Pacific Orca Society

Annual Report 2020

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

Report topics:

- Marking Fifty Years
- Coast-Wide Hydrophone Network Update
- Research/Whales
- IWC update
- Corky Update
- Volunteers, Visitors, Caretakers,Carpenters & Electricians

Marking 50 years

2020 marked the 50th anniversary of when Paul, his family and friends first set foot on Hanson Island and began to observe, monitor and study orcas. These beginning efforts resulted in the creation of OrcaLab.

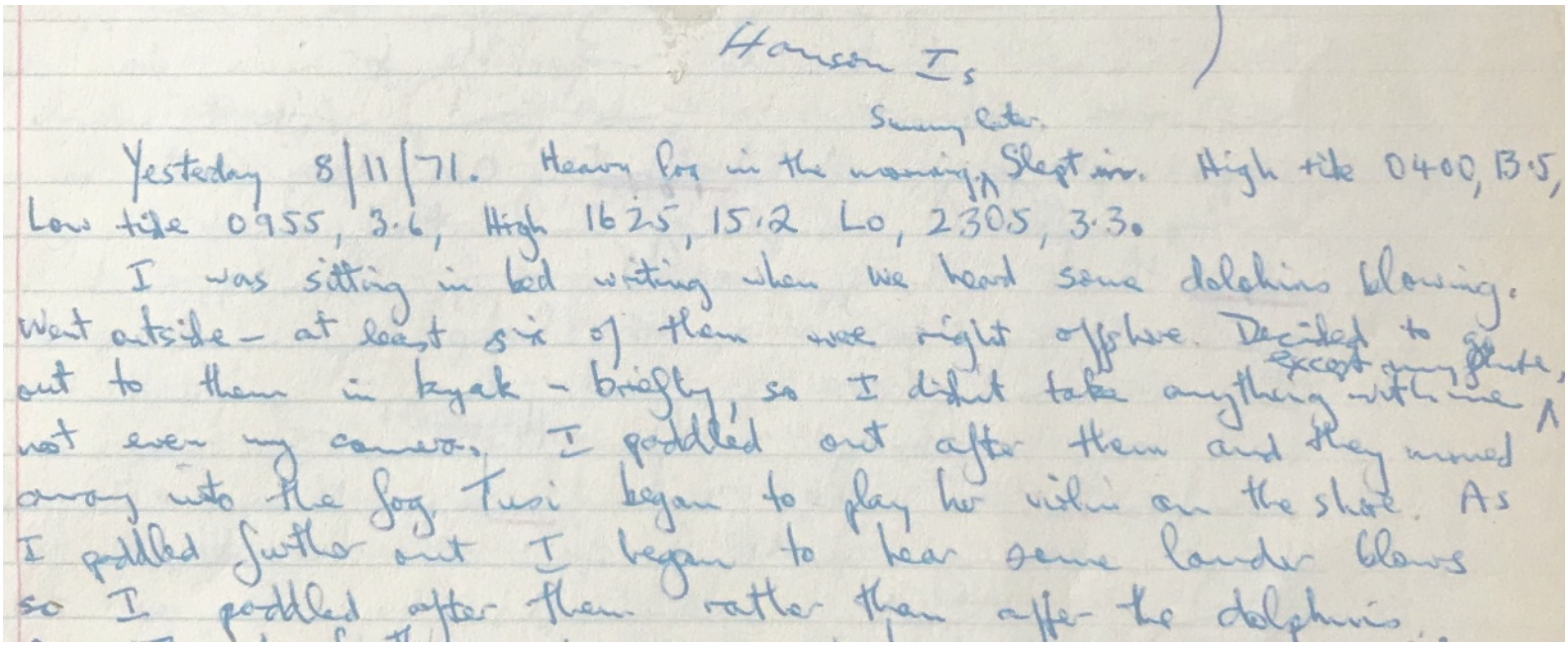
OrcaLab has grown from tents on shore, to a hand built structure & tree house to the permanent buildings of present; main house, bath-house, guest house, generator, lumber and wood sheds, small cabin, camp kitchen and endearingly (to some) 2 outhouses - all still nestled between the two small bays that overlook Blackney Pass.

Over the years we have progressed from having to carry water from the nearby stream to a cold water gravity feed which provides running water; we have moved from burning kerosene lamps to actual electric light; heat is still provided by wood fed into many generations of heaters and cookers; we have transformed our energy storage from a few batteries recharged by a generator to a bank of sixteen big batteries recharged by solar and wind as well; we have grown in number from a few to many and our influence has reached across the globe.

Our philosophy of research has evolved too. In early days the idea was fairly standard, observe and record and follow the whales when feasible, at first in a kayak, later in a small motor boat. In the 1980s boats, except as a means of transport, were largely abandoned as a research tool in favour of gathering information from a growing network of remote hydrophones.

To get a sense, however, of those early days, we fortunately have Paul's notebooks.

In his own hand.



Hanson Is

Sunny Later.

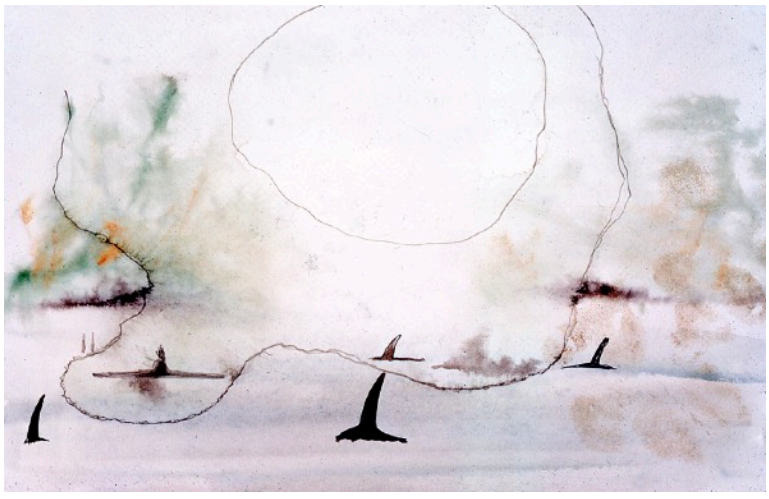
Yesterday 8/11/71. Heavy fog in the morning. Slept in. High tide 0400, 13.5, Low tide 0955, 3.6, High 1625, 15.2 Lo, 2305, 3.3.

I was sitting in bed writing when we heard some dolphins blowing. Went outside – at least six of them were right offshore. Decided to go out to them in kayak – briefly, so I didn't take anything with me except my flute, not even my camera. I paddled out after them and they moved away into the fog. Susi began to play her violin on the shore. As I paddled further out I began to hear some louder blows so I paddled after them rather than after the dolphins.

As I got further out I could hear quite a lot of blows. Obviously a lot of killer whale were around. I paddled after the sound of the nearest blows for a few minutes, then I stopped paddling and started to play my flute. I had my eyes closed. After some time I opened my eyes and saw about six small killer whales sitting on the surface about 100' in front of me, just about as far as I could see in the fog. I went on playing, closing my eyes again. When I next opened them it was to see three whales

surfacing together about 50' in front of me, moving away from me. I immediately realised that these were the three whales whom I had been thinking of while I was painting yesterday, a huge male, clearly identifiable from his wavy dorsal fin, together with his constant companions, his only lady with smaller mate and their child — a young whale perhaps 3-4 years old. I stopped playing, picked up my paddle and started after them. They surfaced three times at about 20" intervals, swimming slowly about 50' in front of me. Then they disappeared. I stopped paddling and again started playing my flute. This time, as I played I became aware of whales appearing in groups all around me, 50' - 100' out, clearly visible in the gaps of the fog.

I could see that there were [illegible] number of them (doubtless the same flock I had encountered yesterday - I estimated fifty then. After being with them twice I'm beginning to identify a few individuals but it's impossible for me to do an accurate count at this point) After a while I stopped playing, started chanting OM. They started to move away after a couple of minutes and I paddled after them. They moved very slowly and it was quite easy for me to keep up with them.



It seemed clear that they expected me to tag along with them. I was a little confused as to which of them I should tag along with, so I headed for the group that seemed to have the most babies. They let me tag along with them for a bit, but when I got maybe 20' from them they disappeared. So I headed for another group. They let me come right in amongst them for a bit – until I impetuously leaned out of the kyak to try to touch one of them – almost overbalanced the kyak, almost ran the kyak into the whale – he was a couple of inches away and there was another one as close on the other side –

I was in the middle of a line of about 3 or 4 juvenile + older males — they split at that point. I felt a bit silly and didn't quite know what to do for a while. So I played my flute again and they all came back around me again, this time much closer in — several male lions 10'-20' away. After a while I stopped and followed them again. They were still going slowly but the direction didn't seem constant. I began to become aware that some of them were going to be going off in one direction and others in another and maybe others in another. This was quite unclear because of the fog. I had no idea where I was by this point — except that I thought I was in Tsavo Game Park. I thought it was probably time to split for home so I started in what seemed to be the right direction. It seemed weird not to be walking. So I played my flute a bit more "Goodbye"

In groups (3) of 1/10 of 20 they made passes close by me (they had been out of sight in the fog). I didn't know whether to follow them or try to figure out how to get home. I realized I didn't have a clue where I was, decided to follow the whales until they disappeared or the fog cleared. Did this. Both happened. When the fog cleared (I was on an island waiting) I headed in the wrong direction for 1 hour then in the right direction for 3 more and eventually got home about an hour before high tide (fortunately the wind and tide were "with me"). When I get a chart I'll check out this trip and draw a map below.

Paul never drew his map. Later, as he prepared for the first Christmas Whale show in 1973 he described his encounter to friend and renowned artist Stewart Marshall, hoping Stewart would help him illustrate the story. Stewart was so deeply engaged that after talking with Paul he began immediately to draw and paint Paul's story. When he finished the paintings (seen here) and looked up he was startled to find that it was dark outside. So immersed, the day had simply disappeared. Like Paul's ten hour journey amongst the whales Stewart had likewise allowed himself to be totally transported.

1971 was early days in our understanding of the complexities of orcas and their society. They had been viewed as fierce predators - and were feared. Once again Paul, as he had with Skana, the captive Southern Resident orca at the Vancouver Aquarium, had shown that there was much to learn and understand. Like Skana, these free orcas imparted to Paul a strong sense of confidence, calm and even acceptance.

Many people were inspired by Paul's experiences, especially after he included this story in the 1974 publication "Mind in the Waters" , a collection of essays assembled by Joan McIntyre. Many have been the film crews who have wished to recreate that singular event, dressing Paul up, putting him and his flute into a kayak and hoping whales would participate. Paul, meanwhile continued to evolve his knowledge of whales and their needs.

The following 50 years likewise brought many changes to OrcaLab.

Nicola (A2) prior to 1989

living



















VANCOUVER



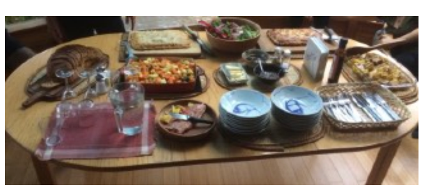










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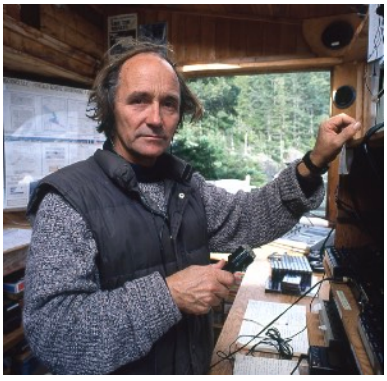
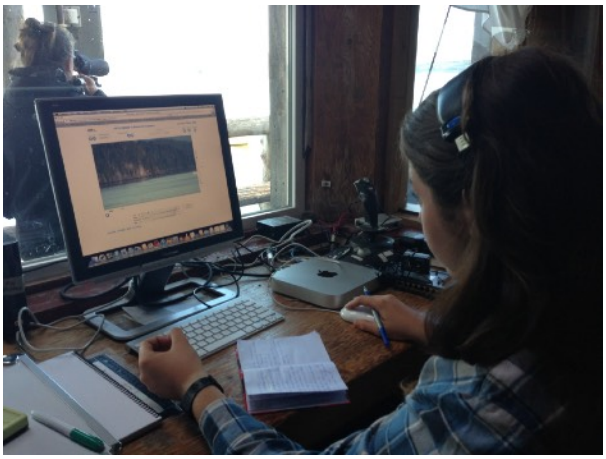


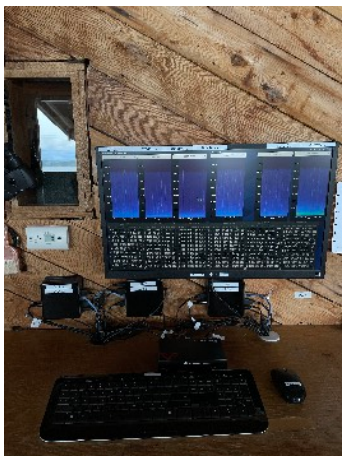


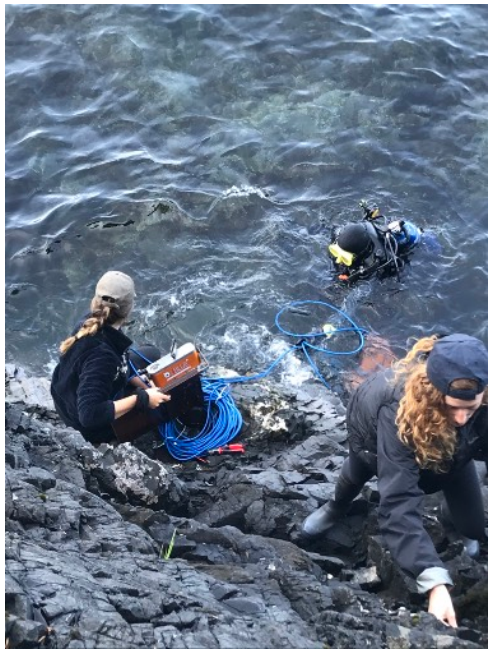


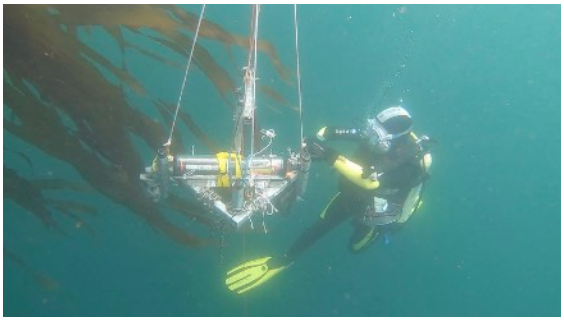



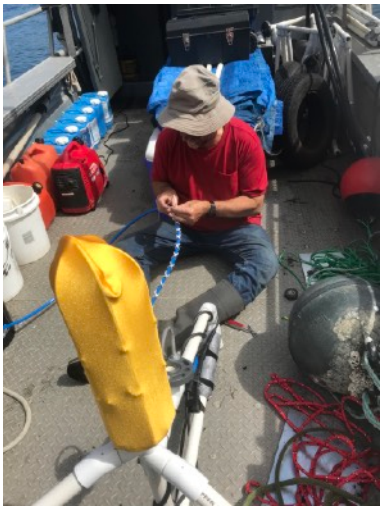










Linda

In early June we learned that Linda, Paul's former wife and mother of Yasha died unexpectedly. She was 72.

In 1970, Paul and his wife Linda travelled to Hanson Island for the first time with their two year old son,Yasha. It was the beginning. They tented at first, then constructed a tree house which served as the first Lab and then gradually put together a hand built house constructed from plastic, salvaged windows, doors and logs from the beach. The interior was filled with the cozy cushions that Linda made, a rug bought in the Amsterdam flea market when they went on their European tour, and a large wooden table made by Paul. Everywhere, plastic and windows ensured light if not security from rain. The first wood stove was a "Perfect", manufactured in Lunenberg, and sold to them by their neighbour Will Maloff. Friend, Ron Keller, came along and helped establish a garden. Each summer they returned to observe the whales and welcome friends.

Both deeply committed to whales, great and small, together they drew Greenpeace into the "Save the Whales" movement.

Linda was an artist, a potter and a musician. She was beautiful, loving, warm and so very kind. Her legacy lives on as the founding heart of Hanson Island, in her son Yasha, his children Hannah, Amelia, Nate and Josie and great grand children Indica and Zephyr.

A while after her death, Yasha and his son Nate travelled from their home in California to Vancouver where they quarantined for two weeks then joined, Bill Gannon, Tusi's husband of forty years, a small gathering, including Paul and Helena, and those connected by zoom, on Pender Island for the burial. It was a beautiful sunny day back at Bill and Tusi's house, where her potter's wheel stood still in front of the large window overlooking the wide cleared field stretching gently towards the sparkly sea and Orcas Island beyond. Our love goes out to Bill, Yasha and family, our memories are with us.

NETWORK/SYSTEMS

In 2020, like pretty much everywhere else in the world, our work at OrcaLab was deeply affected by the Covid-19 pandemic. Many of our regular summer volunteers were unable to come to Canada, so we relied on a few “old” assistants who were already in Canada, along with a few new ones who were residing in British Columbia, and ourselves. Megan Hockin-Bennett, Suzie Hall and Quin McIntire were our main stays throughout the winter, spring and summer. Some of our overseas assistants stayed involved by regularly listening to the enhanced audio stream on www.orca-live.net and helping out, especially, during late night Lab shifts when it was daytime for them. Despite the deficiencies, absences and challenges, we were in many ways able to carry on with our work as usual, running our Lab 24/7 through the summer season, and making major improvements to our systems. So altogether, 2020 has been a very successful year for our work at OrcaLab.

Before COVID ramped up we had a productive visit from Explore in February. For years, Explore has supported the work of OrcaLab extensively, creating and funding the networks which allow the remote cameras to access the Internet. A lot of time had passed since Tim Sears did the original installations for Explore. Joe Pifer, now working for Explore as their technical advisor, came with Candice Rusch, Director of Media for Explore, and Dr Peter Sharpe. Being February, we set off from Alert Bay as soon as the weather would allow. Even then it was a dramatic departure as the sea had not really settled down. We arrived safely and over the course of the next few days the weather allowed us to get to the sites where Joe did an assessment of the conditions and requirements for each. Candice laid out Explore’s social media programme and introduced us to VMIX

Quin McIntire arrived on Hanson Island with a friend in a canoe in 2019. He connected with Lisa Larsson and after a later short stay at Double Bay found his way back to OrcaLab where he duly fell in love with Suzie Hall and stayed. Quin developed a strong interest in the OrcaLab systems and took it upon himself to learn as much as he could. In 2020, Quin was instrumental in setting up the VMIX system with its streaming software as an interface for several of the external streams including many remote cameras and audio. Quin then set up a new audio mixer to accommodate the increased number of hydrophones. A lot of work went into buying and installing new cables. The result was a very new look for the Lab!

Quin spent a lot of 2020 climbing trees, adjusting wireless radios, helping with the installation of cameras and continuing to keep an eye on the Lab systems, being called upon to troubleshoot whenever a problem (and there continued to be quite a few) popped up. Often Joe and Quin would work together, Joe on the phone, Quin on site. The partnership proved productive. Their work to improve the wireless network is ongoing.

Last year we described at length our involvement in the creation of the British Columbia Coast-wide Hydrophone Network (BCCHN). This collaboration involves three likeminded NGO groups, Saturna Island Marine Research and Education Society (SIMRES), the Pacific Orca Society/OrcaLab (POS/OL), the North Coast Cetacean Society (NCCS), to streamline the collection of acoustic data over specific areas of the British Columbia coast, from Saturna Island in the south to Fin Island in the north.

In 2020, extensive work was accomplished. The work to install new calibrated “icListen” hydrophones with their enhanced ability to consistently monitor and collect data on ocean conditions, including the impacts of boat noise, began. In July, Sea to Shore Systems (StSS) supervised the work installing the new hydrophones and reconfiguring the Lab to accommodate the new signals. We now have five new hydrophones installed at both existing and new sites.

These installations were done very efficiently but the work was not easy. StSS had ensured that all equipment (hydrophones, cables, solar panels and controllers, radios etc), except the special armour, arrived on time and were tested. Hiring a rental truck to bring the equipment to Port McNeill was required, as well as hiring Larry Roy and his landing craft to pick it and the crew up. Joining StSS’s Tom Dakin and Jeff Bosma were Fisheries & Ocean’s (DFO) Dylan Smyth and Charlie Cragg.

Before even getting to Hanson Island the majority of the equipment was deposited on shore at each site. This saved a lot of time. The rest of the equipment and the group were then let off at the Lab. The immediate task for those at the Lab was to ensure that strict COVID rules were enacted, that everyone was well fed and given a place to sleep.

For three weeks everyone worked flat out. Megan and Suzie, were the divers for the hydrophone deployments, Larry Roy continued to ferry the crew around, Janie Wray (NCCS) and lead on the BCCHN project was on hand to drive OrcaLab’s *Sonic* to assist the dives and Quin lent his acquired knowledge of the OrcaLab systems and helped with the *Sonic.*

The BCCHN partnered with DFO to install three of the new icListen hydrophones, one each at Kaizumi Rubbing Beach (KRB), Strider Rubbing Beach (SRB) and Main Rubbing Beach (MRB) with the aim of obtaining consistent year round data from these sites where the orcas have been known to do their unique rubbing behaviour in Johnstone Strait. OrcaLab has monitored both acoustically and visually the Main Rubbing Beach for decades so quite a lot of the infrastructure needed to install the new hydrophone was already in place. Likewise, at Strider, OrcaLab had begun to develop this site two years previously with the aim of installing a surface camera in 2020. As a result the site was already equipped with the power requirements needed for this new installation. DFO provided the funds to buy the costly icListens.

Kaizumi Rubbing Beach lies outside of the Robson Bight (Michael Bigg) Ecological Reserve (RBMBER) which encompasses Strider and Main. It is located west of the western boundary of the Reserve, approximately half the distance between Kaikash Creek Beach and Izumi Rock, hence its name. It is a small beach but one which the orcas reliably frequent.

An icListen hydrophone was installed on July 13 2020. The range of the hydrophone extends east to the Ecological Reserve, with a bias mid strait toward the Cracroft Island shore at Swaine Point and Boat Bay. To the west, the hydrophone ranges beyond Kaikash Creek and offshore to mid-strait.

A possible and compelling outcome of monitoring Kaizumi is that the data will show the importance of this beach and convince government to extend the Ecological Reserve to include Kaizumi, giving needed protection to the whales during this vulnerable behaviour. Currently, there are no restrictions, campers are frequently on shore and boats hover offshore. Kaizumi proved to be an excellent hydrophone location. OrcaLab obtained several very good recordings from this site and on one occasion recorded several mysterious loud "bangs" in the middle of the night. This will be discussed later.

The installations at the three beaches went according to plan. The Flower Island site was tackled early. The old analogue system had failed previously and we were no long monitoring Blackfish Sound, essential to our ability to track orcas as they enter and leave the area. The old system had relied on line of sight to the Lab via a VHF radio. This was not going to work for the new system so a microwave radio link to the Sea Lion rock south of the Lab was established. The signal was then relayed to the Parson Island site and then back to the Lab. This worked! Other issues were addressed and soon we could hear Flower Island once again.

Parson Island was next deployed, requiring a complicated dive. The cliff where the equipment is mounted is high and steep, the ocean below deep with strong currents and back eddies. With two boats, and our two divers, the hydrophone was settled into its new place and the necessary configurations were accomplished, and Parson Island was added to the list of working hydrophones. It began to feel as if the hydrophone network was coming alive once more.

As time was now running out for Sea to Shore, (DFO's, Dylan and Charlie had already departed for the West Coast for another assignment) it was decided to leave the old Cracroft hydrophone, the last remnant of the Bill ter Brugge system, in place. This hydrophone has great sentimental value and had worked for over thirty years, and as it turned out it was called on later in the year.

The quality of the new icListen hydrophones is very, very good. The only drawback, and it was a huge problem at first, was that the new system configured in the Lab was not designed to deliver audio into the Lab's monitoring and recording systems. Data were primarily routed to a NAS drive. This meant we would be handicapped and incapable of tracking the whales in the same manner we had developed over the last 40 years. To go around this problem, Tom Dakin employed the same strategy used with the older Critical Point icListen hydrophone by interfacing the signal through the Ocean Sonics Lucy software programme and then via a dedicated audio cable from the NUC computer into the Mixer. This worked, although no one was a huge fan of Lucy as we had experienced many ups and downs with Critical Point. However, with a good measure of perseverance and patience Tom was able to put Flower Island, Parson Island and Kaizumi into the Mixer. CP worked with a direct connection as before. The network now had shape and substance. Unfortunately, we were unable to accommodate the Main and Strider rubbing beach hydrophones. Their files, as with the other stations, were sent only to the NAS drive. Our solution to go around this shortcoming, because we really wanted to hear the whales rub, was to use two analogue hydrophone systems obtained through Cetacean Research Technology. We had used one at Main Rubbing Beach previously, deploying and removing it each season. It was successfully deployed again in 2020 and another placed at Strider during the summer. So now the network was functional; we could listen, monitor and record whale activity throughout a

50+ square kilometre area of Critical Habitat. As well, 24/7 data from the five sites were continuously streamed and stored on the NAS drive.

We were not issue free but by the time Sea to Shore left we again had a functional Lab, could get on to the rest of the summer and focus on the whales!

On a very sad note, Charlie Cragg died when the tug he was working on sank in February 2021. We will be ever thankful for his help, and our heartfelt thoughts go out to his family.

RESEARCH/WHALES

The Northern Residents arrived to start their summer season on July 1. Two days prior, a group of Southern Residents made a quick transit through the area. They came from the northwest and had presumably travelled north along the west coast of Vancouver Island from their usual southern British Columbia/Washington haunts. This was not the first time Southern Residents have travelled through our area. Beginning in 1996, Southern Residents have made occasional trips. Prior to 1996, their presence had not been known. Usually, members of K and L pods are involved in these journeys. But ten years earlier, on January 23 2010, J pod (the third component of the Southern Residents) came from the east after travelling via Georgia Strait. This was the first and currently last such occurrence for this group. They arrived and returned in the dark. The identification was acoustic, confirmed by Dr John Ford.

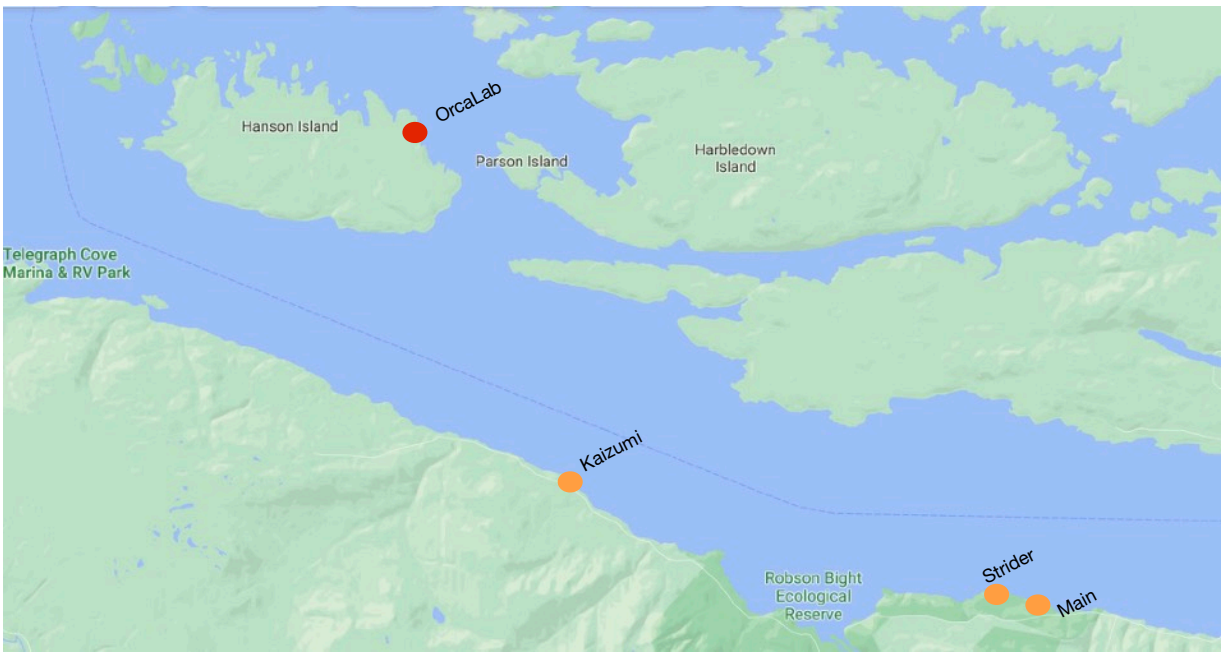
Northern Residents, likewise, have been known to venture into traditional Southern Resident ranges and the two communities do have some areas of use that overlap. Regardless, the two communities have never been known to mix socially. The closest we have witnessed was when both communities were present in Blackney Pass at the same time, on October 21 2015. Blackney Pass is not a wide body of water and the two groups solved their distance challenge by taking opposite sides of the pass. They travelled parallel to each other and were even vocal at the same time but there was no physical evidence of any intent to socially mix. When Northern Resident Springer (A73) was discovered in Puget Sound, Southern Residents passed by her at least once but showed no outward interest. Then when Southern Resident Luna was likewise isolated in Nootka Sound, a Northern Resident group simply carried on their business without interacting, although Luna did seem excited at the time. Why the two communities are so separate is not understood. Outwardly, they have the same appearance, social structure and food preferences. Perhaps the most likely explanation is food. Both communities target Chinook or Spring salmon during the summer. By staying in their preferred ranges they lessen the need to compete with each other. This probably created enough isolation from each other that the communities became self reliant. Every aspect of living; mating, feeding, socialising, births and deaths stay within the community. For thousands of years, these autonomous communities

had an assured nutritious rich food source that allowed them time and space enough to develop distinct societies and pass on traditions from generation to generation. However, the last hundred years has wrought changes and challenges. Commercial fishers competed directly with the whales and saw the orcas as a threat to their livelihood. As a result many orcas suffered debilitating wounds and even death from gunshots. The Canadian government went as far as setting up a machine gun to kill orcas in Seymour Narrows, though thankfully it was never fired. Additionally, logging destroyed salmon spawning streams, dams impeded salmon from fulfilling their life cycle, and lately, toxins, plastics and shipping noise have continued to degrade the ocean environment. Disease and lice from salmon farms have created major recent threats. And of course, climate warming looms in the background.

Both communities in the '60s and '70s suffered losses to the captive whale industry. Due to location the Southern Residents were hit the hardest and have struggled ever since to recover. Their overall numbers remain low. Whereas the Northern Residents have seen their numbers increase and even triple. In recent decades, however, their numbers have fluctuated in response to the availability of Chinook and Chum (their other favoured salmon species available in the Fall) - another clue to the importance of a good food source. In the last two years their numbers have levelled off and plateaued. Chinook and Chum returns have remained uncertain and this may explain why the two communities have started to investigate each others ranges.

In 2020, among the first arrivals, we were delighted to see Springer and her 2 babies, Spirit and Storm, who we hadn't seen here at all in 2019. They stayed in our area for 5 days, joining several other families from the A5, A1 and A4 pods. The summer proceeded from there, much the same way as usual, with many orca groups coming for short or long visits. The longest visit was by the A30s, who arrived on July 5th and finally left on August 31st. We even had a brief visit from some of the "R clan" families, the first in 2 years.

Rubbing Beaches



A lot of effort in 2020 went into monitoring and observing the three rubbing beaches in Johnstone Strait. For years we have had both surface and underwater cameras at the Main Rubbing Beach, and for decades, a hydrophone. Our coverage typically began as early in the season as possible. The surface camera became a fixed year-round installation but the hydrophone and the underwater camera were removed at the end of each season. Winter storms can be severe and pose a threat to these installations. However, deployment and removal were done so that the majority of the orca summer/fall season was covered. In 2020, we expanded our efforts to include monitoring Strider Rubbing Beach (to the west of the Main Beach and within the Ecological Reserve) and Kaizumi Rubbing Beach. Kazumi is not part of the Reserve. At Strider we installed a surface camera and then later an underwater camera provided by *View Into the Blue*. We could not access the icListen hydrophone and so relied heavily on the Strider remote camera for information. We operated the camera from the Lab. We were astounded by what we witnessed when the whales came in for a rub. The sessions were often very long and the camera provided intimate and close up views of the activity.

We were aware for some time that the whales were showing a distinct preference for Strider Beach over Main. We clearly documented this decline in interest for the Main Beach for several years. The Main Beach was beginning to serve primarily as a terminus when orcas coming from the west turned around at this location. If coming from the east many of their passes over the beaches were merely cursory as they continued on to Strider or a more distant destination. We were engaged in operating the Strider camera for hours at a time. A good portion of the day during peak orca activity was required. The excitement of watching and following the whale activity however never waned.

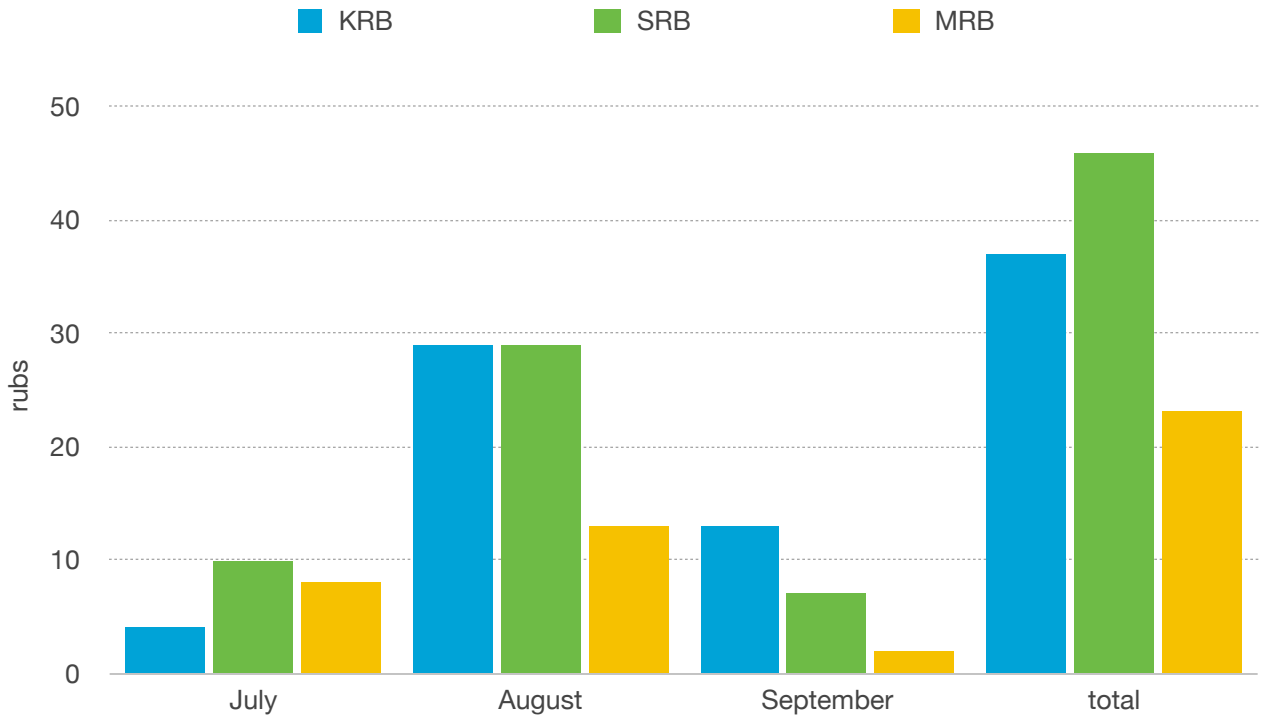
There was no surface camera at Kaizumi, however, we were able to include the new icListen hydrophone in our audio monitoring system. This meant we could listen! We had never before understood how the whales were using this beach. To our surprise, the orcas chose to go into the beach from either direction compared to their bias of approaching the other two beaches mostly from the west and there were indications that it was a destination on arriving in Johnstone Strait. We feel

this is significant and underscores the importance of this beach to the whales. As with the other two beaches the rubs varied from quick passes to more sustained and complicated efforts.
Monitoring of Main Rubbing Beach began on July 5 and continued through September. Strider and Kaizumi Rubbing Beaches were monitored from July 13 through September. For the purposes of this "snapshot" rubs after September were not included in the following table. We logged 37 rubs at Kaizumi, 46 at Strider, and 23 at Main Rubbing Beach. Use of the Main Beach was comparable to 2019. In 2019, 29 rubs were detected and 23 in 2020.

Jennifer Libotte compiled these data for OrcaLab during her stay. She found an interesting preliminary finding of a preference for use in the late afternoon, early evening.

Number of times NR rubbed July - September 2020

Month	days monitored	No. of times NR rubbed at KRB July 13 - Sept 30	No. of times NR rubbed at SRB July 13 - Sept 30	No. of times NR rubbed at MRB July 5 - Sept 30
July	19	4	10	8
August	31	29	29	13
Sept	30	4	7	2
Total	80	37	46	23



We are looking forward to 2021 and the improvements we can make comparing use of all three beaches. 2020 had a sharp learning curve as we were at times overwhelmed by all the activity and the newness of operating the remote Strider camera during long sessions. We noted that Main Rubbing Beach has continued to show a decline in use and we understand more fully now how extensively the whales use Strider Rubbing Beach. Hopefully, our approach to the collection of data will be improved now that we have gained experience with using the remote camera at Strider and by the fact that we have hydrophones already in place in advance of the start of the season.

In 2020 we continued to do regular visual scans of Blackney Pass to asses the presence of boats and marine life. Every volunteer was involved. 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.

In **2019** 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 3,301sightings of marine mammals and 2,933 sightings of vessel traffic.
Using these sightings, we mapped the location and characterized the group size and behaviour of detections of humpback whale (n=1,113), orcas(n=557), Dall's porpoise (n=485), harbour seal (n=831), Pacific white-sided dolphin (n=222), and Stellar's sea lion (n=2,515).

In **2020** observations were made from Orcalab for 1,615 hours over 111 days between July 1 and October 24. In this time, volunteers conducted 796 systematic 15-minute scans of the study area (209 hours). During these scans, we logged 1,845 sightings of marine mammals and 1,180 sightings of vessel traffic.
Using these sightings, we mapped the location and characterized the group size and behavior of detections of: humpback whale (n=628), orca (n=277), Dall's porpoise (n=181), harbour seal (n=396), Pacific white-sided dolphin (n=42), and Stellar's sea lion (n=5,004).

Table 1. Monthly sighting rates (sightings per hour of scan effort) in 2019.

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	--

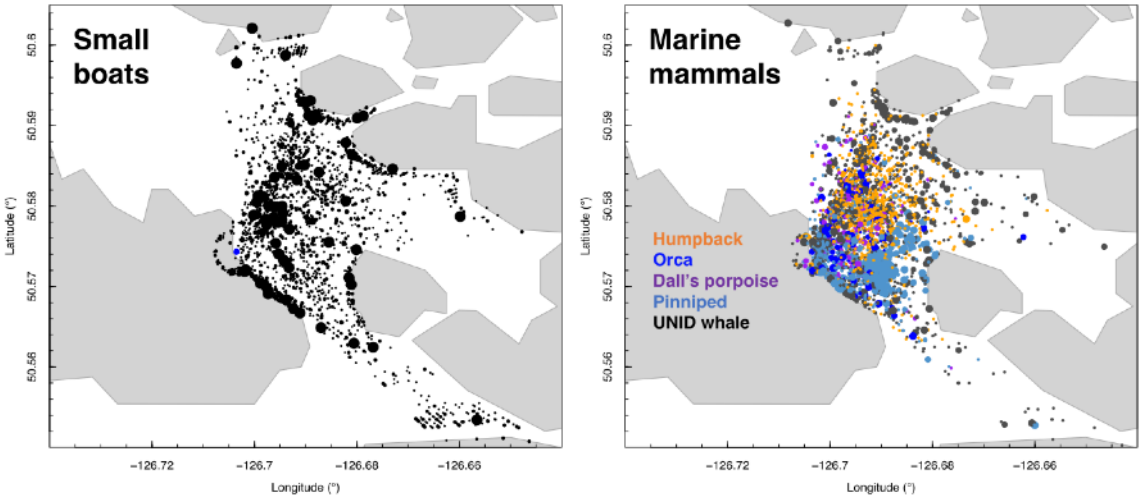
Table 2. Monthly sighting rates (sightings per hour of scan effort) in 2020.

Species	May	June	July	August	September	October
Effort (hours)	—	—	60	58	49	41
Humpback whales	—	—	4.38	3.45	1.39	2.37
Bubble-net feeding	—	—	0	0	0	0
Fin whales	—	—	0	0	0	0
Dall's porpoises	—	—	1.97	0.57	0.51	0.12
Orca	—	—	2.00	1.98	0.86	0.00
Vessels	—	—	9.52	10.12	4.41	1.51

In 2020 individual scans were reduced from 20 minutes to 15 minutes. We also reduced the number of scans per day. Rather than by the hour 9 scans were done at set times throughout the day. This accounts for the decrease in the number of scans and observational hours. We also began a week later (July 1 vs June 24) in 2020. Much of this adjustment was due to COVID-19 limiting the number of volunteers we were able to accommodate and the need to provide reasonable schedules in light of the reduced numbers.

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 conclusion because when orcas are present scanning efforts were often terminated so that photographs, video, identification and recording efforts might occur.

2019



2020

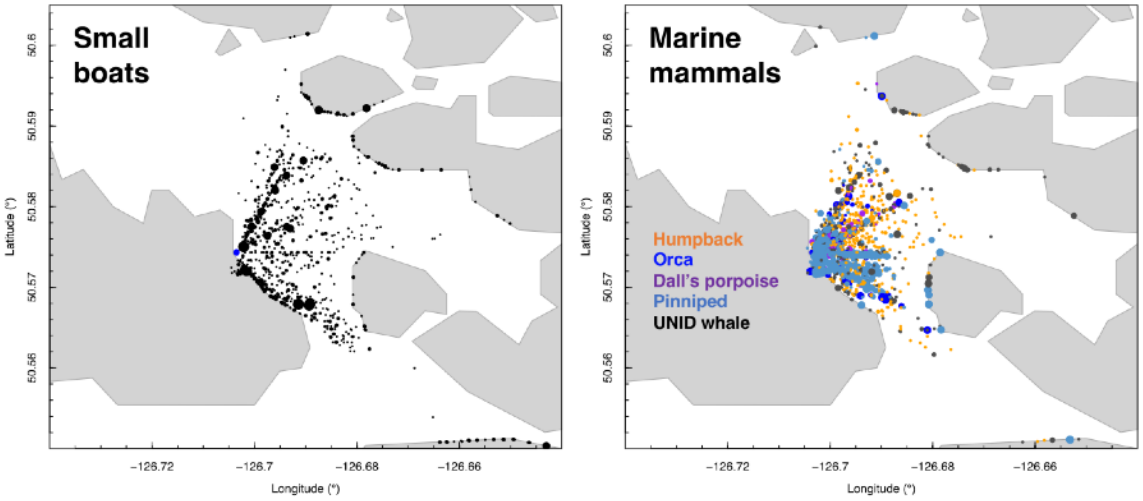


Figure 1. All sightings of small boats (left) and marine mammals (right) from Orcalab in 2019 & 2020. For marine mammal sightings, dots are scaled by group size.

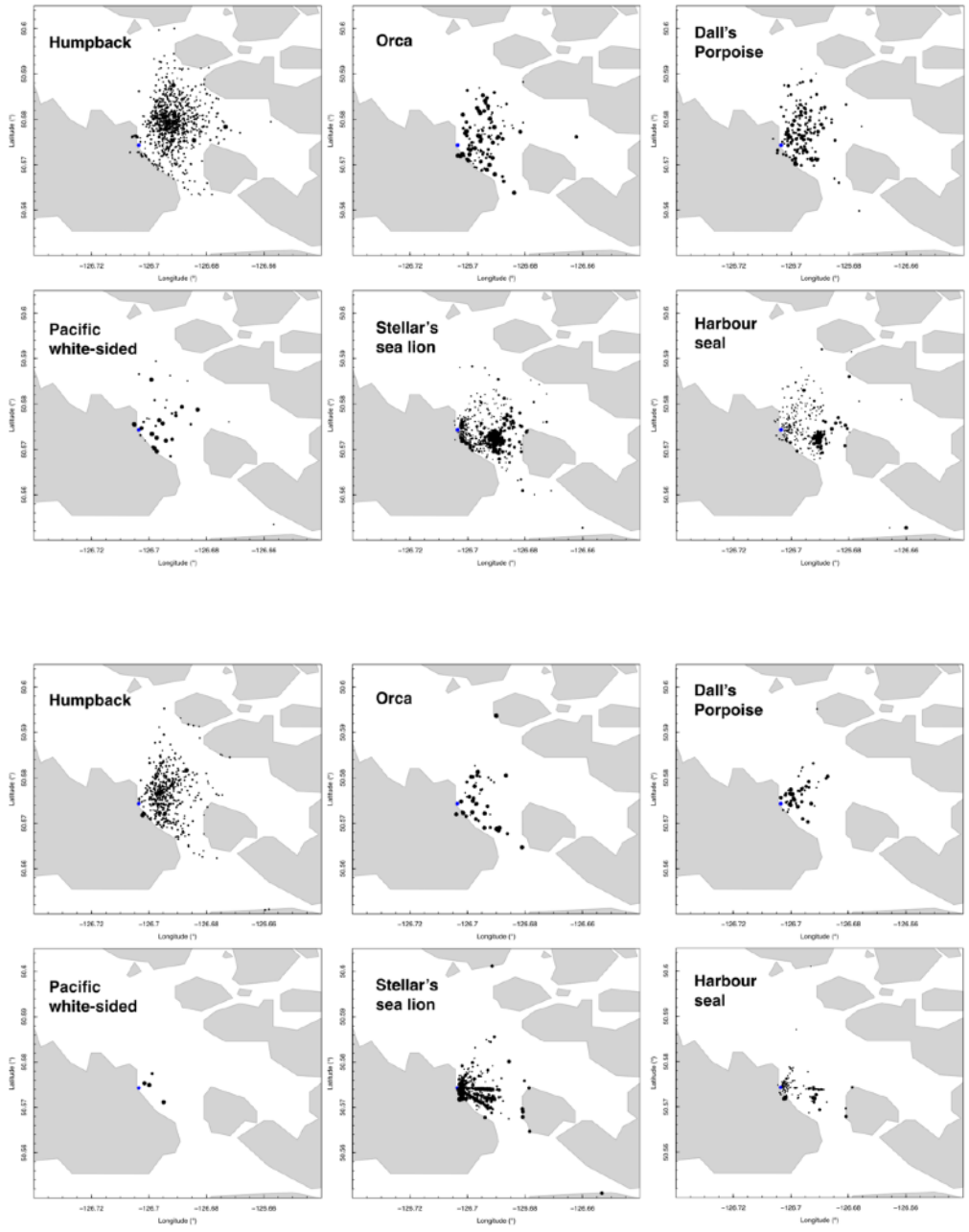


Figure 2. Sightings from Orcalab for each marine mammal species. Dot sizes are scaled by group size.

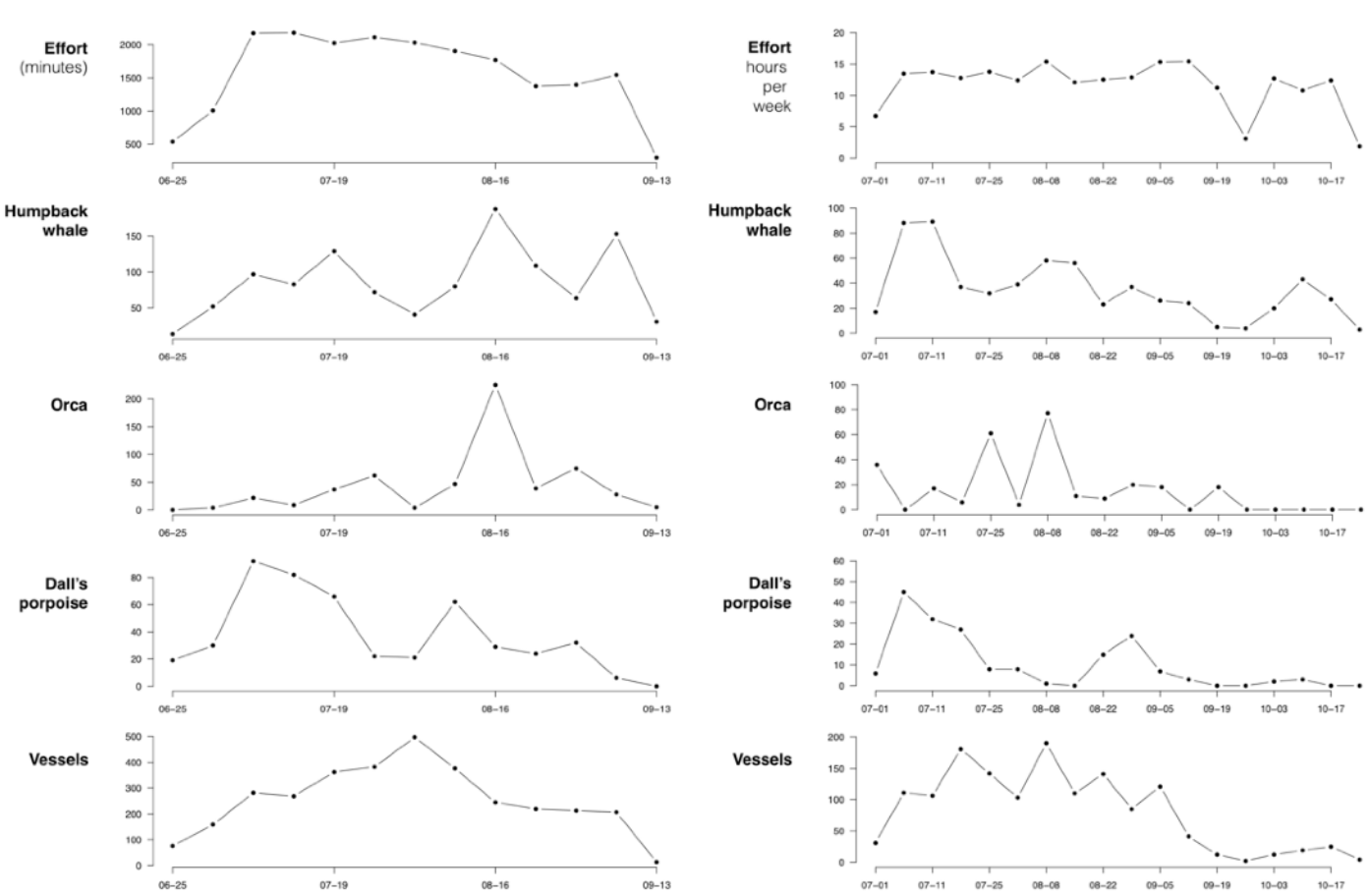


Figure 3. Weekly effort and sighting totals from Orcalab in 2019 & 2020. Sighting totals are calculated by adding together the group sizes of all detections.

There are several take-aways from these data. Clearly, Blackney Pass (where the Lab is located), is a busy place as the numbers of small vessels and marine life verify. Even allowing for the reduced scan schedule the accumulated data in **Fig. 2** suggests that in 2020 there was a reduction in vessel traffic. We had anticipated this due to COVID travel restrictions lessening numbers of recreational and sports boats. Cruise ships were banned from Canadian waters throughout 2020. This was a welcomed change from our perspective by reducing the amount of noise in the water. However, by August, recreational boats, along with whale watching vessels, were again quite prevalent in the area as people learned to deal with COVID restrictions and felt comfortable escaping on to the water. The scale of activity was still smaller than in years past, however, larger marine traffic, tugs, freighters, articulated tugs, and ferries carried on as normal. Noise was still a constant presence.

Boats focused on whales, dolphins and other marine life are a real concern. A lot of effort goes into educating boaters regarding best practices including respect, keeping distance and mindfulness. Keeping an eye on Blackney Pass is part of the daily routine not just during scans. Unfortunately, we witnessed a disturbing scene on August 29 when two persons on jet skis persisted in driving their vehicles amongst a large group of dolphins. We had not seen such flagrant behaviour before. The following is part of our filed complaint.

~

Just before 3pm (2:55pm) on August 30, 2020 we became aware of two jet-skis in amongst a large group of Pacific White-Sided Dolphins. The dolphins had come from Blackfish Sound. They were mid channel initially heading south. The jet-skis were operated by an older gentleman and a much younger man, each on their own ski. The younger man was clearly holding a cell phone, presumably filming, in one hand, while driving with the other. The older gentleman had something in his hand as well. They operated the skis at high speed the majority of the time. The younger man was the more persistent of the two.

The jet-skis drove in amongst the dolphins and changed direction several times. The jet-skis were always closer than 100 meters during the entirety of the incident while driving at high speed. The dolphins reacted by changing direction and increasing their speed. They flanked the skis at times as dolphins will when revved up by close encounters involving speed and unpredictable behaviour. This seemed to encourage the men to continue.

We shouted across the water to try to attract their action. This failed.

We contacted two of the whale watch boats nearby and asked them to assist by talking to the men on the jet-skis. The operator of the Prince of Whales zodiac responded by providing the information that these men were staying at Telegraph Cove. We discussed the possibility of talking with them once back in the Cove where Prince of Whales Whale Watching is also located. We do not know if there was any follow-up. The operator of the second vessel, Sea Smoke Whale Watching, stopped and hailed the men over. They obliged. After talking with them the men on the jet-skis ceased harassing the dolphins. They motored slowly across Blackney Pass and eventually disappeared through White Beach Passage at 3:10pm.

We immediately called the Incident Reporting Line: 1 800 465 4336 and left a message with details of the incident and contact information. We did not hear back immediately so later contacted Crime Stoppers and were advised to wait for the Incident Line to respond or call the local RCMP.

The dolphins left in the direction of Blackfish Sound.

The jet-skis returned later in the day at 5:30pm at which time they were at some distance south of the Lab mid channel. We had been anticipating a group of Northern Resident orcas arriving from Johnstone Strait. When in view, the jet-ski operators did not interact with the orcas but left towards Johnstone Strait as the whales continued north. On this occasion we do not know if they had been near the orcas when out of sight of the Lab.

The jet-skis reappeared one more time at 6:11pm. They stopped next to a Steller Sea Lion and then sped away to Blackfish Sound.

We later learned that the jet-skiers returned to Telegraph Cove. Today, they were again seen leaving the Cove with two other jet-skis.

We found this incident to be very disturbing. By virtue of being a large group of dolphins there were probably infant, young and older dolphins amongst the group. The regulations clearly state at least 100 meters distance must be maintained around dolphins and if babies present 200 meters. The speed at which the skis were driven, the many changes of direction in close proximity to the dolphins and the reckless behaviour of driving with one hand and using a cell phone in the other contributed to our distress. It was a clear violation. During the incident there were also Humpback Whales and Steller Sea Lions nearby.

~

Unfortunately there were other incidents that followed though not quite as intense. We worry that this may develop into a trend and hope that the authorities manage to act before the 2021 season.

The scans also have revealed that Dall's Porpoise typically are more evident in the earlier part of the summer. Perhaps, Dall's porpoise are sensitive to the later increase of boating activity. 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 offer more of a concern for these species, as does the cumulative negative impact of boat noise. 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 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 engaged in sustained sessions of song, a clear sign of their increased social activity. We made notes about which humpbacks were present. Many were very familiar returnees.

The Marine Education and Research Society (MERS) has taken on the task of cataloguing every individual humpback who visits the waters off northeastern Vancouver Island. The result is that we now know that between 60 and 100 humpbacks return almost yearly showing strong fidelity to the area. Often adult females will return with a new baby in tow. Humpbacks are a near daily presence from April through December each year. Seeing their familiar fins and flukes is reassuring. Over two decades ago humpbacks never frequented the area. But since the cessation of whaling in 1967 when the population was pretty much decimated, humpbacks have made a successful return to the eastern Pacific coastal area. Once their home, their home once more.

The first humpback vocalisations were recoded as early as April. This was very unusual. Actual song takes a while to develop, begins tentatively and finally emerges full-throated by the fall. One night Suzie and Helena, sitting in the Lab recording humpback vocals were startled by some faint percussive like sounds. A humpback was very close to one of the hydrophones and the sounds resembled heart beats. They were not entirely sure but were intrigued enough to let their imaginations embrace the idea. Nothing came of a closer look at the spectrogram or repeated playbacks. In 2020 we made over 380 recordings of humpback vocalisations ranging from feeding calls, developing songs to full on and sustained song. This is a very good record of their vocal activity. By cataloguing the recordings we hope to gain insights into how songs develop over the course of a season.

The Northern Resident families who used the Johnstone Strait area in 2020 included 22 matrilines (there were fewer in 2019): A50s, A54s, A34s, C06s, C10s, D01s, A24s, A35s, A73s, A23s, A25s, A42s, G17s, I12s, I13s, I04s, I27s, I65s, I16s, R05s, R13s, R18s. Members of each clan of the Northern Resident Community, A, G and R were present. In 2019, there were 13 matrilines and no R clan families, just A and G. In 2020, all but the R clan families used the rubbing beaches.

Bigg's or Transient orcas were quite prevalent throughout 2020. The occurrence of Bigg's orcas has increased steadily over the past decade. Once considered elusive and rare to the area, Bigg's sightings have become more frequent, possibly due to the increase of effort but also because of increased prey availability. Bigg's orcas are difficult to monitor acoustically because they have adopted a strategy of stealth when moving around an area. Most sightings therefore are opportunistic. Fisheries and Oceans Canada (DFO) have put a lot of effort into compiling data on Bigg's orcas. This work culminated in the 2019 publication (already well thumbed through) of the *"Photo-identification Catalogue, Population Status and Distribution of Bigg's Killer Whales known from Coastal Waters of British Columbia, Canada. Canadian Technical Report of Fisheries and Aquatic Sciences 331" .*

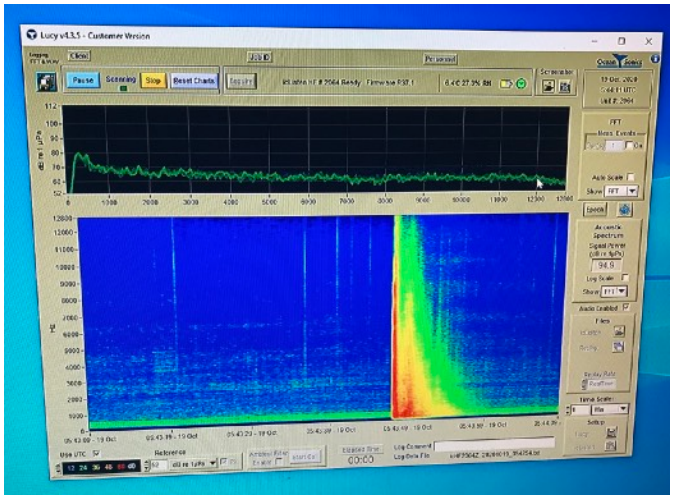
This opus discusses the DFO's study of Bigg's orcas in great detail. Included is a summary of the study from the 1970s, photographs of both left and right sides of each known individual grouped according to their closest association. The catalogue even includes individual eye patches for further identification purposes.

This comprehensive catalogue has made our work identifying Bigg's orcas so much easier, even from shore. The fact that many of the Bigg's have become frequent users of the area also helps. We have

come to expect the return of certain groups. In 2020 close to 30 different groups transited through the area. This betters the number of Northern Resident groups! We also made several Bigg's audio recordings. Bigg's orcas can be vocal but not as predictably often as their Resident, fish eating counterparts. Bigg's orcas hunt very aware marine mammals who have excellent hearing so it does not serve a Bigg's orca to move around noisily. However, as a successful hunt progresses Bigg's orcas often become vocal. When gathered into large social groups, especially if young ones are present, then too we may hear calls. In a broader sense, Bigg's orcas have dialects according to which population they are associated. The West Coast population, those Bigg's orcas we most encounter, sound different from the Alaskan and California populations.

One final note on the importance of the icListen hydrophones. These installations will be in place throughout the year providing consistent, continuous and comparable data between sites, so a more accurate and comprehensive picture of the Johnstone Strait soundscape will be possible. We will eventually be able to compare data from other sites of the BCCHN and potentially provide a coherent picture of the soundscape of a good portion of the BC coast.

A dramatic illustration of the effectiveness of these strategically placed hydrophones was an event that occurred late October 18 and early October 19. Woken from sleep we heard several incredibly loud sounds originating in Johnstone Strait. We had not heard the likes of these sounds before. We captured more of the repeated sounds for about another hour. An examination of the files, including those from Strider and MRB, revealed these explosive sounds were heard over long distances. A mechanical "click", preceded each sharp precipitous "bang". The source of these sounds was unknown. As the Kaizumi, SRB and MRB icListens were contributed by DFO the recordings were sent to Dr Sheila Thornton, DFO lead scientist for BC, who passed them along to JASCO for further analysis. We have not heard the results. Theories included an air gun used for seismic testing activity. The only boat showing on the AIS was one parked in Growler Cove on the Cracroft Island side kitty corner to Kaizumi beach. The unsettling incident remains a mystery.



IWC

International Whaling Commission 2020

The Covid-19 pandemic quashed plans to hold a 2020 meeting of the International Whaling Commission in Slovenia. Like the Tokyo Olympics, it was delayed for a year and tentatively rescheduled for September 2021. Unlike the Olympics, however, that plan was changed and the 2021 in person meeting was further delayed until 2022. Nevertheless, the business of the Commission continued, with meetings being held virtually. Helena and Paul attended the 2020 meeting of the Conservation Committee as delegates for the NGO Dolphin Connection.

The IWC's Conservation Committee met for 4 days in 2020 via Zoom, commencing September 28th and ending on October 2nd. Participants included many government representatives from countries sympathetic to environmental issues, and many NGOs of the same persuasion. There was zero representation from pro-commercial whaling countries, bringing to mind the active opposition of Japan and its cronies to the establishment of the Committee in the first place. "Conservation" it seems is a word beyond the purview of commercial whalers.

Since its inception in 2003 via the "Berlin Initiative" the Conservation Committee has taken on many of the most pressing issues of our time, and not just those which directly affect whales. In 2016, the Commission adopted a new Strategic Plan for the Committee aimed at identifying threats to cetacean populations and finding solutions to them. Increasingly, it works in coordination with the IWC's Scientific Committee, which is gradually moving away from its historic single-minded focus on whaling. A prime example is the decision of the Commission to hold a joint Scientific Committee/Conservation Committee Workshop on Climate. After understandable Covid-related delays, this workshop is scheduled to happen virtually in September 2021. What comes out of it will be important not just to whales and oceans, but to the future of our planet. Earth from space is a blue planet for a very good reason. Most of its surface is ocean, so what happens in the oceans affects all of the life we share this precious gift from the cosmos with.

The 2020 Conservation Committee meeting began on a serious down note, the dire situation faced by river dolphins. Conflicts over fishing activities, including using dolphins for bait are pushing South American river dolphins towards extinction, and South East Asian river dolphins face a similar fate from habitat pressures as their living space shrinks year by year with the construction of up river dams. Whether Regional Management plans will save the day for these precious creatures who have achieved incredible adaptations to their murky environments is anyone's guess.

On a brighter note, critically important issues are being addressed by the Conservation Committee, significantly aided by coordination with the Scientific Committee. Work plans for the next few years include addressing by-catch, entanglements, ship strikes, pollution (including plastics) and anthropogenic noise. The latter is increasingly being recognised for its deleterious impacts on acoustically dependent cetaceans as shipping traffic increases around the globe. In this context, the Covid pandemic in some ways has come as a slight respite for cetaceans. Without question pressures from ocean noise will increase in the coming years, until a point is reached when ships are propelled by carbon neutral means. Should this be accomplished by 2050, which is the stated resolve of the world community, the last half of this century may see cetaceans carrying a much lighter burden from humanity than they have in the recent past.

Summing up the current state of the IWC, it is moving forward in a positive direction, driven by the coordination that has been achieved between the Scientific and Conservation committees. Japan's influence after leaving the IWC lurks in the background, as it continues to have support from the client states that gave it a blocking minority. Its determination to continue commercial whaling regardless of world opinion is an obvious affront, but the Japanese government is reducing or eliminating subsidies that have kept the industry alive. We hesitate to say the end is in sight for Japan's die hard whalers, but if their crowd funding efforts to build a new factory ship fail, we will know.

Corky

Corky, for those unfamiliar with her story, is a captive orca held at SeaWorld, San Diego. She was captured on December 11 1969 at the young age of four and separated from her mother. She was given the alphanumerical identification A16, consistent with the rest of her surviving, wild and free family. Corky's mother, Stripe is no longer alive but Corky has two living siblings, a nice and three grand nieces and/or nephews, as well as a large extended family. It has been a dream for decades to find a way to bring Corky home and back to her family. Protests, demonstrations, a huge kilometres long banner, have called for her freedom. Sea World is deaf but the effort carries on.

To mark the 51st anniversary of Corky's capture Paul wrote the following:

"It's hard to imagine and difficult to grasp, but this day, December 11th 2020 marks the 51st anniversary of Corky's capture. Unbelievable. But true. Every day Corky keeps herself alive in the barren concrete tank that is her Sea World "home" she creates a record for captive orca longevity. Fifty one years. Adjectives pale, words fail. I am left with the belief that Corky knows in some way unfathomable to us that people around the world want her to come home to meet her family again, and that leads me to believe she will. She is perhaps above all, patient. Waiting. Waiting.

As with the Covid crisis, I see hope on the horizon. A sanctuary is being prepared for Corky, in Double Bay on Hanson Island, close to where Springer returned to her family.There, though Corky will still be confined she will at last be home. She will meet her family again. Imagine the day.
I know that people around the world will light a candle for Corky today, as Helena and I will, and that collectively we will convey our hopes and dreams for Corky. Please join us. She will know."

https://vimeo.com/489696838
By Paul Spong,
December 11,2020

VOLUNTEERS, VISITORS, CARPENTERS, ELECTRICIANS & CARETAKERS

Our most prominent visitor in 2020 was Mali, the Grizzly bear, who for almost two weeks roamed Hanson Island near OrcaLab. We suspect Mali was the bear sighted across Blackney Pass on Parson Island in 2019 and the same bear who made it to Double Bay later that autumn. Even though he killed a pet dog that made a fatal mistake of jumping from a boat skippered too close to shore, we were not particularly alarmed. Bears were not common on Hanson Island situated as it is in the centre of wide waterways with strong currents. The black bears who did make it to these shores always moved on quickly without creating any impact. In 50 years, probably only 5 black bears were ever seen. Even the two grizzly bears, Mali's predecessors, a sister and brother, who island hopped their way to Alert Bay, never bothered to investigate the camp. We had become complacent and unguarded. Measures had always been taken to secure food from squirrels, mice and deer. Garbage was taken away regularly but stored in a shed with a flimsy door. None of the doors were secure and many of the windows were still single-pained. Gas cans were often left close to where they were taken off the boat. Worse was the pile of garbage under an old tarp created by a "clean-up" of the little cabin and waiting to be taken away.by boat. In short, we had no idea about what we were in for. That March, Suzie and Quin were at the Lab. Suzie was simply sipping her morning coffee when she looked up and saw this beautiful bear on the nearby rocks looking out to sea and sniffing the air. As you will read in Suzie's account below the situation became more and more dire as Mali found ample opportunity to become habituated.

~

"As the rest of the world suffered pandemic pandemonium, we three on Hanson Island were sent our own reason to stay indoors and keep caution: a curious grizzly bear named Mali. It has proved difficult to talk about, as a story I feel I am still processing and one which deserves immense respect. Despite the highs and lows and bizarre turns this year has taken – Mali has probably been the most significant element, and I want to remember him for decades to come.

He became a permanent feature of our lives for ten whole days, and each day felt more heightened than the last. Media coverage felt frustratingly political, and I suppose my

motivation for this post is to share a little of his character and celebrate his life, and the lessons he has taught me.

In short: There has never been a grizzly bear seen at this property before, and we had no prior experience of bear etiquette. He became unfortunately familiar with our property, our space and our smells. Worst of all, he found his way into some trash – the factor which most likely led to his untimely demise.

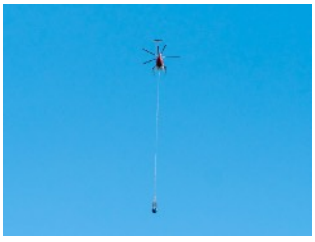
My most vivid memory is our attempt at coexistence. We followed the advice given to us: establish a boundary with the bear. Make it clear where he can and can't go, until he eventually moves on to find a mate.

One bright afternoon in early April, after his usual morning forage in the tide-line, he made his way through the forest towards the lab and house. He was going to cross our imaginary boundary. We stood in his path and waited for him to approach. I remember glancing left and right, at Megan and Quin, as we opposed the advancing grizzly bear; our feeble, fleshy bodies 50 metres from his raw power, teeth and claws. For a fleeting moment, I wondered if this would be our end. What the heck were we doing? And yet, in an instant, my doubts were gone. Mali seemed completely peaceful. There was no sense of aggression or malicious intent, only a young grizzly trying to find his place in the world.

He would possibly have walked right by us with little interest had we not fired a bear-banger. The deafening boom shook us all, and Mali turned on his heels. Seeing a grizzly run at full-pelt is not something I'll likely forget. We made our way back to the house, congratulating ourselves for establishing our boundary. Job done, victory won.

Within the hour, he had broken into the house and dragged several food bins out of the pantry. Boundary abolished.

We spent the next two days in a painful limbo, evacuated from the island while Conservation Officers assessed the scene. A bear who learns that food lives inside paints a target on his head. We received the news he was going to be shot. We received the news this had been overturned, and they were going to relocate him. We spent those days in emotional turbulence, wondering if our action or inaction had put this bear at risk.



Eventually, he was successfully snared and tranquillized. On April 9th he flew over our heads, dangling beneath a helicopter – back to bear country. Bear country felt uncomfortably close, given how far they can travel in a day. There was an eerie sense of calm as we assessed the damage: broken structures, upturned fridge, giant paw prints on the living room window. As the media celebrated his successful relocation, we lived in constant anxiety of meeting those big, brown eyes round every corner.

Days later, we received a report that he had been sighted halfway between his relocation spot and Hanson Island. He was almost certainly coming back. Grizzly bears invaded my dreams, smashing down doors and windows. Every small sound magnified; every rustle in the bushes a crick in the neck.

And then… he was dead. Shot by a man on his private property, only a few miles away. We don't know the full details, but it is likely Mali had once again been too curious, and the man had felt threatened.

More emotions were stirred: grief at the loss of this beautiful life; relief that we no longer had to live in fear; guilt for feeling relieved, and that we may have aided in his habituation. I still flit between the three, although gratitude has slowly started to overcome them all.

I am endlessly grateful to Megan and Quin, as we rode this roller-coaster together. I hope we can visit Mali's grave this year and pay our final respects. I am grateful to everyone – too many to name – who had a hand in relocating this bear, and guiding us through.

I am grateful to those who share this post, so that Mali might be remembered and his story a cautionary tale – our ecosystems are changing and we have to act accordingly. Perhaps this was an anomalous year, or perhaps this will become the reality for the Broughton Archipelago and neighbouring areas.

Above all I am grateful to Mali, whose presence will always be felt on Hanson and in my heart. For a short while, I felt the spirit of a grizzly bear and saw the earth through his eyes. The spring was new and the trash was tasty. The world was an oyster at my clawed feet."

~

On a positive note, Mali's visit was beneficial. Given the clear understanding that visits from bears could be a more regular occurrence we decided to make OrcaLab bear-safe so that the chances of a repeat of our Mali experience were lessened, and that we would no longer contribute to the demise of another bear. We consulted with the Conservation Officers and followed the BC Parks guidelines, https://bcparks.ca/explore/misc/bears . In readying OrcaLab we decided a major clean-up was needed. Fifty years of accumulated "stuff" was sorted, organized and items no longer useful, just too old or redundant were tossed. This required many trips to the dump. We hired Harry Alfred to come and take the heavy items away in his front loading skiff. Rob Campbell, also from Alert Bay, helped out by taking away old batteries and using his truck to haul the old fridges away to the dump. Although this process is far from completed OrcaLab, feels "lighter", less cluttered.

We also made plans to redo the Camp Kitchen where the assistants normally prepare food. In 2020 we abandoned this kitchen and had the few assistants on hand cook in the guest house and sleep indoors as a precaution. We were not quite "bear ready" and until we were we tried to be very careful and keep everyone as safe as possible.

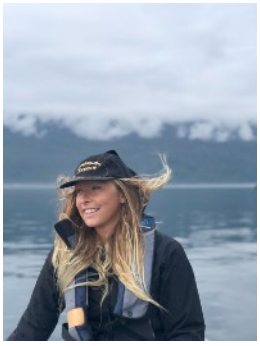
Due to COVID OrcaLab had very few visitors of the human kind. We kept to a very small crew. In the early part of the summer, Suzie, Quin and Megan managed most of the activities around the Lab. Helena helped out with recordings and scans. Janie stayed until mid July. We invited Jennifer Libotte to join us in July. Anticipating the busiest part of the summer, we knew we would need additional help by August. We accepted a few inquiries and welcomed Pippa Dean and Gloria Pancrazi in late July and April Houweling and Megan McKenzie in August. The Lab almost felt "normal' except we went

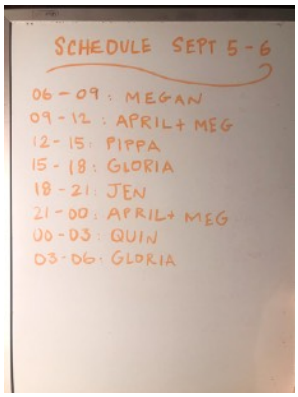
through strict COVID protocols requiring each pair to do a quarantine period, work in the Lab wearing masks and utilizing our hand sanitizing stations. We all felt the strain but we managed to keep safe.

Helping to relieve the strain was Moss, Pippa's gorgeous Springer spaniel puppy, who turned out to be the covergirl of our 2021 calendar. Everyone loved Moss whose boundless energy was just the pick up we all needed whenever overwhelmed by whales and the endless demands of chores and daily routines.






Megan has been coming back to OrcaLab for nine seasons, Suzie for four, and Quin one so far. Their help over the past year has been invaluable. Their energy and kindness ensured that everyone stayed motivated, safe and useful.

Jennifer found out about OrcaLab after meeting Janie Wray at the Marine Mammal Conference in Barcelona. While at the Lab Jennifer became interested in the activity at the rubbing beaches and took on the job of sorting out the data from the three beaches.

Pippa came to us though the recommendation of local Alert Bay resident, Jamie Taylor, who happened to meet her while she and friends were looking around the town. From the UK, Pippa like Megan and Suzie, was on a working visa and was living in Nanaimo as a vet assistant. She turned out to be a very good photographer and settled into the Lab routines very quickly.

This was true for Gloria as well. Gloria had heard about the Lab from Megan and the two shared a common interest in film making. Gloria had been working on her film, "Co-extinction", before she arrived at the Lab.

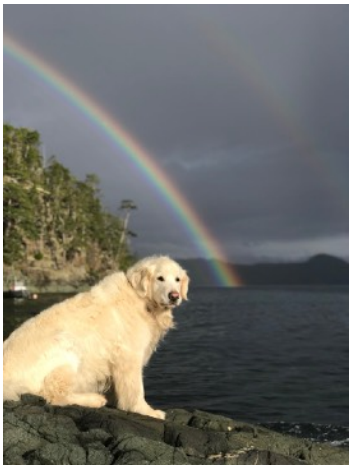
April and Megan (McKenzie) arrived together. Both had originally inquired about working with Janie Wray at Fin Island but due to COVID they were unable to work in that area. Our gain! Both had a biology background. Megan had an interesting job working with raptors shooing away geese and other birds from the airport. April discovered a deep interest in humpback whale calls and did preliminary work on figuring out early song phrases and fragments. April has gone on to work with JASCO.

Our Lab still functioned with this limited number. Fortunately, previous volunteers still wanted to be involved although they could not be physically at the Lab. Our night-time coincided with Japan daytime so Tomoko Mitsuya and Momoko Kobayashi could, via WhatsApp, advise the nightshifts as to who they were listening to! Others at a distance kept their hand in as well. Karien Bergmans in Belgium was always available to help with social media. TJ was always listening in Mexico. They were great moral support in these difficult and changing conditions: Suzie left to work at God's Pocket near Port Hardy as a dive assistant; and by the time Pippa and Gloria were readying to move on, April and Megan (McKenzie) had arrived.

Later on, friends of Megan Hockin-Bennett, Becca Crilly and James Hallett, arrived to help out with the later part of the season. Both had lived and worked in the area and were very familiar with the lifestyle. Becca took on duties in the Lab while James concentrated on any practical jobs which needed attention, including fixing the stairs to the upper level of the main house. Then, when Jennifer's boyfriend, Anthony Godo arrived, James and he set about replacing the whole deck from the main house to the Lab. Jennifer had calculated the amount of wood needed to do the job. This was ordered from Shoprite and after three heavily loaded trips using the June Cove the work got underway. Anthony and James worked so well together and before we knew it the new deck was done! An absolutely beautiful job completed.

By this time we were well into the Fall. By late October the Northern Residents had departed, the humpbacks remained a while longer, the pace at the Lab naturally lessened.

Time for the winter caretakers to take over!



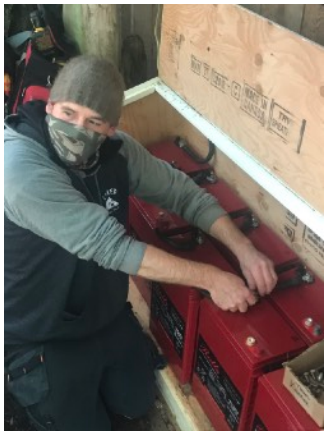
Lisa Larsson, after an absence of two years finally made it back to the Lab in November. She had plenty of time to do her two weeks quarantine before Janie Wray, back from the north, joined her. Janie, of course, brought her lovely Golden retriever, Cohen and the three of them shared the guest house. Quin, by this time had decided to return to the United States to see family. Suzie went home to the UK. They planned to be back in January 2021. Lisa took charge of the Lab, the systems and the gathering of a wood supply to keep her and Janie warm. Secretly, Lisa was probably hoping Yukusam, the sperm whale, would turn up again as he had when she was last at the Lab. Without Lisa and her tireless tracking of Yukusam during the five weeks of his 2018 visit we would not have been as aware of his presence and movements. Sadly, Yukusam did not return but there was enough Bigg's orca activity to keep Lisa's attention.

In March Quin welcomed his friends Jon Wiley and Sam Seacrist. Both helped out by chopping and stacking a fallen hemlock and making a trip to David Garrick's Earth Embassy camp to retrieve his old journals. Jon, a chef by trade, will be forever remembered for his sea urchin pizza and paté.

During the summer we only had very brief visits. No overnight guests. Our very old friend filmmaker Patricia Sims and her friend, Sarah Robertson spent the afternoon at the Lab. We suggested they stay in the Alert Bay house for the night after their journey to the North Island and then come down to OrcaLab for lunch. It was a lovely afternoon with refreshing and lively conversations. Almost normal!

In 2020 the Hakai Institute made, "Time To Listen" https://www.hakaimagazine.com/videos-visuals/its-time-to-listen The focus of the video was to highlight possible changes to the coastal soundscape in the absence of cruise ships. This was the only film project OrcaLab was involved with during 2020 other than the videos made for the Whale and Dolphin Conservation monthly report produced by Megan Hockin-Bennett. Megan was key to the Hakai project which was produced by Louisa Gilbert of Wild Bus Films. Tavish Campbell and Deirdre Leowinata contributed underwater footage to the project when on hand during the installations of the icListen hydrophones. Louisa came for a quick tour of the Lab as the project progressed.





As always, OrcaLab is continually working on its power systems. 2020 was no different. The Lab underwent a major overhaul of the electrical systems thanks to Andrew Jennings. Out with most of the power bars and extension cords, in with proper boxes and wires. Along with the new system a bigger and more compatible generator was needed and later installed. Uninterruptible Power Systems (UPS) were re-installed as well.

Mark McCallum returned to work on the interior ceiling in the main house. This was never an easy job and it has been done in stages whenever Mark has spare time from the farm he works on. But as he progressed with the job we got an inkling as to how the finished ceiling would look. Using cedar, Mark covered up the insulation he had fixed in place and carried on finishing the look of the beams and around the skylights. Not only spectacular but beautiful and much warmer. It is the first time the ceiling has ever been insulated. Gone will be those chilly winters when we had to huddle around the stoves for warmth.

Clay Fischer made a return trip to OrcaLab to help install the new large battery bank and check on existing power systems he had installed previously. Clay supervised the moving of the old batteries out of the battery box first before the new batteries were put into position. Clay then completed the hookup.

The heavy new batteries had been delivered by truck to Port McNeill where they were dropped on the loading dock ready for transport by the *June Cove.* When Paul and Helena saw the stacked batteries they had to figure out how to get the load onto the boat safely and as easily as possible. A little daunting! Bill Mckay was called. Bill took one look and decided to go back for his truck which had a small crane. By the time he got back Paul and Helena had unpacked several and even moved a few. Bill spied two strapping young men loading their own boat and called them over to help. Within 15 - 20 minutes the June Cove was loaded and ready to go to Hanson Island, no crane needed! Youth! On the other end, willing assistants organized a ramp after the *June Cove* was beached and slid the batteries to the beach and then got them onto the deck where they were shuffled near to their final destination.

While at the Lab Paul and Clay discussed the possibilities of setting up a micro hydro installation. Years ago, OrcaLab had a functioning micro hydro system that took advantage of one of the small streams. It had worked well but eventually became difficult to maintain. This technology has progressed, the stream is still there, and the hope is that by redoing the system OrcaLab would go one step further towards energy self sufficiency which is still proving to be a challenge in the dark winter months.

All in all, despite the Covid induced limitations, 2020 turned out to be a productive, even great year for OrcaLab. We ended up safe, well, and having made real progress on several fronts, and looking forward to the next round. Bring on 2021!

We are deeply grateful to everyone for their support of our efforts on behalf of whales.

Please take very good care and stay safe.