations had remained in Atlantic Canada. "Whew!", thought Paul when hearing of the closures, "that was easy!" and he quickly turned his attention to other whaling nations, convinced that they too would see the logic, if not the compassion, of stopping killing whales. He set his sights on Japan.

By this time Paul was in the process of convincing the fledgling Vancouver based environmental group Greenpeace to become involved with the whaling issue. To raise funds for a trip to Japan, Paul and his new found Greenpeace friends, created the "Christmas Whale Show" which was held in December 1973 at the Queen Elizabeth Theatre in Vancouver. In the 1970s hardly anything was really understood about whales. For the audience the integration of music, whale calls, passionate speakers had life changing impacts. For Paul and his wife Linda it meant that they could travel to Japan with their young son Yasha and see if they could bring about changes in Japanese attitudes.

It was an extended stay during which they did many presentations in auditoriums located in shopping centres, schools, and other venues. They did not convince Japan to stop whaling but they did form lasting friendships that sowed relationships that resonated on Hanson Island for years afterwards.

Two young photographers from Anima magazine, Tomatsu Aoki and Koichi Koaze, inspired by what they heard from Paul, decided to come to Hanson Island almost immediately. They arrived in August, really an amazing commitment of time, money and energy. In those days, Paul was more open to going out in boats to watch the whales. Whale watching was not then a reality, there were very few sports boats on the water, the seine, troller and gill net fishers were numerous but usually focused elsewhere and the orcas had yet to excite many other researchers. These young photographers managed to capture a spectacular breach and other orca photos that were featured in their magazine when they went back home.

Also influenced by Paul's ideas in 1974 was a young school girl, Haruko Sato, who listened to Paul during his presentation at her school. Haruko became determined to play out her dream of seeing orcas in the wild. She worked at whatever jobs she could find and saved up enough money for the trip to Canada. She achieved this by the time she was 17 and arrived in 1982. By then the Lab was

undergoing a shift in attitudes about boat based research. Johnstone Strait had become a busy place. The road to the north island had been pushed through in 1978/9 and this opened up the area to an influx of tourists, mostly sports fishers, but whale watching was soon an additional draw. Commercial fishing was also still active and so the area was very busy. Paul and Helena (by this time Paul's partner) decided to try to develop remote systems that would allow them to gather passive data through a network of hydrophones. Haruko, or Hal as she liked to be called, stepped on to Hanson Island just when this transition was beginning. During her first visit the whales did an unexpected disappearance in Blackney Pass for nearly three weeks. Paul worried that Hal, after coming so far, would be terribly disappointed, told her he was so sorry that she hadn't seen whales, to which Hal replied, "Oh no! Dr Spong, I see whales every day!" Paul, surprised, inquired further. Hal explained that she spent her days up the cliff that overlooks Blackney Pass, beyond the Lab, where everyday she sat and plotted the movements of any Dalls Porpoise, Minke whales and every animated being that appeared.

Hal went on to assist with the emerging remote hydrophone systems and despite all its trials and errors managed to develop a keen ear and understanding of the different orca calls and orca behaviour. Hal, after leaving OrcaLab by 1994 went on to work with wild whales near Hokkaido, Japan.

This was really the beginning of a stream of visitors from Japan, some of whom we would like to acknowledge. Writer Ken Takahashi first met Paul in Japan in 1974. He came to Hanson Island several times over the years. On one early visit, when only on the island for a couple of days, he was taken out to see passing orcas. The orcas stopped travelling near the end of the island just beyond the Lab. While recording equipment, cables and a hydrophone were fussed with, Takahashi san, as he stood at the back of the boat, lifted his hand to signal "be still". Heeding his wish, all activity ceased as the floating, bathed in late afternoon light, quietly breathing whales lay motionless. Time was suspended, no one spoke. After the whales drifted away, Takahashi san refused the offer to further follow them. Instead, he said he could go home now, not just back to the Lab but to Japan. He was content knowing that nothing would ever top what he had just experienced. He got "it".

The lesson of this moment - be satisfied, know when you have been given the gift of understanding became a mantra through the years to come. This sentiment guided the transition to non invasive research soon after, when boat based efforts were abandoned in an attempt to lessen impacts on the orcas, and when ways to garner information about the whales without interfering with their lives were developed. Not surprisingly, there were many more "moments" that contributed to a life full of rich and meaningful experiences.

In the 1990s it was decided to open up OrcaLab to visiting groups of young Japanese junior college level students. The hope was that by welcoming these young people to OrcaLab it would broaden their appreciation for Nature, orcas, and a different way of life, and that they would take their new experiences back to Japan. Two or three times during the summer, groups of 15 young people would disembark and land at the Lab. The guest house by this time had been built by Kurt Musgrove. Originally designed as a dwelling for a couple of people (it had only one bedroom on the 2nd floor) the fairly open ground floor plan of the living/ kitchen area was more generous. But still it was a stretch to house everyone. To extend the sleeping quarters two big tents were erected on the large deck outside. Made comfortable with carpets, small lamps and enough room to stand up, each tent accommodated three persons. Inside the house nine covered foam 'mats, which were stacked three

deep against the large picture windows as seating, provided additional beds. Boys slept downstairs, girls upstairs. Each person was given a sleeping roll which included a sheet, duvet covered sleeping bag and a pillow. These were rolled up each day and the mats re-stacked before breakfast.

Hal painted a full sheet of plywood (with daughters Anna and Milora) showing all of the A30 family swimming together. This was carried over to the guest house and once put in place the students sat around the table and had breakfast. This was repeated for lunch. All three meals were prepared in the main house. Breakfast and lunch (if not a provided boxed lunch) were carried over to the guest house while dinner was hosted, with everyone else joining in, at the main house.

After breakfast the students gathered in the main house where there was a discussion and information session, including maps and a written summary about what the whales had done the previous day and through the night, and about orcas generally. The groups were accompanied by both an interpreter and supervisor, usually one of their teachers. Afterwards, as lunch was prepared, the students were divided into 3 groups; one to go into the forest for a walk, two to go to the Lab to share inside and outside duties. These groups rotated through the week of their stay. One day was dedicated to going on the *Tuan* - the SeaSmoke Whale Watch sail boat. Eventually, the *Tuan* was used to transport the groups to and from the island to incorporate the whale watching. A day in Alert Bay for a visit to the U'mista Museum was arranged so the students would learn about First Nations culture. It was a very busy week but we felt the effort was worth while and know that many carried this experience with them for the rest of their lives. It was endearing to watch how the very urban students evolved and relaxed over the week. Departures were often accompanied by tears.

Many wished to return, and in 1996, one young woman, who looked like she would blow over in a slight wind, not helped by her platform shoes, asked if she could come back and be an assistant. She did not speak English so we suggested she study English and reapply. Tomoko Mitsuya took this to heart and the next year travelled to Vancouver where she studied English for a year. She asked again and was accepted in 1999. She has been coming back every year since and has become a mainstay, and like Hal, very expert at discriminating orca calls. Tomoko came to understand how to track whales acoustically, and apply this skill to making detailed maps showing the daily 24 hour travels of the orcas in the study area.

The development of OSS (Orcalab Support Society) was another offshoot of the Japanese connection. Started by Takafumi Yotsuya, who himself had been a volunteer, this group of engaged individuals decided to support the on going work at the Lab by sponsoring 1-2 volunteers each year who would assist the work at the Lab. Additionally, they compiled information about orcas and their daily lives for other interested people back home. One of the legacies of OSS was that each year, we enjoyed continual Japanese representation amongst our volunteers.

When www.orca-live.net was developed in the early 2000's the OSS group reported regularly to the Japanese version of the website.

The Japanese connection took OrcaLab in a dynamic direction in 2000 when OrcaLab became involved with broadcasting live audio and video to the Internet. This change, however, began in the 1980s, long before the Internet was considered a possibility. Film maker Jin Tatsamura had been contracted by Seibu Department store to produce 3 minute commercials. Jin used this opportunity to feature profiles of different personalities from around the planet. He came to Hanson Island in 1985 to

film Paul. The short, touching video, narrated by the late, great Japanese actress, Midori Kiuchi, remains one of our favourite pieces. Paul and Jin became life long friends as did Paul and Midori. Jin later produced and directed "Gaia Symphony", an expanded version of the 3 minute commercials, which became a series of films that garnered a wide audience.

Years later, on another visit to Japan, Paul engaged Jin in a discussion about his idea for a "Nature Network". Paul's vision was to share what he experienced, the whales, the beautiful surroundings of Hanson Island, the sunrises, the sounds, with the rest of the world. The idea came to him on one particularly beautiful, peaceful night when the still waters of Blackney Pass were full of the reflections of sparkly stars and a bright full moon while the blows of passing orcas percussed the air and their sounds resonated through the speakers on the deck. He said to Jin, "If only the whole world could experience this moment, it would know peace." Jin understood completely and took Paul to meet with NHK, NHK being the biggest broadcaster in Japan. The upshot of the meeting was for NHK to send a film crew to Hanson Island. High Definition television was in its early days and Japan was a leader in the technology. NHK was enthusiastic about obtaining HD footage to demonstrate its capabilities and Hanson Island seemed like a good possibility.

The project was ambitious and involved both Canadian and Japanese crews, outfitting two large whale watching boats (the *Gikumi*, from Telegraph Cove and the *Blue Fjord* from Ladysmith) as film and sound studios. OrcaLab was the main base of operations. Platforms were erected in several locations so that the crews could film from land and there was even an underwater tent fabricated for observing orcas underwater.

All the preparations went well but then in early September the orcas totally left the area just as the project got underway. The combined crew of 26 was flummoxed and as the days went on increasingly nervous. Calls were made up and down the coast - no orcas anywhere! It felt like a conspiracy; even the Southern Residents and Bigg's orcas had disappeared. Time ticked painfully on until one day Alex Morton, who was then living near Echo Bay, called to report a lone Bigg's orca nearby. The crews leapt into action and boarded the *Blue Fjord* (the *Gikumi* had been retired from the project by this time) for the ride into the Inlet. The day was getting on and they arrived late afternoon. They found the adult male Transient (Bigg's) orca, "F1" and followed him for a short while before turning back for home. They had been encouraged to see if they could get any prawns for dinner as the inlets are well known for their prawns. The local prawn boat, the *Blue Eyes*, happened to be cruising just in front of them. The skipper of the *Blue Eyes* assured them he had plenty of prawns but would need a container to put them in and cash to pay for them. The crew solved the first challenge by locating a very large cooler on the deck. They tossed it overboard in the direction of the *Blue Eyes*. The Canadian cameraman who was responsible for one of the two elaborate, huge, million dollar HD cameras, was at the back of the *Blue Fjord* and watched in horror as the cooler, identical to the one used for housing the HD camera, went overboard and splashed into the sea. Fortunately, it was not the camera storage cooler! The now prawn full cooler was retrieved from the *Blue Eyes* and after figuring out how to pay for the haul (everyone had left their wallets back at the Lab) the *Blue Fjord* headed to a wonderful prawn feast held that evening at the Lab.

This was the highlight of the project which limped forward into October. On the day they left and were dismantling the *Blue Fjord* in Telegraph Cove, Helena, back at the Lab, heard the unmistakable distant calls of approaching orcas! The crew did not want to know and went on finishing their task of packing

up. Over the next month over 50 orcas, from several different families, stayed in the area, feeding off of the large return of chum salmon. Sigh!

The project had been a bit of a bust but it had a silver lining years later. Soichi Ueda (Saul) who had been Jin's assistant when Paul first put forward his idea of the "Nature Network" and had travelled to Hanson Island with Jin on a later trip, had connections with the Japanese corporation NTT Data. He convinced the president of the company, who was a personal friend, to support the idea of broadcasting audio and video based on OrcaLab's remote systems via the Internet. It was still early days of the Internet and therefore a very challenging project. Undaunted, Saul with the help of other technical experts, developed a plan that involved two large satellite dishes installed both at OrcaLab and at nearby Cracroft Point. Cracroft Point was key as a location for video and the Lab for audio transmission. OrcaLab already had a camp at Cracroft Island dubbed "CP" since 1993 and had been filming surface and underwater video there regularly since 1994 (we have a large video library!). The old shed and platform, however, needed to be reconstructed to provide a more suitable environment for the new equipment (computers and such) and the increased activity. This was done in advance. An additional shed was also constructed further back in the woods for equipment storage. Saul's team arrived and installed the equipment that successfully established the Internet link. The link involved sending the signal first to an Alberta company "QuickLink" via satellite. QuickLink relayed the signals to Japan via the Internet. The signal was then sent out to the public via the website, orca-live.net hosted by another Japanese company, JStream. The total transmission delay was about 1 minute. Pretty good for those days. There were at times interruptions in the transmission. QuickLink was unkindly dubbed "NotSoQuickLink" during *any* breakage in communication. But the total effort was really amazing. At first, it was only possible to provide a tiny one inch square video window on computer screens. The cost to stream video was extremely high (\$10,000 per month), but fortunately for OrcaLab this was generously absorbed by NTT Data. Otherwise the project could never have happened. Still, despite its restricted size and the vagaries of connections, the website had a profound impact. It quickly gathered an audience in 70 countries around the world. A Tokyo engineer commented on the orca-live site that the tiny live image he viewed was "the oasis of my days". It was groundbreaking. Very little live video on the Internet was available in those days. It beat FaceBook by four years and Youtube by five years!

Eventually, the small video window was enlarged and became two. At any one time both underwater and surface images were possible. Four underwater cameras, since 1994, had regularly been deployed each season in different locations within the kelp forest off of Cracroft Point. The rich life of this large kelp forest had long fascinated with its resident rock fish, herring and perch, otters, birds, seals, sea lions, orcas, sunlit kelp, and spiky urchins. Particular attention was paid to the changes caused by the onset and completion of each slack tide. This effort was continued when OrcaLive was established, the only difference was that now the scenes were broadcast to an Internet audience and not just stored on shelves. Likewise, the surface video camera, manned by an OrcaLab volunteer, continued to capture the activity in Johnstone Strait, including the orcas when in front of "CP" and off the entrance to Blackney Pass. Inside the "CP" shelter, by watching each scene on the little black and white monitors, it was possible to select the best and most interesting live feeds from the four underwater and surface cameras.

For several years, Saul returned to set-up for the season. He brought along Seiji Inagakii to help. Together they would come, with just a week in hand, work furiously non stop until the systems were up and running.

Even when NTTData felt they should pull out after 6 years - they originally signed up for 3 - the audio stream, and even occasionally some of the video stream, was still broadcast if funds and bandwidth were sufficient. JStream continued to support the live audio stream and still does to this day. We are very grateful! This project would eventually evolve and be re-energized when OrcaLab formed a partnership with Explore (www.explore.org) some years later. By that time, the Internet had become a solid reality, technology had progressed, and wireless radios could now provide much improved data transmission. Maybe not surprisingly the costs of broadcasting remained high. But OrcaLab, with the help of Explore, is now able to provide 8 live video streams in full screen, high definition video simultaneously. Even though the project has grown more complex, in many ways, the essential message of enjoying Nature without interference and imposition has remained the same. No advertising, either!

Who knows where these connections to Japan have led to - ripples in a very large pond. Japan is still whaling. In fact, Japan pulled out of the International Whaling Commission (IWC) in 2019 as a follow-up of their failed attempts to convince the IWC to resume commercial whaling since the implementation of the moratorium in 1986. They announced that they would cease Antarctic whaling, which was a huge relief, to concentrate on coastal whaling in the seas off Japan and in the North Pacific, which they have done. This is a sea change for the IWC which has been the international governing body for the regulation of whaling since 1946. Japan supported many member countries financially, mostly African, Caribbean and small Pacific island nations, in order to shore up votes in favour of their positions. It will be interesting to see if these countries will manage to continue their membership without financial aid. The next IWC meeting is to be held in Slovenia, September 25 to October 2, 2020. This will be the first plenary meeting since Japan's departure.

We take heart from the fact that Japan's intransigent attitude to whaling is not actually supported by the majority of people in Japan. The younger generation does not hold with these attitudes and whale meat is not widely popular. The whaling effort seems to be anchored in remnants of a stubborn nationalism left over from WWII and only by a small group of people. Still convinced attitudes will change, our efforts to foster care and respect for the environment continue.

Coast-Wide Hydrophone Network

In 2019, OrcaLab partnered with 3 other coastal organizations already involved with remote hydrophone systems on the coast of British Columbia to formally create the Coast-wide Hydrophone Network (The Network). Like OrcaLab, the other organizations, the North Coast Cetacean Society (NCCS), the Saturna Island Marine Research and Education Society (SIMRES) and Pacific Wild (PW) had been using hydrophones to gather information about whales and the coastal waters adjacent to their locations for many years. Collectively, these organizations cover a large portion of the coast. The example OrcaLab set for decades helped inspire the others who easily recognized the potential of passive listening in remote sites. The discussions prior to the formulation of this new initiative were long and complicated.

The germ of this concept began a few years ago when various coastal NGO's were invited to attend a meeting hosted by SIMRES on Saturna Island. Also, in attendance were the Vancouver Aquarium, the World Wildlife Fund and Ocean Networks Canada (ONC). The discussion explored what similarities there were between each of the groups, how many, where, and what kind of hydrophones each organization was using, what were the common goals and ambitions for future research, what perceptions were there about the changes and impacts facing the coast from industrial and human activity?

During the meeting ONC fielded a discussion about collaboration. Relative to the size of the NGO groups in attendance ONC is a large, well established organization based at the University of Victoria.

From their website: "The University of Victoria's Ocean Networks Canada monitors the west and east coasts of Canada and the Arctic to continuously deliver data in real-time for scientific research that helps communities, governments and industry make informed decisions about our future. Using cabled observatories, remote control systems and interactive sensors, and big data management ONC enables evidence-based decision-making on ocean management, disaster mitigation, and environmental protection."

Without prior consultation ONC had gone ahead and obtained funds to support a project manager who would facilitate bringing together the groups under the ONC umbrella. However, this was deemed premature and hasty by the unprepared NGOs. The NGO groups felt they needed more time to absorb this novel idea and resisted the pressure to sign on. SIMRES had previously worked collaboratively with ONC who provided ongoing technical and logistical assistance from the start of their project. Additionally, ONC technical advisor, Tom Dakin, had already reached out to other NGOs, including OrcaLab, to discuss the state of their hydrophones. However, there was little desire on the part of the NGOs to get absorbed by a bigger organisation. Each group in developing their respective independent projects was aware of their unique history and contribution to the study of whales in their particular area of the coast.

ONC did have a lot to offer; technical expertise, knowledge about the deployment of sensitive calibrated hydrophones, the possibility of secure storage of acoustic data, and the ability to develop software and tools to process data. Tempting.

But the "Too small to Fail", as the gathered NGO organizations were dubbed, intuitively felt that there was a need to hold on to their independence, and most importantly their existing data sets (their greatest asset), until at least there was better clarification about the impacts and consequences of such collaboration. The brakes were applied.

However, the idea of working together did not entirely go away. It ruminated over the next few years. Eventually, ONC had another go, fielding the idea of collaborating with TIDES Canada as a possible way to support funding and administrative considerations. For ONC this idea was still very attractive as it would give them access to large existing acoustic data sets. Their strong suit was that they were capable of providing the necessary storage for large amounts of data whether historic or ongoing while providing analytic capabilities as well. ONC, this time, proceeded more cautiously not wanting to scare the NGOs away again. Strategic planning consultant Darcy Dobell who attended the meeting along with representatives from TIDES, had worked with both TIDES, and NCCS and was on the board of ONC, seemed like a natural liaison between these interested parties. The discussion, hosted

at the University of Victoria campus in December 2018, was fruitful and the groups decided to further explore the possibility of collaboration. ONC gained permission from the group to look into securing an interim project manager who would facilitate future discussion/planning meetings. TIDES agreed to discuss how they might provide administrative and funding support through what they described as a shared platform.



There were many logistics to work out and several meetings ensued. It became clear that a huge motivating factor in the decision making process was preserving the independence of each organization while finding common ground, creating a new entity, and going forward.

While these discussions were under way, Janie Wray, founder of NCCS and OrcaLab colleague, became aware of grants being offered by the Canadian Government through, *The Nature Fund*, and suggested that an application should be put forward with the hope that if successful there would be enough funds made available to establish the Network and carry the project through the next four years. Given the go-ahead, she applied.

This was a game changer. The Canadian Government created *The Nature Fund* largely as a response to the growing concerns for whales in Canadian waters, including those on the west coast, particularly the Southern Resident orca community, whose dismal plight had captured world wide attention. There are just 73 orcas (December 31, 2019) remaining in this population and their struggle to survive is acute. Generally, the government was anxious to prove that they were taking action and serious about their commitment to the whales and the environment.

During the application process it became apparent that the development of the Coast-wide Hydrophone Network project had a strong chance of succeeding with the Nature Fund even though the process was complex and lengthy. ONC and TIDES were impressed with the possibilities. However, the NGOs were also gaining a sense of their own collective strength. Janie, in particular, had confidence the NGOs could and should manage the administration, budgets and other aspects of this new entity rather than referring matters to ONC/TIDES. It had become clear that ONC would need a very large portion of the fund in order to cover costs that they would accrue while facilitating the project. Taking a radical step forward the umbilical cord was cut, the involvement of ONC and TIDES was suspended. The NGOs were now on their own. All this before the Nature Grant was even approved.

The application, after lengthy budget planning, and a looming midnight deadline, was finally submitted. Then the Canadian Federal election caused a hiatus. All decisions went on hold. Word of the application's approval came late in the year. The total funds available for a four year term, 1.8 million.

There were still many steps ahead but the Coast-wide Hydrophone Network was official.

A Steering Committee was formed, Tom Dakin and Jeff Bosma, formally of ONC were hired for technical expertise, implementation and support, and Janie Wray became Project Manager through a separate grant from TIDES.

Implementation of this project means that the complex installations of new hydrophones, upgrades to existing systems, and the collection and storage of data would be made consistent throughout the Network. The main goals continue to be the collection of consistent, usable data, analyses of boat noise levels, whale presence and ocean conditions.

OrcaLab, being the oldest of the organizations, perhaps presents also the greatest challenge. Most of its old hydrophone systems had been created in the 1980/90s. Those hydrophones were all of the analogue and not calibrated type but were sufficient, even excellent, for the purposes of monitoring and tracking orcas in and around the area. Going into this new phase the old hydrophones are not capable of dealing with the type of data desired by the Network. They will be swapped out for new finely calibrated models.

Scheduled work on the hydrophones in 2020 will begin in the Spring and will include the installation of at least 3 new ICListen hydrophones at Flower Island in Blackfish Sound, Parson Island, and Cracroft Point. These “prima donna” hydrophones are not cheap, each more than 20x the cost of the old systems. They are calibrated, sensitive and simply amazing but they are much harder to install and require servicing every two years. OrcaLab already has one ICListen hydrophone which was deployed off Critical Point in Robson Bight over two years ago. This will be removed, serviced and reinstalled as part of this upgrade effort. The work will be ongoing.

In regard to the Southern Resident orcas, Paul was invited in May to speak at “OrcaSong” an initiative of the Mother Rising Collective (<https://www.facebook.com/motherisingcollective>) at Providence Farm Hall in Duncan BC. The collective was co-founded by Paul's granddaughter Hannah Auer. Hannah and the Collective brought together the local community to raise funds to support the recovery of Southern Resident orcas. Throughout the evening music was performed. Hannah, very movingly and knowledgeably, talked about the connection she personally feels with the orcas. Gathered in the hall were about 100 participants, only slightly more than the number of remaining Southern Resident orcas. In one part of the hall a silent auction was set up along with a large hanging mobile with hand made felt replicas of every Southern Resident orca arranged according to their respective families.



Research/Whales

There was no return of Yukusam, the lone Sperm Whale, who had visited the Johnstone Strait area from February - March in 2018. We wrote about him in our previous report.

http://orcalab.org/wp-content/uploads/2019/03/POS-Annual-Report_2018-pdf.pdf

This had been such an exciting and singular event and we were tentatively hopeful but not really surprised when he did not revisit. However, always busy, we had lots other whale related events to occupy our time.

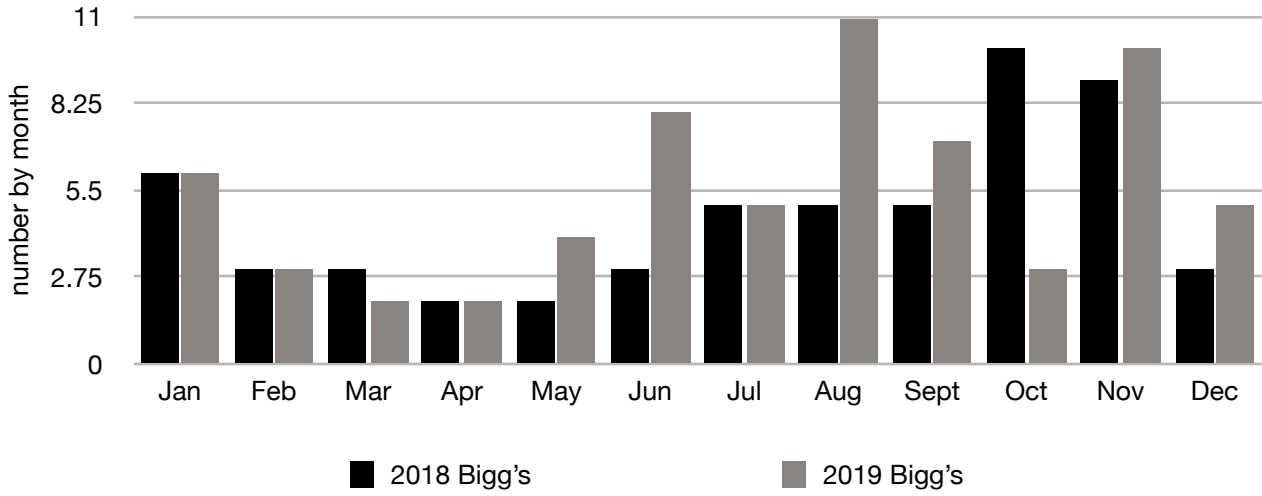
Each year life around the Lab is subject to certain rhythms. The winter and early spring months are usually quieter (unless a lone Sperm Whale drops by!) then the overly busy summer and fall months. It is just part of living seasonally and being subject to events driven by ancient patterns. By December, each year, the Northern Residents have mostly retreated back to the north. The humpbacks, hopefully well fed, depart on their long migrations to warmer climes. The porpoise and dolphins have become less abundant. At first, the contrast to the previous busy, daily whale activity can feel sudden. An adjustment in daily routines usually follows. Paul and Helena eventually leave OrcaLab to take up residence in Alert Bay, leaving the Lab in the capable hands of the winter caretakers. The area is far from devoid of activity - the sea lions by this time have settled on to their favourite rocks, the cormorants are nesting on their ledges, the harlequin ducks have returned and assumed their winter colours, and the migration of various other birds using the area as a rest stop, is well under way. The decrease in noise from the seasonal sports boats and cruise ships is rather welcomed. The weather, of course, changes (and not for the better). The prevailing winds shift to the southeast and the winter storms become more numerous as they steadily make their way across an unsettled Pacific Ocean.

Occasionally, in December, and often in January, some of the Northern Resident families choose to return. We have come to expect members of G clan, especially the I15s, to take occasional brief tours of the area. The A5s, (Corky's family) have historically returned and used the area during the winter months as well. Records going back to the 1960s show that members of the A42 matriline, previously known as the A8 matriline, in particular, have a preference for returning during the winter. Unfortunately for us, they tend to hurry through to Georgia Strait where they stay for long periods of time, travelling, pursuing salmon, and even finding beaches where they can enjoy a relaxing rub.

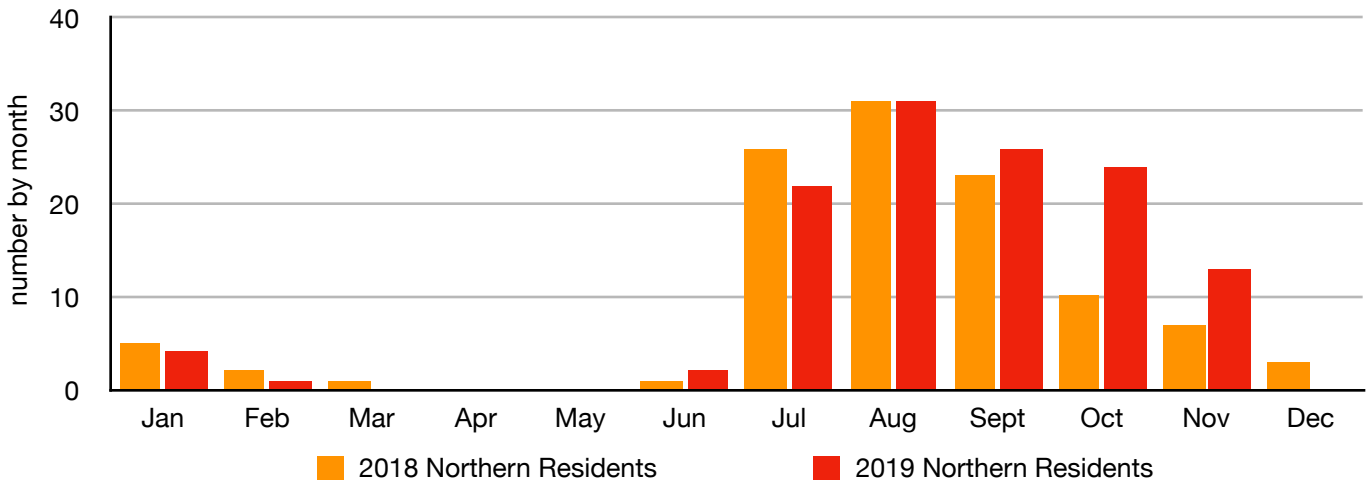
Bigg's orcas (or Transients) have very different habits from their fish eating "Resident" counterparts. Their food preference is for other marine mammals. They actively hunt seals, sea lions, porpoise, dolphins and other whales. These preferences determine their movements and their social habits along the coast. The West Coast Transient Community typically ranges the entire BC coast year round. The seasonal migration of salmon therefore does not directly affect their movements. The Bigg's orcas understand which areas of the coast to find prey. Researcher Graeme Ellis likened their habits along the coast as minding a large trap line. Sea Lions, like those who haul out on Hanson Island from September to April, have well established routines, as do dolphins, Minke Whales, and porpoise. Harbour Porpoise and seals are more likely to remain in areas throughout the year and are a reliable food source as the Bigg's enter and leave an area.

In all, we had 66 detections of Bigg's orcas in 2019, and by contrast, 56 in 2018.

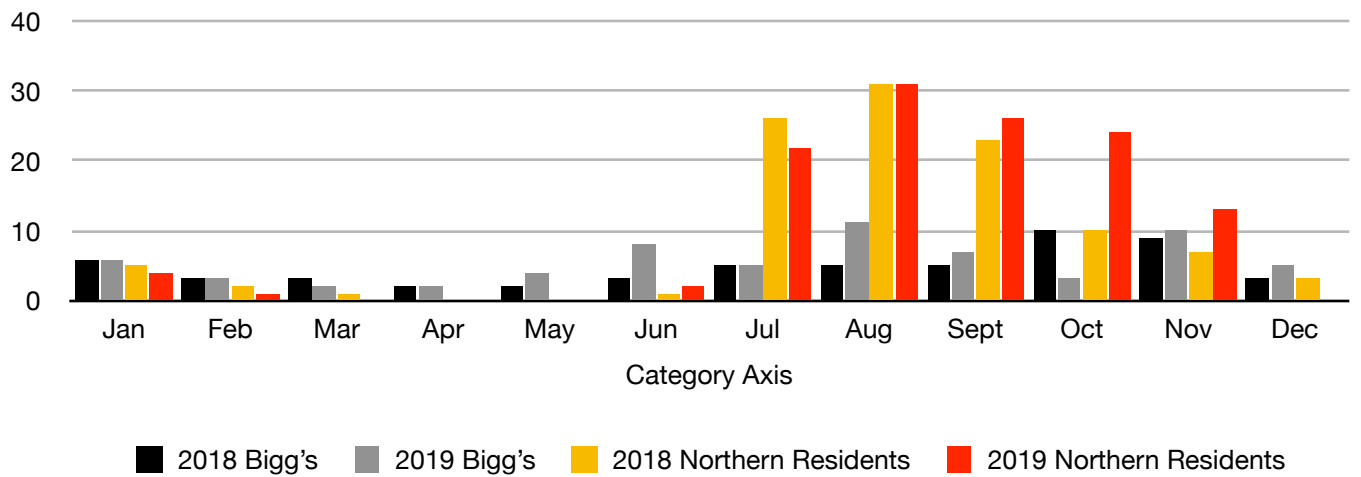
Bigg's detections 2018 and 2019



Northern Resident detections 2018 and 2019



Bigg and Northern Resident Orca detections 2018 and 2019



Use of the area by Bigg's orcas was similar both years with some slight variation. There seems to be increased activity in the summer months but this may reflect the increase of observers during that time. Detection of these stealth hunters is often solely reliant on opportunistic observations. OrcaLab, with its remote hydrophone network is able to augment visual detections by recording each time Bigg's orcas are heard regardless of time of day or year. Although impossible to identify which group is present acoustically this record contributes to fundamental information about how often Bigg's are present in the area.



Researcher Alexandra Morton observed that often more than one group of Bigg's will be present in a generalized area at the same time. These groups do not necessarily interact but work the area independently. For the most part, they usually move around by stealth so as not to alert prey that have highly developed auditory skills of their own. Convention dictates that the Bigg's orcas travel in small groups, only occasionally gathering in larger groups. In 2019, there were several occasions during which there were more than 5 maternal groups travelling together. When this occurred the Bigg's orcas proved to be quite vocal and very social with each other.

The Bigg's orcas can be present any month of the year whereas the Northern Resident orca community tend to be mainly present in the Johnstone Strait area during the summer and fall as a result of the migration of salmon, specifically Chinook and Chum. When the migrations decline in the late fall, and before they resume in the late spring, the resident orcas retreat and disperse more widely to their preferred winter haunts.

Members of the West Coast Transient Community, who frequent the Johnstone Strait area, have their own dialect. They can be discriminated from the other Transient communities of California, Alaska and those using the outer waters.

On November 22, one very surprising encounter was summarized as follows:

“ The Bigg's, getting closer to Parson Island, at 6:03pm, off the entrance to Blackney Pass, made some beautiful calls. It was dark as they travelled further into Blackney. By 6:34pm, they reached the range of our local left hydrophone, staying for an hour and a half calling continuously in Blackney Pass. Unfortunately, it was very choppy so we were not able to hear any blows outside the Lab. The Bigg's were very vocal and close between 6:50pm and 7:43pm before they eventually headed south again, passing very close to our Parson Island hydrophone by 8pm, headed back to Johnstone Strait. We continued to track them acoustically as they headed east, past Cracroft Point, and on towards our

hydrophone located in the Robson Bight Ecological Reserve. As time went on, their calls became sporadic with a few close calls at 11:40pm and 12:48am the next morning. We last heard them at 2:48am - an incredible and unprecedented 8 hours!"

In May 2019, researcher Jared Towers was surprised by two Bigg's orcas, normally only found in the outer waters off the west coast of BC, casually travelling among several others more commonly found in our waters. It was a rare encounter which added to impressions that there is still much to understand about these elusive visitors.

This past year, an updated version of the Bigg's orca identification catalogue was made available.

"Photo-identification Catalogue, Population Status and Distribution of Bigg's Killer Whales known from Coastal Waters of British Columbia, Canada" : Jared R Towers et al: Fisheries and Oceans Canada/ Pacific Biological Station.

The last catalogue had been published in 2008. The long interval speaks to the exacting work involved in producing this comprehensive work. For the reasons already suggested, the Transient population is difficult to monitor, their range is extensive, their travel patterns not predictable, observation is usually opportunistic, sightings of the same group may be infrequent, and their society can be fluid in the sense that some individuals may disperse and travel with seemingly unrelated groups.

The new catalogue has been an immense help with identifications made extra challenging by our work being shore based. We are pleased that our small contribution to this effort was graciously acknowledged and we are grateful for the information we get from the catalogue, being part of the sightings network and from Jared Towers personally.

The 2019 Northern Residents summer season was reasonably busy though we still experienced a reduction in the historic number of visiting families. In 2019, the groups present were the: A30s, A34s, A35s, A73s, A23s, A25s, A42s, C06s, C10s, D12s, D09s, G02s, G08s, G27s, I33s, I35s, I04s, I27s, I16s, I65s. Although this represents about half of the maternal groups (or matriline) in the Northern Resident Community only a portion of the groups who visited the area were seen on a regular basis during the summer/fall season. These were the A30s, A34s, A23s, A25s, A42s, I04s, I16s, I27s, I65s and I35s. The other groups mentioned remained in the area an average of just 1 to 3 days only. So in reality only 10% of the entire community was committed to the area.

The 300+ individuals of the Northern Resident Community, and their 41 maternal groups, are organized into 3 clans, "A" "G" and "R" determined by which discrete call types are used and which are shared. Each maternal group (the basic social unit comprised of a mother and her offspring) possesses approximately 12- 15 call types that define their specific dialect. (Ford, 1989)

Between clans there are no shared (or common) calls. Within a clan, relatedness can be determined by the number and similarity of shared call types. The closer in similarity, the closer families are related. Our work at OrcaLab has focused over the years on determining the differences between very closely related maternal (matrilineal) groups. Dr John Ford first proposed that orca pods have unique dialects in the 1980s. This idea informed our ability to track the whales over the large area covered by our emerging and then established hydrophone network.

In 2019, the limited number of maternal groups present were from “A” and “G” clans only. There were no “R” clan families present. In seasons past we could count on at least one encounter with all three clans. These events would likely increase the number of orcas present beyond 50 and were deemed “superpod” gatherings. These were fairly common experiences, so much so, Stubbs Island Whale Watching used to hold a contest amongst its staff to guess on which day and how big the gathering might be.



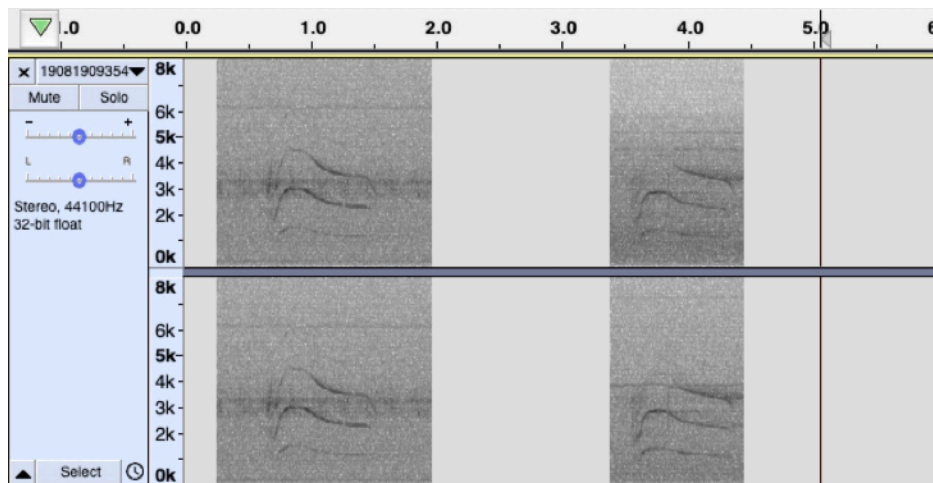
But the past summer was not without fruitful observations. In the past few years, ever since the death of Tsitika (A30) in 2013, her daughters, Clio (A50) and Minstrel (aka Blinkhorn, A 54), have shown definite signs of becoming more independent of each other as their own families have grown. The fact that the two daughters were tending to travel apart presented us with the opportunity to learn whether the two emerging groups could be distinguished acoustically. Tsitika, who inherited her mother’s dialect, passed this on to her two daughters. The question we hope to investigate in the future is whether there have been any identifiable changes in the transference, therefore illuminating how matriline specific dialects form. We know from our previous work that it has been possible to tell very closely related matriline from each other but never between still living sisters. This has been key to our ability to monitor, discriminate and track the different families as they move through the area. Formerly, families were defined acoustically only as to their pod (Ford, 1989). Pods were defined as closely related families, who share certain call types, and were known to travel together. Once again, as pods grew in the number of individuals, as daughters matured and had their own babies, and when a matriarch died, the pods tended to separate into new, emerging matriline that travelled independently. This is what occurred within the original A1 pod, the group most regularly seen in the Johnstone Strait area during the summer. Beginning in the 1980s, the pod’s matriline; the A36s, the A2s (later, the A30s) and the A12s (later, the A34s) no longer necessarily always travelled together as they had done in the 1970s. It became imperative to be able to discriminate these different groups. Slowly, we began to understand that each of these families had preferences within their closely related call sets, i.e. calls that they favoured and used more often. We also noticed that they articulated certain of their shared call types differently from each other.

With growing confidence as to our ability to accurately discriminate certain groups, the way in which the Northern Residents use the Johnstone Strait/Blackfish Sound area started to come into clearer focus. It turned out that the A1 matriline have a significant role in social activity when in this area. The A1 matriline (especially the A30s) are usually (not always) the first group to establish themselves in the

area sometime after the summer solstice in late June. From then on and throughout their stay in the area one or more of the A1 matriline will travel to greet incoming visiting groups and escort them into the area proper. Likewise, when the visitors are ready to depart they will be escorted out, with the “host” A1 matriline retuning to resume their own stay. We have seen this behaviour repeatedly. Over the years, all the A1 pod matriline have shared this responsibility. Sadly, the A36 matriline disappeared with the death of its last surviving member, Kaikash (A46) in 2018, leaving just the A30s and A34s. Interestingly, the A30s and A34s, do a sort of “time share” by choosing slightly, although sometimes overlapping, days in which to occupy and ‘manage” the area thus reducing the need for duplicate “host” efforts. Another interesting feature of this behaviour is when more than one A1 group is present, the respective matriline position themselves either in front or behind the visiting groups.

With the emergence of the two new A30 matriline we hope to gain enough experience and recordings to be able eventually to distinguish them apart. Despite their calls being very similar, social cohesion is important and solidified by each family member's ability to recognize their own natal group in a variety of conditions and circumstances. This is especially important when several groups are travelling together or when the whales are spread far apart.

Below are two examples of the same call type, “N04”, made by the A54s (left) and A50s (right). This call type is used frequently by both groups. The calls visually present a great deal of similarity and highlight the difficulty of the task ahead. We will be looking carefully at historic recordings that might further offer support to this idea.



The summer of 2019 had other surprises.

On September 5, an extraordinary event unfolded. Cordero (A85), a young 14 year old female orca of the A25 matriline had her first known baby while in the Johnstone Strait area. What makes this so special is Cordero's history. Belonging to the A5 pod, Cordero's mother, was Nodales (A51). Cordero was Nodales' first born. Nodales died in 2011 when Cordero was just six years old. Her death must have come as a huge shock to the young whale. Her young sibling (A98) also died at the

same time. Nodales was then just 25 years old. Her death echoed that of her own mother, Sharky (A25) who died when she was the same age in 1997. Orca mothers are supposed to live long lives, long enough to ensure their babies survive and grow into adulthood. These two sad deaths were far too premature.

When Sharky died her two orphans, Nodales and Surge, were just 11 and 3 years old respectively. The two little ones were set adrift by their mother's death. We would see them following far behind the other orcas. Gradually over the span of a few years this gap lessened till finally they became part of the crowd once again. Nodales matured and had Cordero in 2005.

Prior to this, in 2002, Nodales, not yet a mother, captured our imagination and hearts when she took the orphaned Springer (A73) under her care temporarily soon after Springer was reintroduced to her home waters. She is even credited with curbing Springer's propensity to interact with boats by seriously intervening when Springer attempted to do so, by literally "tossing" Springer away from boats.

After Nodales had Cordero, life went on for this little group which included Nodales' brother Surge. But then Nodales had another baby in 2010; and a year later she and the baby went missing. When this happened Surge and Cordero coped with this loss by splitting up and going to separate A5 matriline; Surge began to travel with Holly (A42)'s group while Cordero went with Ripple (A43)'s group. Then inexplicably in 2012, Surge and Cordero came together again and stayed with Ripple's group. Cordero, still very young, was still not yet identified as female. Male dorsal fins begin to grow rapidly (sprouting) during the onset of puberty. As time went on there were no such changes to Cordero's fin and it was understood that Cordero must be female.

In 2018, Cordero took up a close friendship with Cutter (A86) who is from Minstrel (A54, aka Blinkhorn)'s A30 group. The two young females were inseparable and their friendship continued into 2019 when Cutter became a mother for the first time. Still Cordero did not leave her side, and during the summer Cordero and her uncle Surge, swam along side of Cutter's family.

Then on September 3, the orca families who were frequenting the area travelled into eastern Johnstone Strait, leaving just Holly (A42)'s group in the western Strait. On September 4, just before the orcas returned, Surf (A66), Holly's son, exhibited very unusual behaviour. He paced back and forth just west of Robson Bight while the rest of his family continued their travels to Blackney Pass and out through Blackfish Sound without him. What was he waiting for? An hour later, he rushed through Blackney Pass by himself in a hurry to catch up with his own family. Some distance behind, the other groups then filed up the Strait, passed through Blackney, and also disappeared into Blackfish Sound.

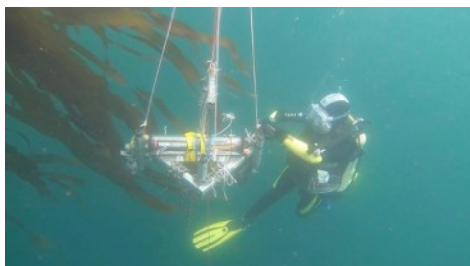
Then, just a day later, late in the day on September 5, word came to expect the groups coming back from Queen Charlotte Strait. Paul and Helena happened to be in Telegraph Cove, having dinner and saying goodbye to Paul's granddaughter Hannah when Helena received a phone call from Jared Towers, saying there was a very young baby swimming with Cordero! Jared and Helena had previously discussed that if and when Cordero was to have a baby, the baby would somehow be named in honour of close friend Twyla Roscovitch who had died two years before. The guidelines for nicknaming young orcas do not allow for naming after individual people but rather for the geographic locations closely associated with their mother. To incorporate this idea the name "Twilight", after *Twilight Rock* in Broughton Archipelago was chosen. After dinner Paul and Helena hurried home only to be met by everyone, excited, stunned and amazed. They had seen the baby! What totally

astounded everybody was that Cordero, baby and uncle Surge, came in leading the rest of whales into Blackney leaving the impression that the other orcas were reverentially holding back and allowing Cordero to move forward with the baby. Jared, continued to follow the whales into the early evening. As he came to a stop he watched them head slowly into the the shimmering twilight. For everyone, this was really the highlight of the summer. Now we hold our breath that it will truly turn out to be a new beginning for this matriline.



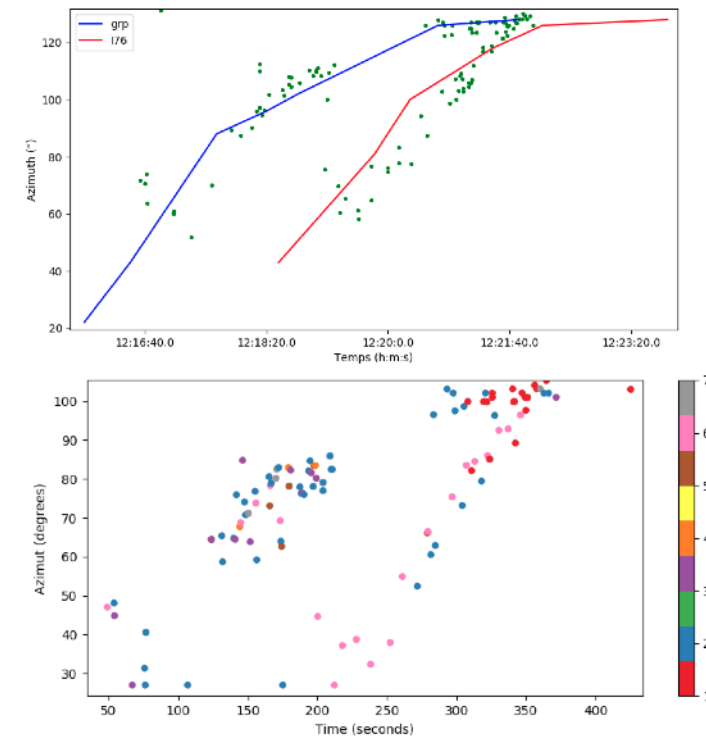
During the summer of 2019 we welcomed back Professor Hervé Glotin from the University of Toulon, France and for the first time, his graduate student, Marion Poupard. Marion had been working with Hervé to design and develop an acoustic array consisting of 5 hydrophones mounted on a small frame.

This was deployed off shore of the Lab with the idea that as orcas passed, in either direction, the individual calibrated hydrophones spaced across the array would localize the calls. From the deck, observers took still photos (with an imbedded time stamp) of the orcas, an observer operated “Big Eyes” binoculars and communicated the position of specific individuals to another assistant who noted these positions. Meanwhile, inside the Lab the remote video camera was used to follow the whales during their course through Blackney Pass.



The hope was that Marion would be able to then calculate which orcas were responsible for which calls. Later analysis required collating various information. All the photographs were examined, and individuals, where possible, were identified; the audio recording was later annotated, the video recording was downloaded and reviewed. Volunteer Alicia Doohan provided Marion with a great deal of assistance while she remained at the Lab. Dylan Smyth contributed by reviewing the still photos for identification, as did Helena, who also helped with the recording annotations.

Currently, Marion is in the process of writing up the findings. It is clear from this work that it was possible to graph the calls and follow the tracks of specific individuals as shown in the preliminary graphs below.



Results for August 31 2019

First graph:

The first track is the big group (blue), and the second is the male I76.

Second graph:

Each colour represents a type of call: N23i=1, N25=2, N30=3, N39=4, N45=4, N48= 6, unidentified call=7.

The right track (I76) shows call types N48 (6, pink), N25 (2, blue) and N23i (1, red) at the end of the track.

The big group produced all call types and (N23i, red) at the end of the track.

We can see that the type N23i was made just before the meeting of the 2 groups and after.

This is promising work. Going forward there was a resolve to streamline the data collection. As Marion’s experiment was reliant on daylight and visual data it was agreed that the various components of the visual data, i.e. photos, “Big Eyes” positions and video camera operation, needed more effective coordination and be simplified if possible. Discussions are on going in advance of next summer when the array will be redeployed.

Marion also had to grapple with the fact that the whales were not always vocal when entering Blackney Pass. She held her breath every time there were passing orcas. This is actually a somewhat expected behaviour. Blackney Pass acts a connector to and from the bigger waterways of adjacent Blackfish Sound and Johnstone Strait. Travel through is usually a straightforward effort. In contrast, when orcas enter or exit Johnstone Strait a fair amount of group coordination is required, and likewise, when they travel Blackfish Sound with its comparatively wide expanse. Fortunately, this was not a constant and Marion was able to secure usable recordings for her analysis.



In 2019 OrcaLab had two pairs of “Big Eyes” binoculars. One, as mentioned, was dedicated for identification purposes, and the other for regular visual scans of Blackney Pass that were done each hour for 20 minutes. Janie Wray instructed the volunteers how to use the “Big Eyes” and the scanning protocols.

The results were entered on a tablet with software originally developed for similar use on the north coast by Dr. Eric Keen of the University of Sewanne, Tennessee and NCCS.

The following shows results of these scans.

Observations were made from Orcalab for 1,188 hours over 81 days between June 24 and September 16. In this time, volunteers conducted 973 systematic 20-minute scans of the study area (339 hours). During these scans, we logged 3,301 sightings of marine mammals and 2,933 sightings of vessel traffic.

Table 1. Monthly sighting rates (sightings per minute of scan effort)

Species	May	June	July	August	September	October
Effort (minutes)	0	18	144	129	48	0
Humpback whales	--	2.67	2.77	3.45	4.60	--
Bubble-net feeding	--	0	0	0	0	--
Fin whales	--	0	0	0	0	--
Dall’s porpoises	--	2.22	1.88	1.06	0.77	--
Orca	--	0.22	0.90	2.45	2.25	--
Vessels	--	9.00	9.36	11.04	7.62	--

Using these sightings, we mapped the location and characterized the group size and behaviour of detections of humpback whale (n=1,113), orca (n=557), Dall's porpoise (n=485), harbour seal (n=831), Pacific white-sided dolphin (n=222), and Stellar's sea lion (n=2,5

Figure 1. All sightings of small boats (left) and marine mammals (right) from Orcalab in 2019. For marine mammal sightings, dots are scaled by group size.

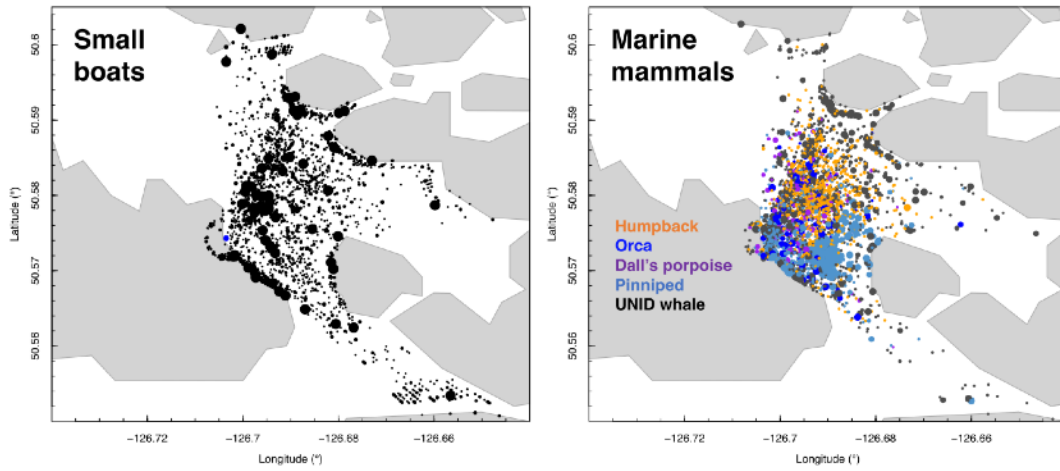


Figure 2. Sightings from Orcalab for each marine mammal species. Dot sizes are scaled by group size.

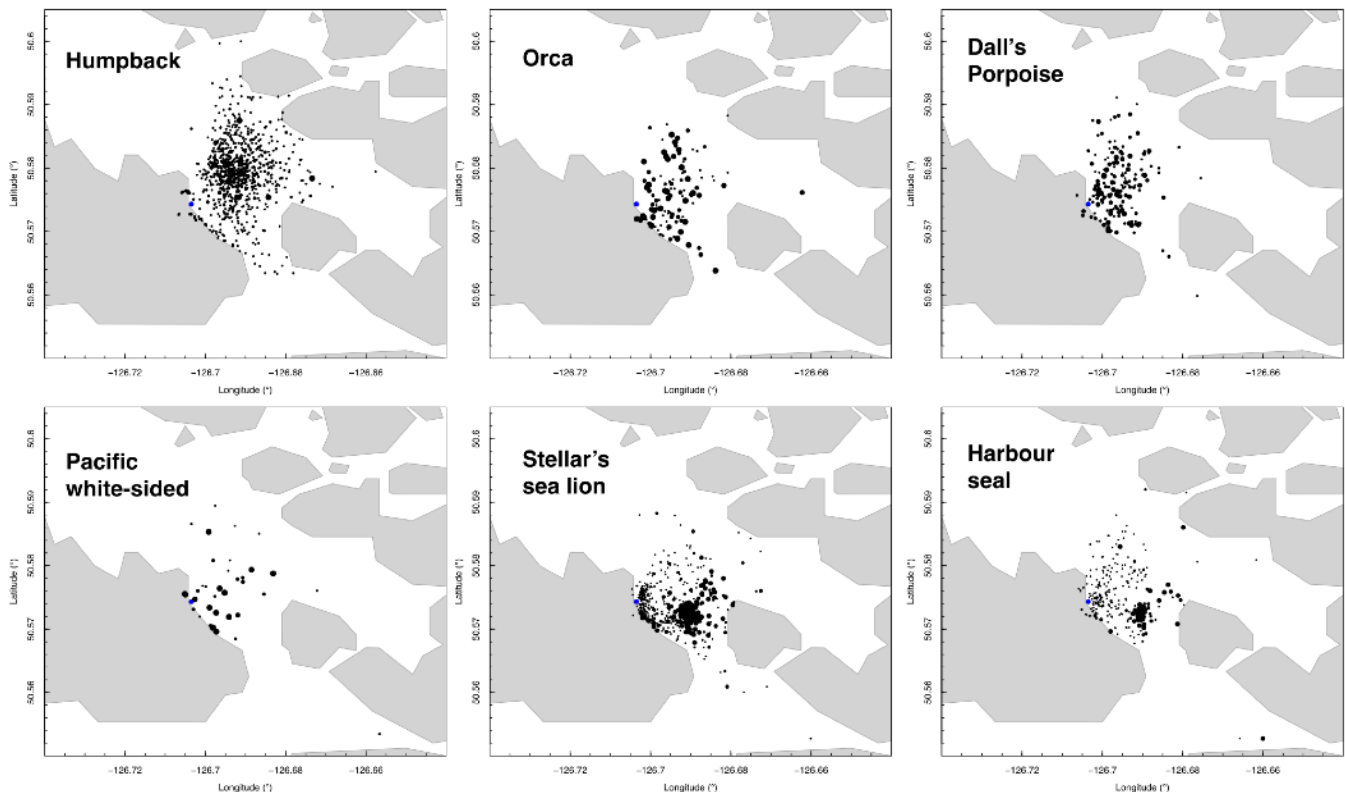
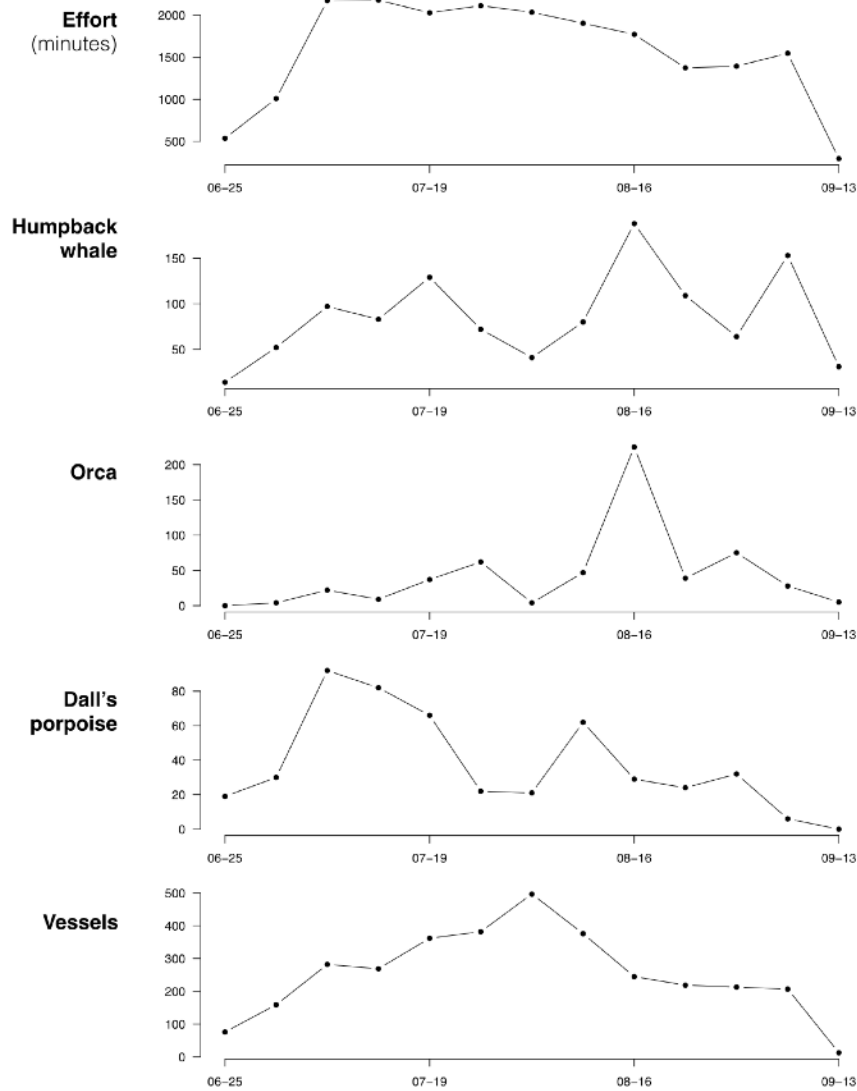


Figure 3. Weekly effort and sighting totals from Orcalab in 2019. Sighting totals are calculated by adding together the group sizes of all detections.



There are several take-aways from these data. Clearly, Blackney Pass (where the Lab is located), is a busy place as the number of small vessels and marine life verifies. The peak of activity for orcas in August is similar to the impression served by the increase in the incidence of visiting families in August. However, we are cautious with this result because when orcas are present the scanning effort was often terminated so that photographs, video, identification and recording efforts might occur. We will be addressing this short coming in 2020 by reducing the need for scans every hour. The problem did not present at other times.

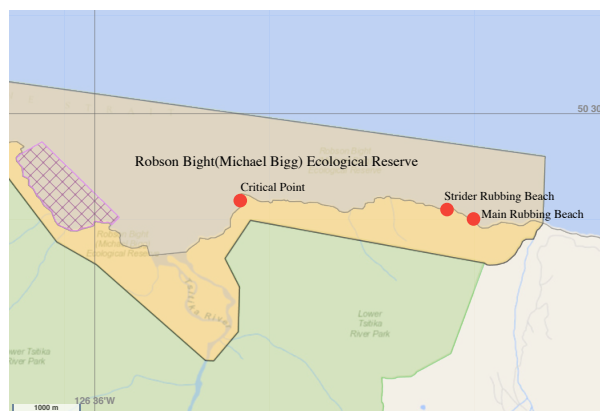
The Dall's Porpoise use of the area is very interesting, reaching higher levels in the early part of the summer and then declining. The Dall's Porpoise might be showing greater sensitivity to boating activity

which coincidentally peaks as the porpoise decline. The Humpback Whales and the orcas are more likely to continue on with their own agenda and perhaps be less affected by the presence of boats. Proximity and the unknown intent of boaters may still offer a concern for these species, as perhaps does the cumulative negative impact of boat noise. The September 16 cessation of scanning meant that the peak of the humpback activity was not fully demonstrated. Typically, humpbacks use Blackney Pass differently at different times of the season. During the first months after arrival, the humpbacks are primarily focused on feeding and are most likely solitary. But as the season progresses, and before migration, the humpbacks become more social with each other and use Blackney Pass in increased numbers. Feeding is still a serious concern for these whales but they are often now seen with other humpbacks hunting cooperatively and engage in sustained sessions of song, a clear sign of their increased social activity.

Even though we stopped the scans mid September our effort at identifying individual humpbacks actually increased through the fall. OrcaLab volunteers, Claire Gillaume and Quin McIntire, in particular, spent long hours in the Lab identifying as many individual humpbacks as possible, like "Harlequin" shown below. Individuals were always featured in the daily summaries.



The Northern Resident orcas are renowned for their habit of rubbing their bodies on the smooth stones of particular beaches. It was this unique behaviour, where the whales are very close to shore and vulnerable, which largely determined the establishment the Robson Bight (Michael Bigg) Ecological Reserve (RBMBER) in 1982. In 2019, OrcaLab continued to monitor the Main Rubbing Beach at the east end of the Reserve and decided to develop similar remote systems at nearby Strider Beach.



The following table plots the individual rubs at the Main beach from the late fall of 2018 to the end of October 2019.

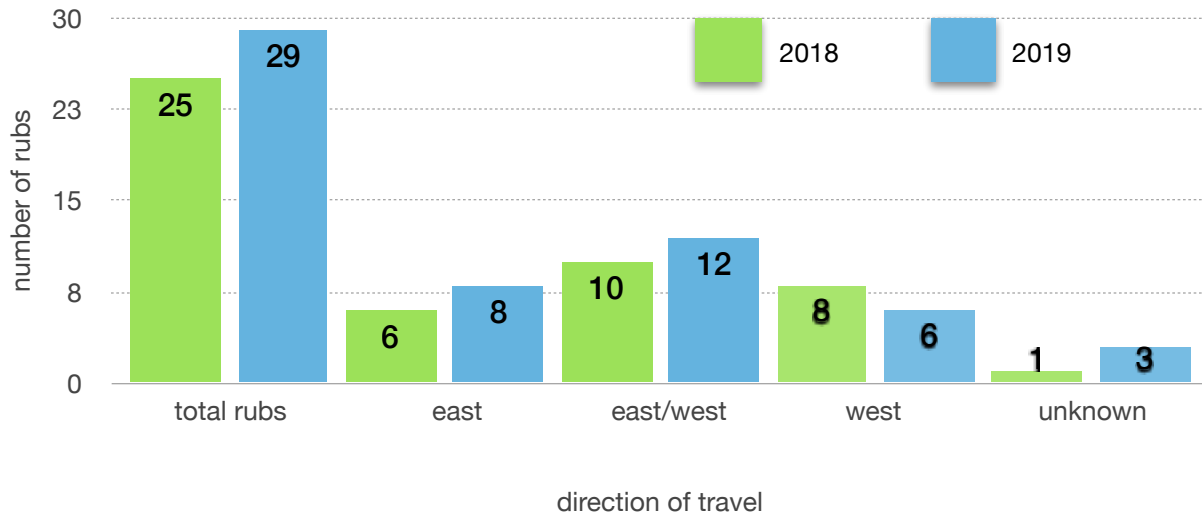
Table 2.

Detection and length (min) of rubs from Nov.1 2018 - Oct. 31 2019

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Nov 2018																		?										29			
July 2019																						55	5 2 34	5 2	3			3		17	
Aug 2019							4 22	25							0.5		10					10	10		0.5		1	3		2	
Sept 2019			3	48	8			20 2	1 31										2	6											
Oct 2019																															

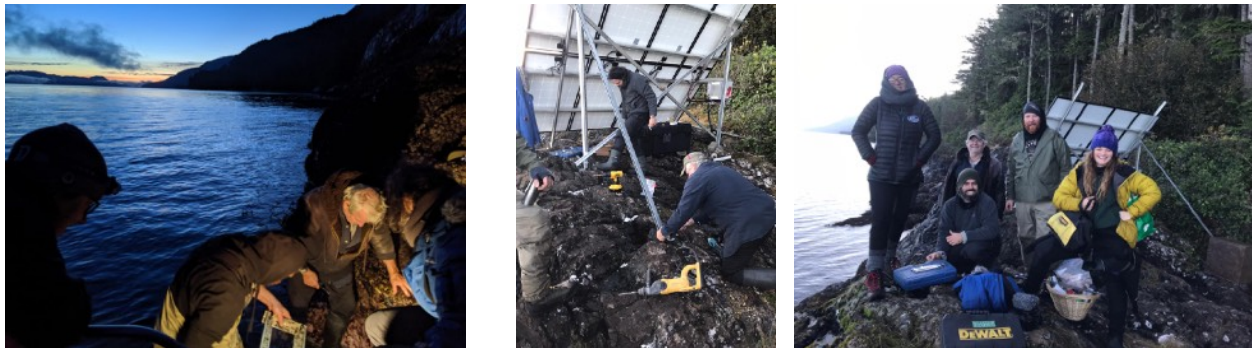
In 2019, we again compared the direction from which the whales preferred to approach the Main rubbing beach. The results were similar to those in 2018. In 2019, the orcas again favoured using the Main beach when approaching from the west, i.e. travelling east. It is also clear that the Main beach continued as a terminus of sorts, i.e. whales when travelling east to the beach often turned around after finishing a rub and headed west again.

number of rubs compared to direction of travel for the 2018 & 2019 summer/fall seasons



The seasonal peak occurs in August coinciding with the greater use of the area by the Northern Residents. Northern Resident groups were still present in October but there were no rubs detected in October. This, in itself is not unusual, for as the summer season winds down and shifts into fall the orcas quite often leave off going for rubs and decrease their social activity, to concentrate instead on greater feeding efforts. However, detection was complicated by the fact that the remote underwater camera and the hydrophone (attached to the same frame) were removed October 12 to prevent possible damage from the predicted onset of more frequent seasonal storms. We do this every year and the timing is usually determined by when there is an appropriately available low tide when the equipment can be more easily removed without requiring a complicated dive. This meant, however, we could no longer fully monitor activity at the beaches. The remote surface camera, mounted in a nearby tree remained so that during daylight hours monitoring was still visually possible.

The frame used to mount the camera and hydrophone was not removed immediately. The previous frame had been damaged when left in place and needed repair before use in 2019. So, on October 27, with an advantageous low tide occurring just after 6am, Paul along with an eager crew, departed for a trip to the Reserve. The crew set off in the chilly dark at 5am warmly dressed and clutching hot drinks. After arrival, and before the sun rose, the crew successfully removed the frame and then turned their attention to Strider Beach, a short distance to the west where they secured the new solar panels for the winter.



Strider Beach is the second largest rubbing beach within the Ecological Reserve. Understanding how the whales use the different beaches in the area is important. For years, in conjunction with the BC Park Warden programme, there has been concerted efforts to keep track of the activity at the beaches. The Wardens monitor the Ecological Reserve from their vantage point on a cliff on Cracroft Island opposite Robson Bight. They can see Strider clearly and note when the whales go in for a rub and note when they are finished and move on. The wardens give us a heads up when the whales head for the Main beach. Likewise, when the whales are at the Main and heading west to Strider, the Wardens are notified. In the past several years the whales have shifted their use of the Main beach, showing a marked preference for Strider. The rubs at Strider have been trending to be more frequent and of a longer duration. The situation at Main improved somewhat in 2019.

In 2019, OrcaLab began to develop a plan to install remote monitoring systems at Strider. This plan included installing a seasonal hydrophone & two remote cameras, surface and underwater, and the necessary power to support the system. A grant received from the North Island Marine Mammal Stewardship Association (NIMMSA) enabled us to install power capability at the site.



At the beginning of September, Clay Fischer from Veridian Energy Co-operative, returned to Hanson Island to supervise the installation of the solar panels, the batteries and a big pelican case for housing the batteries. Clay had worked on the power systems at the Lab previously and has been a supporter of our work since. It was great to have his expertise on this new project. Some site preparation had already been done earlier in the summer with the help of Mike Durban and Mathew Prévaille.

The installation and operation of the hydrophone and cameras will hopefully happen in 2020, in collaboration with Fisheries and Oceans Canada (DFO). Plans include upgrading to calibrated hydrophones at 3 sites - Main, Strider, and a beach west of the Reserve nicknamed "Kazumi" because of its location half way between Kaikash Creek and Izumi Rock. A fairly comprehensive picture of how these sites are utilized by the whales should be forthcoming.

OrcaLab operates six hydrophones in its remote hydrophone network, and in conjunction with Explore (www.explore.org) a network of nine remote cameras, including two underwater. The underwater cameras, at the Main rubbing beach and CP, operate June-October. During the summer months there is also a manually operated surface camera at Cracraft Point. Data from the networks are transmitted via wireless network to our Lab on Hanson Island and thence to the Internet.

For the most part these networks work very well; however, every so often problems inevitably pop up. Probably, the most interesting challenge in 2019 happened at the Seal Lion Rock camera site when the sea lions nearly destroyed the camera by leaning on its support. Amazingly, although the support was destroyed the camera survived the crash to the rocks below. The support had been problematic previously so this did not come as a total surprise and kicked into action a plan to replace the metal structure with that of a log strategically put into position. Like everything we do, there were many steps involved before this could be accomplished. A very long and promising log was secured at the Lab for this purpose. But then the descending tide cycle meant it was going to be a while before the log would become accessible. Eventually, the log was teased out from shore and pulled away from the beach, and dragged to the sea lion rock site, a short distance away along the Hanson Island shore. This idea was the brain child of Mathieu Prévaille who came along with the OrcaLab crew for the installation. The mission was completed with a lot discussion, a come-a-long, and some old fashioned heave-to. Mike came up with the idea of using a block and the *June Cove* to pull the log into the forest. With the unassuming log in place, the camera was remounted while the curious but temporarily displaced sea lions looked on from the water. After the crew finally departed the sea lions resumed their former positions. This re-installation was successful BUT it would be months, and a few more attempts to get the camera's horizon straight!

Around this time the possibility of an underwater camera at the Sea Lions site was explored. The underwater camera used during the summer at CP was deployed off the haul-out site with the hope of capturing images of the sea lions as they cavort underwater just offshore. This was only moderately successful and the camera needs to be repositioned.



Corky

December 11, 2019 marked the 50th anniversary of Corky's capture in Pender Harbour. This was the second time her A5 pod had been captured; the first was in 1968. Her life, along with the others who were removed and those who remained, was forever changed. Corky was less than five years old, her mother Stripe (A23) and her younger sister (A21) were released, Corky was taken to Marineland, Los Angeles. She would spend the next 18 years there before being moved to Sea World, San Diego where she still resides. Her life has been filled with the tragedy of losing seven babies, her close pool mate, Orky, as well as other members of her family who had been captured.

In the late 1980's and through the 1990s efforts were mounted to appeal for her release back to home waters. These efforts took many forms, protests, petitions, letters of appeals, personal contacts, visits to SeaWorld, the creation of "Corky's Freedom Banner", and concerts, notably, "Kiss the Sky". Nothing worked and Sea World has remained obstinate in its resistance to the idea. But many others were encouraging so the hope has never faded.

Corky, now 55 years old, is probably running out of time. Prior to 2000, the hope was that her release would succeed while her mother was alive. Not so. Stripe died in 2000. Stripe's life was certainly not an easy one. She herself suffered through the captures which devastated her pod, the loss of her oldest daughter, the accidental death of her youngest daughter in 1973 just four years after the capture, the struggle to witness her pod regain its former strength, the challenging birth of her youngest, Fife, when she was 44 years old. The death of Stripe was a set back as she would have provided Corky with the much needed link to her past. Corky's two present day siblings have never known her. But because they share a common heritage of language and customs the hope remains alive that Corky could find her place with her family once again.

Now there has been a new development in the quest to release her. Double Bay on Hanson Island, not far from the Lab, was bought by Michael Reppy. Michael has been working, with considerable effort and money, to transform the old fishing lodge and surrounding bays into a sanctuary suitable for bringing Corky back home. The wisdom of simply releasing Corky back into the wild is now considered questionable because of Corky's age and long internment. The idea now is that the sanctuary would, at least, be a suitable retirement home for Corky, and that the situation would be further assessed as the project progressed. It is a great plan and if Sea World was smart they would jump in. They are crucial for its success. They not only hold the key to the kingdom, they have the needed expertise to transport Corky safely and help look after her. If only they would recognize the logic of how this might be mutually beneficial!

Meanwhile, Christine Caruso, a teacher from the Seattle area, was so inspired by Corky's story and plight that she decided to conduct her own campaign, and while doing so, make a movie featuring Corky and the efforts to set her "free". Christine has now dedicated much time, energy and her own money to this cause. So when the 50th anniversary loomed she decided that she would like to film one of the original captors, Cecil (Sonny) Reid, in conversation with Paul on location in Pender Harbour. With a very short window before the anniversary, Paul and Helena travelled over to the Sunshine Coast on December 5. Christine travelled from the opposite direction with film maker Michael Harris and Michael Reppy from California. Sonny came down to the dock area where he and Paul talked with each other about the past, about how they felt at the time, how they feel now and how their lives were changed.



Back in 1969, Paul was beginning to fathom the damage that captivity entailed. A year before, in 1968, he had been mostly intellectually curious about the whales who had been recently captured. Using a microphone dipped into the water inside a plastic bag he recorded their sounds while he sat on the Pender Harbour dock through the cold, dark night. His commentary mentioned the position of the whales, his astonishment about the calls near and further away, the blows of the baby next to its mother, the whales not enclosed but still waiting beyond the net for their family. Over the next year as his work progressed and intensified with Skana and Tung Jen (Hyak II), the little baby who had been taken from the 1968 capture, he became convinced of the unfairness of keeping these intelligent (don't forget Paul was a neurophysiologist) and sentient beings in undersized, sensory deprived conditions. By the time of the 1969 captures in the same location as the first, Paul had fundamentally shifted his attitudes and beliefs.

For Sonny, a fisherman by trade, the captures were an obvious financial opportunity. "Killer Whales" were not highly thought of by fisherman in those days so "what could be the harm?" The Aquarium had offered \$5000 for a single whale captured earlier in February. This whale, Hyak I, was released before the sale was completed but the possibilities for making cash were firmly seeded in the minds of locals who were keen on the next opportunity to come along.



At one point Paul asked Sonny, "When did you change your mind about the captures?" Sonny's reply was immediate, "When I heard them cry." Sonny paused, "But by then, they were already being lifted onto the truck."



If only.

There was another pause in the conversation; the afternoon was getting on, Michael and Christine still had to visit with Anne Clemence whose house had overlooked the pens that enclosed the captured whales, and there was a ferry to catch. Anne had taken many pictures in 1968/9. Now an elegant elderly woman she made tea and egg sandwiches (with the crusts cut off) for Christine and Michael, shared her photos, and talked about the whales.

After a mad dash for the ferry back to Horseshoe Bay the day ended. The anniversary of the capture just days away.

<http://orcalab.org/2019/12/11/corkys-50th-capture-anniversary>

A final note: While the visit to Pender Harbour was happening part of Corky's extended family, the A42s, had made the journey back to nearby Sechelt. For a few days they toured the area. They had not been seen in this area for 50 years. Coincidence?

Film Projects



In 2019, OrcaLab was involved with four film projects.

The first was for "The Nature of Things", Listening to Orcas:

<https://gem.cbc.ca/media/the-nature-of-things/season-59/episode-15/38e815a-012447fd939>
(Note geo protected)

The crew consisted of four people; co-directors Michael Alder & Yanick Rose (also cameraman), sound person and back-up camera, Cameron Sinclair, and presenter Sarika Cullis-Suzuki. Paul and Helena had met Sarika before. She is the daughter of Dr David Suzuki, the well known presenter of "The Nature of Things", scientist and environmentalist and of Tara Cullis, environmentalist. The filming went well although it was intense. The crew stayed for the better part of a week which is unusual as film crews are often on a tight time budget. This was an ambitious project featuring not just Paul & OrcaLab but also Alexandra Morton, Ernest Alfred, Jared Towers, Dr Lori Morino and Dr John Ford. The finished product highlighted the threats concerning orcas; the need for their protection, aspects of their natural history, and their social and cultural behaviours. At this time when the coast is exposed to increased industrial intrusions and other environmental threats the focus on orcas was timely and hopefully the broad reach of the programme will have an impact.

The second film crew to visit Hanson Island was from Knowledge Network, BC's publicly funded educational cable network as part of its history of BC series. Director Kevin Eastwood and crew

focused on Paul's early history and for a day filmed and interviewed Paul in the Lab. It is not yet known when this segment will be aired. Ironically, Knowledge Network was started by Dr Pat McGeer, who as head of the Department of Neurosciences at the University of British Columbia, hired Paul to work as an assistant professor and as whale researcher at the Vancouver Public Aquarium. Paul being a neurophysiologist was fascinated on walking into Dr McGeer's office at UBC for the initial interview and seeing Moby Doll's massive brain sitting in a huge jar of formalin. On the shelf above were several smaller jars with human brains in them. In comparison, Paul later recalled, they looked puny. The complexity of the orca brain, and not just its size, fascinated Paul instantly. Being nearly four times the size of a human brain and even more complex, Paul wondered as he viewed Moby Doll's brain, "What on Earth is this brain used for?" - a question that has stayed with him all these years later.

Moby Doll was the young Southern Resident male orca who was captured in 1964. The Aquarium had tasked artist Samuel Burich with obtaining a dead killer whale so that a life sized model could be made for the aquarium's new foyer. Along with his assistant, Joe Bauer, Burich mounted a harpoon gun above the eastern shore of Saturna Island and waited. Weeks went by but eventually a juvenile male came close and floated motionless in the water below. They fired the harpoon which struck the whale but didn't kill him. The decision was made to take the orca across Georgia Strait by towing the harpoon line still stuck in the whale's back. The whale was so cooperative the boat crew dubbed him "hound dog". The aquarium quickly secured the Burrard Dry Dock in Vancouver's north shore harbour as a pen to receive the wounded whale. After time passed Moby Doll was moved further west to Jericho Beach and into another pen. At first he was fed fish on the end of a pole, but eventually as his captors became less afraid, he was fed by hand. He survived 3 months. Fascination with orcas followed and the captive industry was born.

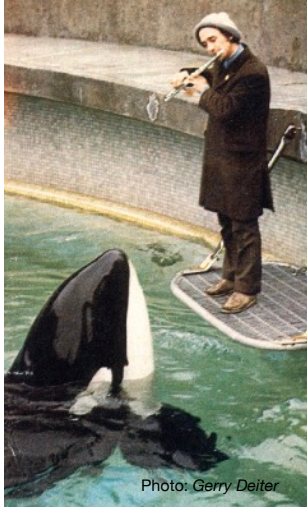


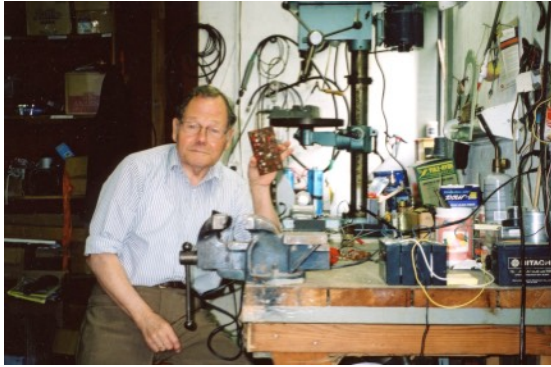
Photo: Gerry Deiter

The Royal British Columbia Museum (RBCM), located in Victoria, reached out to Paul in March 2019. Initially, Paul was asked to contribute a story about his early experiences with orcas for a book the RBCM was creating as a scholarly, yet accessible, companion to the orca exhibition they were in the process of creating. Paul also happily contributed a very old hydrophone for the display. Later, the RBCM requested that both Paul and Helena be interviewed. Doing this on Hanson Island became logistically impossible so it was arranged to coincide with a visit to Victoria where the film makers had rented rooms in a large old Victoria house with lovely gardens! Taking each in turn the crew filmed Helena, then Paul. We have not yet seen the results but applaud the Museum's efforts to raise public awareness about the whales of BC.

Lastly, film makers and OrcaLab volunteers, J r mie Collado and Claire Guillaume filmed both Paul and Helena for a new OrcaLab website which is being developed. Both J r mie and Claire are talented photographers with a strong interest in video. This was their first year at the Lab. Both contributed to the 2020 calendar produced in December 2019.

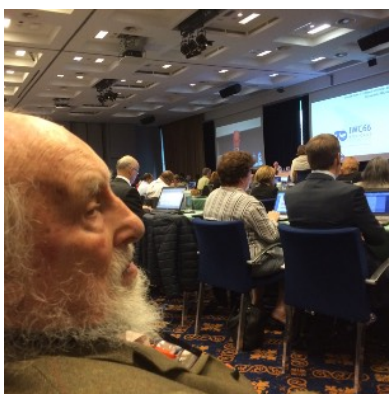
Volunteers, Visitors, Carpenters and Caretakers

Before beginning this section we would like to mention two persons who had great influence on our lives and work.



Bill ter Brugge, became involved with OrcaLab in the 1980s. Bill, a technical wizard, built entire systems (transmitters, antennae, hydrophones) that were used to create OrcaLab's hydrophone network. On a sad note, Bill died October 2. He was 93 years old. Certainly a long life. His wife, Kathy and son, Roy predeceased him and for the last several years he was living in the extended living unit at the Alert Bay Hospital. Bill came to Alert Bay in the 1950s and made a home for himself and Kathy. He was born in the Netherlands, survived the war, had been a

merchant marine as a young man, travelled the world and then chose Alert Bay to settle down. He bought property on one of the town's hillsides, built a home and made a beautiful garden. Bill was a Ham Radio enthusiast and electrical engineer. In the 1980s he crossed paths with Paul who was just beginning to think about experimenting with remote hydrophone systems, and Bill offered to make them. Alert Bay Coast Guard Radio operator, John Gallant, found a collection of old Korean War issue "sonobouy" systems in the station's basement that included transducers suitable for listening to orcas. Through Bill's wizardry remote systems were built that enabled us to listen to spaces we couldn't see. It was a breakthrough in our work, enabling us to follow the whales day and night throughout much of their "core" area. Bill eventually came to make his own transducers and by doing so kept OrcaLab in the business of monitoring whales for decades. Not only did his systems work but Bill kept an ear on the quality of the signals from his house. If a problem presented, Bill was able to determine the source and the cause. It was such an important partnership for OrcaLab. He had become a close friend over the years. OrcaLab's hydrophone network would not have existed without Bill's contribution and this cannot be understated. Rather interestingly, just after Bill died, some of the hydrophones exhibited signs of permanently failing, a touching tribute of sorts, and a sign that it was time to start a new phase.



Dr Sidney Holt died in December. Like Bill he was 93 years old. He was a renowned scientist who began his career determining how to assess fish stocks for sustainable harvests. He was given the opportunity to apply his expertise to whales when appointed by the International Whaling Commission (IWC) in 1961 to provide advice on annual catch limits for each whale species. Up until then it was pretty much a free-for-all; the whalers had their way, with the whales suffering as a result. His work in this regard eventually culminated in the moratorium on whaling adopted by the IWC

in 1982 that came into effect in 1986. Sidney stayed involved with whales for the rest of his life, his passion for their plight never diminished. He worked with various organizations over the years; the Food and Agricultural Organization (FAO), Nature Conservancy, Scotland, UNESCO, Greenpeace, Sea Shepherd and IFAW. He helped draft the "Convention on the Law of the Sea (UNCLOS, 1982). Paul first met Sidney in 1975 after they had previously corresponded. Sympathetic to anti whaling efforts, Sidney was a good source of information. Paul was encouraged to go to Norway and obtain the whaling statistics which enabled the Greenpeace vessel *Phyllis Cormack* to find the Russian whalers off the California coast. In recent years, Paul and Helena enjoyed visiting Sidney in Paciano, Italy where he lived, and meeting up with him at IWC Plenary meetings. Paul, among many others, considered Sidney a great friend of the whales, believing that he had saved more whales than anyone. Quite a legacy!



OrcaLab's experience with assistants, welcomed from around the world, just seems to get better. This is not a disservice to past assistants but it does reflect the degree to which the volunteer programme has really gelled in recent years. At its core are the volunteers who return from past years, some of whom have come back to help for many years.

The 2019 group worked really well together. They were self reliant and very willing to deal with demanding schedules and the inconveniences of the living conditions.

This year's volunteers were: Kristin Anton, Alicia Doohan, Suzie Hall, Megan Hockin-Bennett, Sonia Klein, Momoko Kobayashi, Bianca Koenig, Li Chenyue, Quin McIntire, Shari Manning, Sophie Mejjes, Tomoko Mitsuya, Tjasa (TJ) Obrulek, Marion Poupard, Gerhardt Robinson, Dylan Smyth, Emily Vierling,

This diverse group came from: the USA, United Kingdom, Japan, Germany, China, Slovenia, France, Canada.



They were not all present at the same time but there was enough overlap to lend continuity of effort. The Lab operation is quite complicated, with shifts centred around monitoring of the hydrophones, recording when needed, monitoring and operating the remote video cameras, visual scans, observing and photographing whales, managing photos and recordings, and this year, helping with the hydrophone array project. Volunteers are expected, as long term visitors living on the island to pitch in and help with any chores needing doing and helping with guests and other visitors. Volunteer Karien Bergmans spent a lot of time with Paul reviewing and developing materials for the new website under construction.

We are very grateful for all their help and cheerful contribution to OrcaLab.



In August, OrcaLab welcomed Michael Scholl and family. Michael is Director of the Swiss based environmental organisation, “Save Our Seas” (SOS), and has worked closely with Janie Wray and the North Coast Cetacean Society for years. With an increasing involvement with OrcaLab, Janie thought that Michael would enjoy coming to the Lab and seeing how it operates. Michael brought his young son, Elliot as well as his father Peter and mother, Theres. They stayed for several days. It was a good connection and Michael made himself very popular by distributing SOS swag to all the assistants.



Rob Lott and Tracey Spencer arrived from WDC, UK. OrcaLab has a long association with WDC and greatly appreciates the continued support. Rob first started off as an OrcaLab assistant in 1990 and has been making return trips ever since; without him summer wouldn't be the same. This was the first time for Tracey, who normally manages WDC's monthly orca adoption newsletter and was thrilled to see, in person, some of the whales she has been reading about for years, especially Bend (A72).

Clay Fischer, who has already been mentioned for his work on the Strider location also took time to reinvestigate OrcaLab's power systems, work he did at the Lab two years ago. Film maker Michael Harris, prior to his help on the Sonny Reid interview, came with his daughter Vivi for a brief visit and to reconnect for discussions about the possibility and logistics of reviving the “Kiss the Sky” concert which had promoted the idea of Corky's freedom. Michael had been the concert's producer. Tom Dakin, Jeff Bosma, Martin Wale all turned up for a discussion about the Coast-wide Hydrophone Network project. Martin is the Director for the Saturna Island Marine Research and Education Society (SIMRES). This was for him and Jeff their first time visiting the Lab. Shorter visits included: the Sea Shepherd crew stopping for a quick tour; a dinner with the BC Parks Robson Bight Warden

Programme crew; dinner with Sheila Thornton's, Species At Risk/ Fisheries and Oceans Canada crew which included Jared Towers and Volker Deeke; and Loriane Mendez, Sebastien Espanol who are friends of Frederick Briand, who has been the long time representative for Monaco at the IWC and has known Paul for years.

Family came too. Paul's son Yasha & his wife Brandy along with their children, Amelia (14), Nate (9) and Josie (7) have been making annual trips to the island for the past several years. This year they decided to come earlier than usual - they usually come for Amelia's birthday on July 19. They saw many whales, had fires on the beach, roasted marshmallows and hot dogs. It had been a while since daughter Anna had made it back for more than a day's visit but she and her husband Tony and son Jamie (3) made time for a longer visit as part of their Vancouver Island vacation. Jamie loved the crabs on the beach and the very tall trees in the forest. In September, granddaughter Hannah and her children, Indica (7) and Zephyr (1) visited along with Hannah's parents, Richard and Christy Auer. Richard and Christie, both professional cooks, treated us to two lovely gourmet dinners, prepared by their own hands. Indica introduced us to the appropriate grace before dinner, "YUMmmm!" which has become a staple pause before eating ever since.



Hanson Island was again fortunate in getting much needed practical help. Mike Durban came in early April and laid done new flooring in the kitchen area. What a difference! He and Lucas Smith, a friend of Megan's, then worked together on the sink area. After years of use, the old wood floor had to be ripped out and new sub flooring put down, The under sink area needed a similar treatment, and when done new slate tiles were laid. Megan did her part by repainting parts of the kitchen. It looked beautiful! The job was not quite finished and Lucas returned later in the year to complete the tiling job and install the new kitchen door.

Mark McCallum returned several times. In April he and Mathieu tackled the Lab roof facing the ocean. Previously, Mark had fixed the other side of the Lab's roof. This work was much needed as the Lab houses most of the important equipment used for our work. Later Mark worked on the old cabin across the bay from the main house. A new roof was put in place, the wobbly deck replaced and work on the interior begun. Mark also started work to finish the interior ceiling of the main house. We had found lovely kiln dried cedar for the job and Mark after constructing an inside scaffold began by putting in insulation and then the boards. It will look amazing when finished. The roof of the main house had never been insulated before so this will, as did the thermal paned windows and skylights that Mark installed earlier, bring much welcomed security and warmth. Despite having two wood heaters, the main house was always a challenge to heat during the winter. Extra layers, hats and even at times gloves were necessary to combat the chill. Mark's family, partner Lexie and son Arthur (3) were able to join him for a brief visit. Arthur is just a week older than grandson Jamie. Mark and Lexie normally work on a farm in the Duncan area, and so when they visit they always bring a huge basket of fresh veggies and real farm eggs!

Andrew Jennings (AJ) who has been involved with the whales in the Johnstone Strait area for years happens to be also a professional electrician. AJ took on the job of assessing and fixing the electrical wiring for the main house with energy efficiency as a priority. He was working at the same time as

Mark. Several assistants, Megan, Suzie, Jérémie, Claire, Quin were still at the Lab and on hand to help Mark and AJ while keeping track of the Lab.

A magnificent cedar tree beside the bath-house began to show signs of distress. This tree whose trunk divided into three, had for years leaned forward overlooking the beach. Its long lower branches swept down onto the beach like huge elephant tusks. Then one morning, after a strong windstorm, some of the upper branches fell. On investigation an obvious crack in the main trunk was discovered. Everyone heeded the grave warnings not to walk near or in front of the tree. Finally, tree expert, Paul Gagnon, came to address the problem. After much thought and planning, he climbed the tree with his huge chain saw and sawed through the scary trunk. It came down with a thump that shook the ground. The old tree, which has stood for centuries, now looked somewhat shorn but still stood and was safe.

There was still a lot of clean-up and salvaging of the downed tree parts left to do. Frank Smith from Alert Bay was willing to come and help. A full day's work, with the help of the volunteers and two kayakers who happened by, and the debris was cleared away from the beach and tide.



Our caretakers in 2019. Lisa Larsson, Mathieu Prévile, Suzie Hall and Quin McIntire took turns looking after OrcaLab in the off season months during the winter, spring and late fall. Suzie, from the UK, has been an OrcaLab summer volunteer in the past and in 2019. She is a diver and has helped with the installation of hydrophones and cameras. Quin first passed by in his canoe, met and talked with Lisa who was caretaking at the time, and returned to help out later in 2019. Suzie and Quin combined efforts to take on the caretaking duties starting in December. Before they were left to manage on their own, Megan, Jérémie, Claire stayed on. Although unusual this worked out well in many regards as we were also doing renovations and trying to keep up with the whales, especially the humpbacks.

On October 18, a couple of the humpbacks were feeding in Parson Bay opposite the Lab, with Jared Towers observing close by. A flock of excited sea birds whirled and shrieked as they took advantage of the whales' feeding efforts, flying right into the huge mouths to grab bites. Unfortunately, quite a few were caught in one whale's mouth. Several died but Jared managed to rescue three and took them to the Lab. Two were left while the third was taken to Alert Bay. Suzie, with help from the others, rigged up cardboard boxes next to the fire. She comforted the birds through the night.



The next day the sufficiently recovered birds were let go. One successfully flew away but the littlest one was attacked by an eagle, its fate unknown. Suzie and Quin were to have other adventures during their stay but these will be saved for next year's report!

We are very grateful to all the OrcaLab caretakers, for their help, making sure the facility was safe and keeping up with the whales and other marine life when needed.



On a special note, for a brief while Hanson Island was visited by a lone Coastal wolf. "Loup" as he became known seemed relaxed and accepting of his surroundings. He definitely kept an eye on the happenings around the Lab from the outhouse to the cabin on the other side of the bay. He never bothered anyone, kept a respectful distance, but also never declared his intentions. It was good to share space with Loup as a reminder that the island is still part of a world that is wonderfully wild.

We are deeply grateful for everyone's continued support in 2019. We anticipate that 2020 will be another productive year despite the concerns that COVID-19 might bring. We wish that everyone stays safe and well throughout these challenging times. We look forward to sharing many more OrcaLab moments with you.

With our sincere best wishes,

Paul Spong Helena Symonds

Paul Spong and Helena Symonds
Directors of Pacific Orca Society/Orcalab