

Whitehorse Rapids Fishway Report 2017



The Whitehorse Daily Star features some of our awesome staff sorting salmon on August 8th.

“SLIPPERY BUSINESS – Ross McBee, Lawrence Vano and Brittany Key, left-right, count salmon this morning at the Whitehorse Fish Ladder. There were 15 salmon in the tank this morning, and seven were taken for the hatchery program. As of Monday, there were 157 through the ladder – 92 males and 65 females. Star photo by VINCE FEDOROFF”

***Emilie Major-Parent
Elizabeth MacDonald***

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Staff

The Whitehorse Rapids Fishway (Fishladder) had some excellent staff members this year. Despite a few issues with two attendants at the start and at mid-point in the season, one resulting in resignation and the other in dismissal, the team members were getting along and did a great job with visitors.

Emilie Major-Parent and Ross McBee were previously hired by Yukon Fish & Game Association (YFGA) and started on May 23rd. Ross had been an attendant for two years before being hired as a supervisor this year. Emilie was also a returning staff and had worked as an attendant in 2016. Elizabeth MacDonald was hired on May 15th as the Manager and started right away. She had previously worked as a Manager at the Whitehorse Rapids Fishway in 2010 and one of the best Managers the Fishladder ever had according to Janet Patterson, Manager of Communications at YEC.

The attendants hired were Justin Ford, Brittany Key, Karine Smith, Preetinder Dhillon and Leigh Relkoff. Leigh was a returning attendant from last year and was hired to fill in a few odd shifts towards the middle and the end of the season. All of the attendants started at the Whitehorse Rapids Fishway on June 20th and took part in an orientation day.

At the end of May, Justin Ford quit. Leigh was called in to fill in a few of his following shifts, but the need for a new attendant was pressing. The position was filled by Patrick Bell who started work on July 11. A few weeks after his hire, he was replaced by Gabrielle Riefesel. Gabrielle immediately picked up on the job and gave tours on her very first day. She got along with the team and was an asset for the salmon sorts.



Attendants' performance reviews were given at the end of July before the salmon run started. To give a more positive approach, the review was renamed "Achievement Appraisals" and they were given to everyone, including the manager and the supervisors. This was efficient and provided staff with an assessment of their strengths and improvements for staff, management and the Fishladder.

Towards the end of the season, Elizabeth was requested from DFO to help with a project for a few days (August 22-25). Emilie acted as the Manager and Karine backfilled the Supervisor position.

Most of the staff members were fluent in French. Emilie, Ross, Karine and Preetinder gave tours in French. Gabrielle understood a fair bit of French as well. Preetinder and Emilie also spoke and understood additional languages, which was useful. Preetinder was fluent in Hindi and could understand and speak a

little Spanish. Emilie could understand German and reply with basic sentences and could speak and understand Spanish.

German speakers are the most numerous visitors after English. Hiring staff that speak fluently German would be an asset for the upcoming years.

Schedule

In June, the hours were from 9-5, seven days a week. The attendants all started on June 20 for an orientation day and then sporadically working one day each for the next four days until the hours of operation changed on June 25 to the 10 hours shifts. The hours were then from 9:00 am to 7:00 pm daily.

An averaging hour agreement was signed by all staff members shortly after the hiring process. The agreement said they would be working ten hour days, four days a week and have a three day weekend. This way they were not given overtime for two extra hours per day, but instead were benefiting from an extra day off. Most staff found these long shifts hard, especially on the third and fourth week but liked having longer breaks to enjoy the summer. During these shifts, Leigh came in from 5:30 to 7:30 pm and occasionally for weekend shifts, when needed. For lunch breaks, staff took either a full hour break or split it into two half hour breaks. The ten hour shifts lasted four weeks until hours were switched on July 23. Hours were then 9:00 am to 9:00 pm, daily.

The 12 hour of opening was in preparation for the Chinook salmon run that usually starts at the end of July. This year, the salmon started coming up on July 25, so the switch in hours was well timed. Most of the time, three am staff and two pm staff were scheduled. Leigh filled in a few pm shifts from 5:30-9:30 about one to three nights a week, depending on the need. The am shift was from 8:30-5:30 and the pm shift was from 12:30-9:30. Each shift also had a supervisor/manager, as well as at least one French speaker. From 12:30 to 5:30, am and pm staff would overlap so that am staff could go on their lunch breaks between 12:30 and 3:00, and pm staff between 4:00 and 5:30.

The schedule change to the 9:00-5:00 hours was planned for August 22, but because the salmon run was still going strong, especially at night between 6:00-9:00, a decision was made to extend by a week the 9:00-9:00 schedule, with 2 am staff instead of 3, due to limited staff availability. The switch to the 9:00-5:00 schedule was postponed to August 27.

Staff end dates were varied and ranged from August 25 to September 6. Fortunately there was enough staff to cover all shifts during opened hours. Emily and Elizabeth were the only staff members available for closing the facility, which was sufficient.

Safety & Maintenance

This year at the Whitehorse Rapids Fishway, Elizabeth did an incredible job taking safety to the next level for staff, workers and visitors. At the start of the year before officially opening to the public, Elizabeth organized a walk-through (May 24th) with YEC and Hatchery employees to identify safety, maintenance and improvements needed at the WRF. A total of 36 maintenance duties were outlined with 15 of them being related to safety. Currently, 26 of those were taken care of and completed. A total of 14 out of 15 safety related issues were handled this year. The only outstanding issue remaining is updating and fixing the emergency exit signs.

Several Safe Work Procedures (SWP) were updated or created, see below. In addition a training program was created to orient staff to the Fishladder and the safety equipment. As part of the training, and



specified in the Fishladder Walk SWP, the supervisors and the attendants were taken to the lower section of the ladder with Elizabeth and were trained on the safety equipment, self-rescue and partner rescue techniques.

New and Updated Safe Work and Environmental Procedures:

- Working Alone-Safe Work Procedure
- Water Rescue Plan-Safe Work Procedure
- Hornet Removal-Safe Work Procedure
- Fishladder Walk-Safe Work Procedure
- Environmental Policy
- What to do in the event of salmon poaching
- Tailboard JSA_Fishladder 2017

To meet the SWP and safety requirements, several pieces of safety equipment was purchased by YEC or staff. Some of this equipment was nonexistent or replaced equipment that was no longer safe.

New safety equipment purchased:

- Three new life preservers with rope
- Two new throw bags
- A smoke alarm detector
- Waterproof radios
- A lock for a cabinet, for safer money storage

All staff completed Yukon Energy's Environmental and Health Orientation. Additional training was also provided to staff and Fishladder visitors. Ross completed his Standard First Aid at Yukon College on July 11-12 and Emilie completed her online WHMIS training on July 22. Lawrence Vano, Nicholas Lapointe from the Canadian Wildlife Federation and James Sebes from Carleton University were also trained on the safety procedures and equipment on July 28 prior to starting the acoustic tagging. They also read and signed the Safe Work Procedures to work on the fish ladder and the Water Rescue Plan. Warren Kapaniuk was shown the training program on Sep 4. He graciously agreed to take over the program and will provide it each year to the new Manager. The Manager will then provide the training to employees, ensuring staff are adequately trained.

There were a few safety incidents this year, but no reported injuries. Two young boys from the Wildlife Preserve camp were stung by hornets in July and were given basic First Aid. One of the two boys had a mild allergic reaction. Lawrence also had a slip in the sorting cage, but was able to recover with assistance and did not get wet or injured. Lawrence immediately altered his 'kneeling board' to prevent a reoccurrence.

On July 5 the fishladder was mostly emptied to allow for YEC staff to repair a baffle that came loose. Staff assisted YEC in directing visitors and completing a fish salvage. While refilling the fishladder, the interpretive centre was emptied of people for just over an hour, as a safety precaution.

During the week of July 10 there was a lot of rain which caused a leak inside the building. The puddle ran across the facility from wall to wall. The leaking water was also under the floor and soft spots and

swelling could be seen and felt. A section of the leaking wall was cut open to investigate the source (the fishladder). As a temporary fix, holes were drilled to allow water to drain under the building, instead of through the floor. Repairs are planned by YEC this fall and will include replacing the floor, one wall and waterproofing the fishladder.

Wildlife

May

In May, a bird had been spotted attempting several times to build its nest on top of the security camera by the entrance of the facility. We put a studded piece of metal on it. A bird had tried to do the same last year in 2016. If the camera is no longer operational, I recommend removing it to prevent a reoccurrence.

June

Early June, one dead muskrat was recovered from the fishladder. A mammal platform was then designed by Elizabeth and put in place near the sorting area on the upper section of the ladder to provide a resting place for mammals and prevent drowning.

Emilie encountered a bear on the Millennium Trail on her way to work on June 20. On the same day, many hikers and visitors reported the bear to Conservation Officers (COs), who dealt with the situation.

July

During the week of July 23 a black bear was seen near the Fishladder several times by hikers and staff. The bear was eventually scared away with bear bangers by COs. During this time, staff carried bear spray to the outhouses as a precaution.



The mammal platform was used by a beaver on July 25th. After several hours of attempting to capture the beaver by a CO and Elizabeth, the chase was abandoned due to decreasing daylight. It is believed that an opening in the fence beside the mammal platform allowed the beaver to exit during the night. This would have resulted in a substantial fall, and we recommend repairing the chain-link around the platform to prevent this in future.

On July 25th a porcupine was seen along the ladder.

Hornets were very active and abundant in 2017. Some visitors were stung by hornets at the Fishladder and first aid was provided. The removal of hornet nests was attempted by staff members throughout the summer. At one point, YEC arranged for an exterminator (Orkin) to remove the worst nests. All staff

referred to the Safety Work Procedure regarding the removal of hornet nests. The nests were found by outhouses, the shed, under the boardwalks and under the deck of the caged observation platform.

August

Foxes have been around the facility from June to September and left droppings. Foxes have also been peeing on the entrance deck, which leaves a strong skunk smell.



A muskrat was found in the fishladder before opening on August 29. The COs were phoned and arrived just after 9 am. Until the COs had captured the muskrat, staff did not allow visitors up onto the boardwalk, to reduce stress to the muskrat and to allow the gates on the fishladder to remain open for the COs (this would have been a safety concern with visitors on the boardwalk). The COs captured the muskrat relatively quickly and released the muskrat back into the lake.

September

Almost at the end of the season, on September 1, another black bear was spotted by the outhouses, up the hill by the Fishladder and went down by the Millennium Trail. COs were notified again and staff carried bear spray to the outhouses as a precaution. The bear was later reported near the Robert Service Campground and was not seen again.

On the same day a dead muskrat was recovered from the front gate in the sorting area. It could have been the same muskrat caught by COs earlier in the week and released into Schwatka Lake. We notified YEC and the Hatchery and recommended that if muskrats are released into the Lake and are found dead in the fishladder a few days later, that COs release them below the Fishladder in future.



Another beaver was found in the fishladder by Hatchery staff after closing. It was hazed up the fishladder and it swam out the top. Hatchery staff conducted several fishladder walks and eventually saw it in the lake having a snack right at the top of the fishladder.

Fish Aquariums

The aquarium set up was complicated this season by the lack of filter media at the start. Usually the filter media (foam and ammonia rid pellets) are saved and reused to jumpstart the bacterial cultures that breakdown toxic ammonia. This resulted in stress on the rainbow trout and a large breakout of disease in the Chinook tank. Twenty-five Chinook were culled to help contain the outbreak. Water treatment for high ammonia levels and a water change was also completed to help decrease the ammonia levels. The remaining reusable media was kept this season, for next year.

At the beginning of the year, a new Chinook filter was purchased to replace a leaking filter and a new metal stand was constructed for the Kokanee tank. The previous stand (particle board) was damaged and was a safety hazard. The particle board stand under the rainbow stand should be replaced next year.

During a warm spell, the water temperatures in the tanks (especially the Chinook tank) increased. To help the chillers keep the tanks cool, Styrofoam insulation was added to the bottom and backs of the tanks. Later, hose insulation was added around the water hoses and chiller hose to help decrease condensation and increase insulation. A new chiller was ordered to replace the Kokanee chiller (it overheated and had to be unplugged, prior to fish being added). The new chiller arrived just before the end of the season. The old chiller will be kept as a spare.

Water changes were performed every 2 weeks and once a month the filters were cleaned and new activated carbon was added. Bubble curtains were also purchased and made a visible improvement in the Chinook and rainbow tanks by increasing the oxygen levels within the tanks.

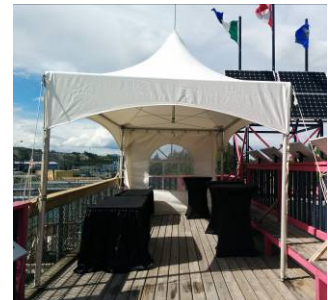
Special Events

Fisheries Ministers Reception

On the evening of June 26 from 7 to 9 pm, the Fisheries Ministers Reception hosted about 60 people. Yukon Government arranged the set up and the Fishladder was closed an hour earlier (6 pm) to accommodate the event set up. Oysters, and snack foods were provided and Yukon Sourdough Rendezvous and Yukon Brewing provided beverages (non-alcoholic and alcoholic). Despite disruption for visitors and issues with Tents and Events, the overall event was successful. The Fishladder could be used to host special events again, provided that setup and take down happens after hours. Having additional covered areas would also be beneficial for events during poor weather.

Canada Day

About one week prior to Canada Day celebrations it was decided to decorate the interpretive centre and serve carrot cake provided by YFGA. The event was also advertised on Facebook. The day was however slow with a total of 109 visitors including adults and kids counts. In future, it is probably not worth planning anything and it might be beneficial to close for the day. Staff expressed dissatisfaction with not being able to attend the celebrations and not receiving holiday pay as they hadn't worked enough days yet.



Elders Visits

Starting July 5 the Fishladder had Elder visits on Wednesday and Friday from 1 to 3 pm. Wednesdays Julia Broeren from Ta'an Kwach'an First Nations came by and on Fridays, Sarah Snowdon from Kwanlin Dun First Nations. Elder Visits really aroused interest from visitors especially when bannock and soapberry ice cream was offered. Fridays were more crowded than Wednesdays and brought more visitors into the First Nations tent.

YEC 30th Anniversary Run

On July 28 Yukon Energy Corporation had their 30th year anniversary and organized a run over the dam. YEC provided the leftover cake, apple and orange juice from the run across the dam, to visitors at the Fishladder. Several staff members took advantage of the event and went across the dam.



Visitor Appreciation Night

On Wednesday August 16th a Visitor Appreciation Night was held at the Fishladder from 5 to 9 pm.

Preparation

In preparation for this special event Emilie, Ross and Elizabeth sent out requests to local businesses about one month prior asking for donations to be handed out as door prizes during the event. A total of 15 businesses gave out prizes or gift certificates. By putting all of the prizes together in nice packages a total of 31 draws were divided into an early and late draw.

Elizabeth and YEC advertised Appreciation Night on Yukon Energy's website and Facebook starting July 4th. In addition, YEC paid for Facebook advertising a few weeks before the event. Several other posts were made by Elizabeth on Facebook to remind followers of the event. Ross and Brittany hung posters around town in strategic places like the Canada Games Centre, Klondike Rib and Salmon and Whitehorse Library. Staff also mentioned the event when doing interviews for radio stations and newspapers. Staff members also told visitors about the event regularly.

Emilie prepared a staff schedule for the night, allowing everyone to rotate stations every half hour; front desk-ticket booth, gift shop, food table, outside-boardwalks. All staff worked the evening.

YFGA ordered cakes (2 carrot, 1 chocolate, 1 vanilla) for the event. In past, one large cake had been ordered and while it was delicious, it was too expensive. I would also recommend several smaller cakes next year, as they took up less room on the table. Four cakes were enough, as there were only a few slices left at the end of the night.

Catering supplies were bought or borrowed from YFGA and YEC or reused from last year's Appreciation Night. The cold buffet included pre-made food trays (deli meet, cheese, fruits, and vegetables) from Independent. The event was also planned to be eco-friendly, with supplies being mostly compostable or recyclable.

Shortly after the event's start the breaker was tripped after plugging too many devices. The till was reset due to the power outage, which complicated the cash out that night.

The Event

Appreciation Night this year was a great success. The pre-made schedule was handed out to staff, so everyone knew where they needed to be. The outhouses were also checked every half hour by alternating staff. Overall, visitors and staff thought the event was well-organized.

Staff were positioned: at the entrance to welcome visitors, keep count of visitors, and to give out raffle tickets; at the food table to rearrange the buffet; behind the gift shop; outside answering questions and looking out for people; or in the salmon sort.

A Thank You poster was displayed at the entrance thanking all of our awesome sponsors.



Signs were printed out and posted around the facility to tell visitors about the draws schedule. The draws were outside by the First Nations tent and two staff members were announcing the winners at 6 and 8 pm. The early draw had items targeted towards children and the adult prizes were in the second draw. The location was clear and the prizes were already sorted in order of announcement. This also encouraged visitors to go outside of the facility. Next year, the draws should be completed similarly, but the second draw should be earlier, after the salmon sort (around 7 pm).

During the event, YEC presented Lawrence Vano with an appreciation of his service award. Staff were very happy to be able to participate in the event.

Ross, Emilie and Lawrence did the salmon sort this year scheduled from 6:30-7:30. The sort lasted 30-45 minutes. Brood stock was also collected and taken to the hatchery.

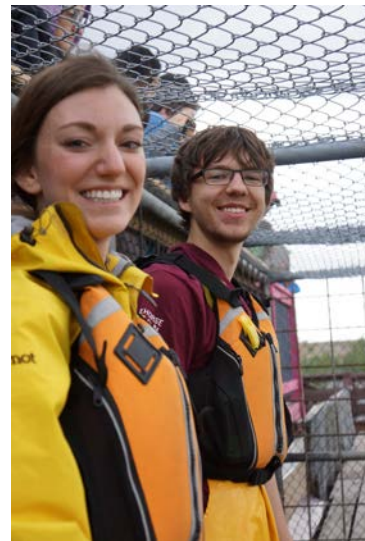
Janet Patterson from YEC was invaluable, helping with the food setup and restocking all night. Warren and Lawrence also provided assistance for the sort and cleaning up at the end of the event. Gord Zealand (YFGA) made the arrangements for the cake and dropped it off.

The salmon migration game and the letter search scavenger hunt game were given out to children and their families to complete outside. They could then turn in the completed forms to receive a sticker (provided by Teslin Tlingit Council). Only a few families took advantage of this, as they were busy eating food, looking at salmon and participating in the draws.

The Appreciation Night event provided a lot of sales and donations. The day's total sales and donations was \$766.40. The total number of visitors for the event was 257 adults and 96 children (653 for the day). Last year's total donations and sales for Appreciation Night (including the day's sales and donations) added up to \$630.55 and the visitor's total for the night was over 500 people. Despite having less visitors, there was over \$150 more donations and sales.

The donations and sales were counted the next day so staff could finish on time and get to the staff dinner at Boston Pizza, courtesy of YFGA. Stephanie Lyons (YFGA) joined us for dinner.

After the event, the Thank You Poster was posted to Facebook thanking all the wonderful visitors and sponsors with all sponsors linked (free advertising for them) as a thank you. In addition, Thank You cards were designed and mailed out to sponsors.



Chinook Salmon

Chinook fry had a high occurrence of leeches (*Piscicola milneri*) early in the season. To further explore this and provide staff with an additional opportunity to handle Chinook salmon, a collection license was applied for. In mid-season, a collection license was authorized by DFO for staff to collect samples of Chinook fry in the fishladder for sampling. By the time the collection license was obtained and enough staff were present, Chinook fry were rarely observed in the fishladder and no Chinook were sampled.



The 2017 Chinook salmon run was expected to be below average (70,000-97,000) and similar in size to 2016 according to the Joint Technical Committee. The U.S./Canada Yukon River Panel has established a spawning escapement goal of 42,500-55,000 Chinook. With a similar run size to last year, it was expected that around 1,500 to 1,600 Chinook would return to the Fishladder.

The first Chinook salmon was spotted at the entrance of the ladder, on the viewing camera, on July 23. On July 25 the first Chinook salmon entered the viewing area, a healthy medium, wild, female.

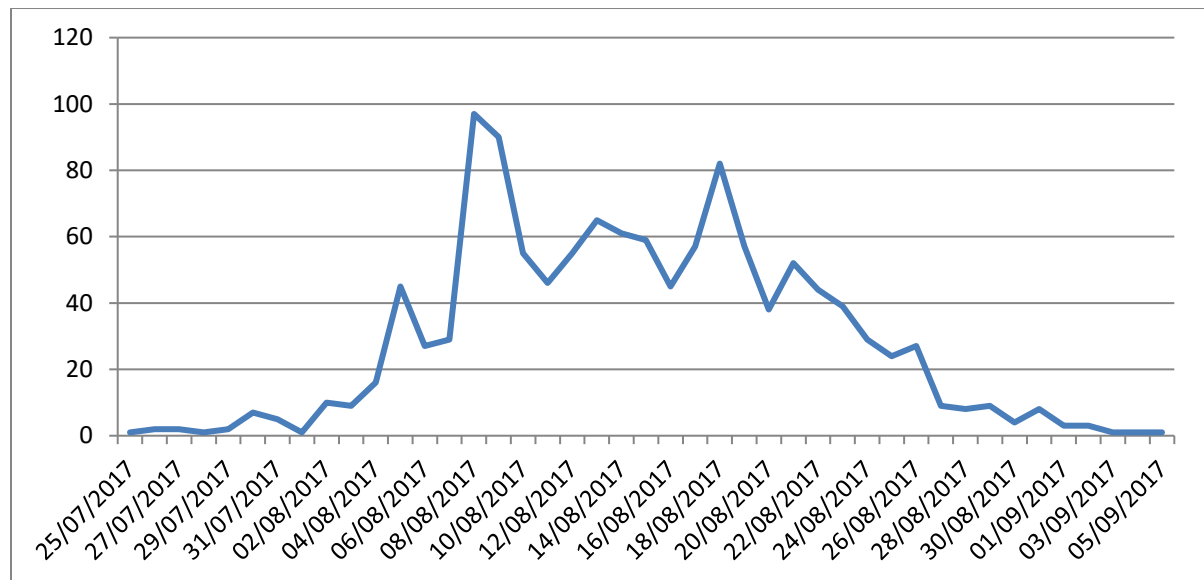


Figure 1. Daily Chinook salmon passage at the Whitehorse Rapids Fishway in 2017.

As of September 7, we have recorded 1,226 Chinook. This was lower than the last year (1,556) and the estimate provided by Trix Tanner (Fisheries and Oceans Canada) of 1,450. The run was composed of 61% wild. This is higher than expected, as the average is around 50%. The female proportion was considerably higher than last year, 26% in 2017 and 18% in 2016.

	Male	Female	Total
Wild	523	227	750
Hatchery	382	94	476
Total	905	321	1226

Lawrence and Warren (Whitehorse Rapids Fish Hatchery) collected broodstock throughout the run. A total of 98 Chinook were taken (33 wild males, 24 wild females, 25 hatchery males and 16 hatchery females). Staff assisted with egg and milt takes and fertilization at the hatchery, when possible.

Acoustic Tagging Program

An acoustic tagging program was conducted at the Fishladder in partnership with Carleton University (CU), Canadian Wildlife Federation (CWF), Carcross and Tagish First Nations (CTFN) and Ta'an Kwach'an Council (TKC). The study was a pilot to determine unknown, upstream spawning areas and to determine the fishladder's efficiency. Most of the planning was completed prior to May but Elizabeth attended a planning meeting in May as a YFGA representative. During the meeting Elizabeth was able to provide several recommendations to Nicholas Lapointe, including recommendations on the placement of the receivers, net location and net selection.

The tagging program started when both Nick and James Sebes (CU) arrived at the Fishladder for a meeting with Lawrence and Elizabeth. During this meeting, logistics were discussed and recommendations were shared with them regarding release locations and net handling. They later completed the safety training and installing receivers (both onsite and offsite). Nick remained on site for the first tagging event before departing. After Nick's departure, TKC and CTFN representatives (Karly Knight and Jenna Duncan) assisted James.

Over the course of the season, the tagging procedure and fish handling improved greatly. Initially tagging was completed in the afternoon (Chinook were held from about noon until 1 or 2 pm). After about the half way point, Lawrence decided that the tagging should be completed in the morning to reduce the stress to the population. Netting is stressful for the Chinook, causing them to hold immediately above the front gate for up to a few hours. By tagging in the morning, only one netting event was needed in the day. This was a little difficult as the Hatchery staff were also taking broodstock at this time.



Hatchery staff did a good job of balancing their needs with the tagging schedule which specified a set number of hatchery or wild, females or males each week. While this arrangement did decrease the stress on the Chinook population, it had a negative impact on staff. Staff's participation in handling Chinook was greatly reduced. The morning sort was their one opportunity to handle salmon. With the tagging crew involved, this opportunity was reduced considerably. The up side of this, was that staff were able to whiteness (not assist) an acoustic tagging project.

In future years, I do not know what the best solution to this conflict of interest will be. Completing two sorts, is very stressful to the Chinook but only conducting one sort limits staff exposure to handling Chinook. If the tagging project does continue, perhaps alternating between one and two sorts could be completed to maximize staff's exposure to handling Chinook while still lowering the stress to Chinook. If Chinook numbers allowed, this could be accomplished by only conducting one sort during low run numbers (shoulder season) and two sorts during the few weeks around the peak.

Freshwater Fish

A decent number of freshwater species used the fishladder throughout the summer season and were approximately recorded each day by staff.

The most common fish to go through the fishladder this season was wild Chinook fry (281) despite not being legitimately a “freshwater” species. No hatchery Chinook fry were seen. Following the Chinook fry, there were 150 graylings, 73 longnose suckers (predominately juveniles as only one adult was seen), 56 rainbow trout (these numbers are elevated due to ‘Frank’, see below), 26 lake trout, 25 whitefish, 11 slimy sculpins and 4 juvenile pike.



In 2017 there might have been one adult longnose sucker in the fishladder. This was very unusual and in discussions with Lawrence, could be related to the removal of the holding pens. The other unusual occurrence was ‘Frank’. When the fishladder was refilled, after repairing a baffle, a rainbow trout took up residency in the viewing area. When it first arrived, the left maxillary was hanging from its mouth (a suspected injury from a hook). Over the next few weeks the maxillary atrophied and fell off. Due to this injury, staff were able to identify this specific rainbow and named it ‘Frank’. Frank at one point jumped out of the fishladder onto the walkway but was able to flop back in, as reported by a visitor. There was no indicator as to what prompted it to jump out of the water. It seemed to prefer the area immediately around the front gates and was able to get through the gates on its own. Over the next month and a half, it grew considerably (maybe an inch in length and its girth doubled) and stuck around during the Chinook run. It was a welcome addition and provided viewing and teaching opportunities to staff and visitors.

Revenue & Donations

The total sales revenue for the 2017 season was \$10,312.75. This is similar to last year (\$9,014.25). The top five sales this season were: shirts, hats, books, beverages, and pins. The shirt order was late getting in and I suspect shirt sales would have been higher if the order had been on time. A shirt order was placed at the end of the season, for next spring. Quotes were requested from other suppliers and one was received that might be less than Terra Firma. Next season I would recommend pursuing this avenue. A digital copy of the design will be needed and a new quote with better quality shirts should be requested. In 2017, ATC t-shirts were ordered. While they were cheaper, I would not recommend going with them again. The material was a little too thin and the silk screeners commented that it didn’t hold up as well as the Gildan t-shirts. A few defects were also noted in the shirts.

Table 1. Whitehorse Rapids Fishway revenue in 2017.

Item	June	July	August	September	Season Total
Adopt-a-Fry	\$3.00	\$66.00	\$63.00	\$9.00	\$141.00
Pins	\$112.00	\$132.00	\$136.00	\$4.00	\$384.00
Books	\$100.00	\$130.00	\$205.00	\$50.00	\$485.00
Shirts	\$880.00	\$2,368.00	\$2,680.00	\$436.00	\$6364.00
Hats	\$280.00	\$640.00	\$940.00	\$40	\$1900.00
Belt Buckles	\$60.00	\$60.00			\$150.00
Beverages	\$89.25	\$119.00	\$202.75	\$15.25	\$426.25
YFGA Postcards	\$8.25	\$11.50	\$13.50	\$1.00	\$34.25
Stickers	\$19.25	\$1.75			\$21.00
Family Pass	\$30.00	\$60.00	\$40.00		\$130.00
YEC Postcards	\$12.50	\$39.00	\$31.75	\$1.00	\$84.25
Patches (Crests)		\$10.00	\$70.00		\$80.00
YEC Posters		\$40.00	\$73.00		\$113.00
Total	\$1,594.25	\$3,707.25	\$4,455.00	\$602.25	\$10,312.75

The total amount raised through donations this season was \$23,174.95, not including Holland America's donation (approximately \$672). This is similar to last year (\$22,389.39). Donations averaged to \$1.04 per visitor.

Visitors Totals

This year a total of 22,290 people visited the Fishladder. This was 1,331 more visitors than last year. As in past years, German was the second most common language spoken (after English). It would be beneficial to hire German speaking staff if possible. French was the third most common language spoken by visitors. There were four staff that spoke French and tours were provided daily in French. Visitor numbers peaked on Visitor Appreciation night and steadily decreased after that. Visitor numbers also appeared to be correlated with weather; on nicer days, there were more visitors than on miserable days.

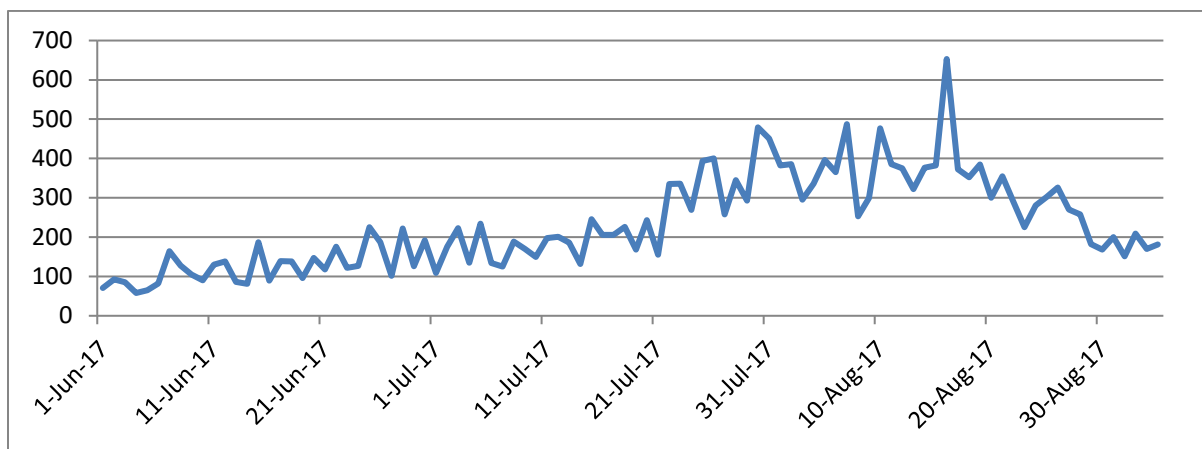


Figure 2. Daily visitors to the Whitehorse Rapids Fishway in 2017.

Communications

Staff conducted several interviews throughout the season. As the Chinook arrived, there were almost weekly requests for interviews from CBC radio, CKRW, What's Up, and Whitehorse Daily Star. In addition to interviews, staff posted almost daily onto our Facebook page.

The first Facebook post was on May 17 advertising the opening on June 1. A breakdown of posts can be seen in the below table. Posts engagement is tracked on Facebook. Post usually reached less than 1,000 people, but several posts exceeded this. Posts that reached more than a 1,000 people included showing the water current through the fishladder, when beaver and a muskrat were spotted, leeches, underwater camera shot of the first Chinook to arrive at the entrance, the first Chinook in the Fishladder, the contest winner, Chinook photos, pike photo, the new piano, visit with an Elder, and the closing posts. The post with the largest reach was the first photo of a Chinook (underwater camera) with an estimated reach of 11,500 people. The next highest reaching post was a invitation to come to the Fishladder to see the Chinook in August. For this post, free advertising (\$30 coupon) was used. This advertising proved to be very successful and I would recommend in future years paying to advertise a few events, such as Elder visits, improvements to the facilities, or unusual sightings. YEC already pays for advertising for Appreciation Night, but it would also be helpful to advertise the event on our Facebook page too.

Table 2. The number of Facebook posts by total number of posts, number of videos, events and contests in 2017.

	May	June	July	August	September
Posts	5	16	33	28	7
Videos		6		4	1
Events			2	1	
Contests			1		

Facebook was also used to host a contest to guess the date (and time) of the first Chinook in the Fishladder. A total of 7 comments on our Facebook page and YEC received 41 comments. While this is not a large response, it was easy to do and only cost a shirt and poster (\$20). The winner picked out a t-shirt for her daughter, and brought the family down for a visit. I would recommend hosting this contest again next year.

There is also an Instagram Account. It has not been used for several years and was not used this year. While it would likely reach a younger crowd, it was logistically difficult, as posts can only be made from cell phones. Staff had limited data plans and did not want to risk additional charges, so it was decided not to use it. I would suggest trying it next year, if an arrangement could be made to cover additional data usage charges.



Recommendations

Safety and Wildlife

1. New rope to lift front gate at the front of the viewing chamber needs to be purchased as it is too worn, will likely give out next year
2. Replace scale and otolith slides (shattered and sharp)
3. Grit or anti-slip material for entrance ramp, as it is very slippery with frost. This addition would also be good for the boardwalk
4. Replace quickdraws (carabineers connected by thick material) at the bottom of the fishladder for the safety ladder as the material has been weakened from sun and the weather
5. I strongly recommend additional speed bumps around the facilities. One near the entrance of the facility and a second one, near the outhouses. I have stepped out of the outhouses and had a vehicle zoom by, too close for comfort on several occasions this year.
 - a. I do not believe additional signs will work in this situation
6. Remove toe-kick boards from the bottom of the fishladder. These offer little safety benefit (prevent equipment falling off the walkways) but does create a hazard if using the safety ladder. If someone fell in and the safety ladder was deployed, they would not be able to fit between the walkway and the bottom 'hand rail' with a PFD on (with the toe-kicks in place). Instead, they would have to climb up and squeeze between the top and middle 'hand rails'. This would be dangerous as there is only round metal (slippery) to hold onto. Anyone making this trip will have cold, unresponsive hands and this will increase the likelihood that they will slip and fall back into the water
7. Purchase another set of Motorola waterproof walkie-talkies. They have a lock out feature that would be extremely helpful in an emergency situation. Occasionally there are two groups on the fishladder and having additional waterproof walkie-talkies would be prudent. Also the non-waterproof walkie-talkies inside are at the end of their usable life.
8. Repair the chain-link around the mammal platform (with addition wire) so that mammals will not fall to the ground, possibly injuring themselves. The current rope will not withstand a beaver or muskrat's teeth
9. Remove the security camera at the front entrance to prevent birds using it as a nest site
10. Paint metal grates at the bottom of the fishladder orange, before the water is added
11. Get a new desk, with better ergonomics
12. Update and connect EXIT signs
 - a. Also remove push exit buttons that don't work

Outhouse

1. Replace/fix roof on outhouses – damaged from rocks being thrown from the hill top and water damage
2. Repair first outhouse door/trim. Currently a piece of metal allows the door to lock
3. Retouch large metal Chinook in shed to hang on outhouse. Will need to trim bushes back a bit
4. Purchase new padlocks for outhouse pump hatches. Currently one padlock is missing and the second padlock is difficult to open. Recommend purchasing outdoor padlocks.
5. Remove toilet paper at the end of the season (squirrels make a mess)

6. Remove hand sanitizer at the end of the season (winter temperatures are outside the recommended storage range)
7. Add a screen below the toilet seat to prevent garbage and debris from plugging the pump hose. Staff could use a claw to remove the debris/garbage
8. Purchase new garbage bins that attach to the wall. This year, someone pooped and peed on top of the garbage (small and on the floor). This might help improve a reoccurrence

Facility

1. Move Chinook display over to wall in front of the merchandise area to help with visitor flow (current location creates a bottle neck at the back door)
2. Purchase smaller Chinook tank to place in shelf location (remove), so all 3 fish tanks will be in a row
3. Build 2 new metal stands (Kokanee and new Chinook tank) and insulate bottom with Styrofoam
 - a. Kokanee stand needs to be replaced as the current stand is starting to sag at the edges (will eventually weaken and damage the tank)
4. Make 3 new fish skirts (matching) that attach inside each support (stars in below photo). This will improve air flow (cooling) over the current design of wrapping the skirt around the tank



5. Replace donation box outside (lock comes loose/broken) and sign is dated
6. Frame in unneeded door (more uninterrupted space for displays)
7. Fix outside door (in office) so it can close without locking it

Floor Replacement

1. Remove wooden 'stand' under kokanee tank
2. Remove shelf and floor for the new Chinook tank

Updating Information Displays, Placements of Information and Visitor Flow

1. Continue rearranging the facilities to organize Chinook displays on one side of the building and fresh water displays on the opposite side
2. Continue replacing signage to a consistent format
3. Continue de-cluttering and streamlining the facility
4. Add Discovery Boxes and flip charts with additional information
5. Consider adding Salmon stickers (vinyl) to the floor leading to the back door

Facility Grounds

1. New deck to cover the mess from removing the holding chambers
 - a. If a roof was added, this area could be great for holding events and would provide more space for Appreciation Night
2. Paint upper deck to match the boardwalks
3. Paint the non-PWF boards (handrails) along the guardrail on the fishladder, to preserve the wood as it is starting to weather
4. Replace façade wood on shed
5. Fill in the puddle at bottom by salmon art. With a lot of rain, this puddle runs across the path
6. Sign saying 'look down', so visitors know where to look for the Chinook milling at the entrance
 - a. Add small cut-outs in chain-link fence to allow visitors to take videos and photos of milling Chinook without the chain-link obscuring the images
7. Replace blue material in FN tent (a squirrel put a hole in it this year and it is starting to get thread bare)
8. Replace aging flower containers. They are falling apart and likely won't be salvageable in 2018. It would be great if unique containers could be made again.

Miscellaneous

1. New decorative stamp with a salmon for stamping Yukon Gold Explorers Passports
2. Add direction sign around bridge area to help direct visitors
3. Buy new battery for drill
4. Change sign upstairs that says all females die after spawning, visitors are always asking if the males die as well, to all salmon die
5. Phone; add long distances as most employees have cells with other area codes. I used my personal cell continuously to phone employees and to arrange and conduct interviews. While I did not incur additional charges, this would prevent additional expenses for employees. Also, while I was not here, other staff did not realise there was no long distance and could not contact other employees to alter the schedule
6. Take freshwater fish video for YEC website (approximately mid-July) to highlight other species
7. Continue highlighting freshwater species at the Fishladder. It would be nice if a more involved partnership could be developed with Yukon Government. In the past they used to host events here (how to fish, how to fillet fish, etc.). It would be great to offer these events again
8. Purchase waterproof camera with float, so staff can bring the camera on the fishladder without risking their own. This should increase the photos being posted to Facebook
9. In 2018, again ask for quotes for the shirt order from Terra Firma, Green Screens and Yukon Apparel. Order Gildan (or similar quality) shirts

10. Host a 'Guess the Date' Facebook contest for the first Chinook. The winner gets a free t-shirt and poster.
11. If Chinook numbers allow, and the acoustic tagging program continues next year, consider alternating between 1 and 2 Chinook sorts, to maximize staff's exposure to handling Chinook while minimizing stress to the Chinook population