



Alouette River Management Society 2016 Annual Report

Prepared for the City of Maple Ridge
Prepared by Greta Borick-Cunningham,
Executive Director, ARMS

Date: 26 January, 2017

This report is prepared with the generous funding provided by the City of Maple Ridge. The Alouette River Management Society reserves the right to all photographs and content. For any communications enquiries, please contact Sophie Smith, sophie@alouetteriver.org

Environmental Education 2016

ARMS educational programs were very well received within School District #42 and in the community in general. ARMS offered a range of educational programs including spring break and summer camps, the extremely popular “It’s a Bug’s Life” pollinators program, habitat programs, watershed education and hatchery tours. ARMS revamped a program called “Trees of Life” which focuses on the forest creatures of the Lower Mainland region and familiarizing the public of our native animals and the tracks they leave behind. This program was loved by many and was requested 80% more than the previous years.

Spring break camp was a lot of fun for everyone! This year ARMS offered 2 separate camps running from 14-18 March and 21-25 March. The themes this year were “Splatoon” and “Mario Maker Camp”. Both camps were new and fresh. All camp activities were held in the Rivers Heritage Centre or in Allco Park. The children had opportunities to learn about nature through play-based and craft-based activities. Some of these activities included geocaching in Allco Park, planting and nature photography and enjoying creative play! The turnout for each camp was satisfactory to run the program, the response from children and parents was very positive. ARMS was greatly assisted by High School volunteers once again.



Spring Break Mario Maker Camp nature photography

During July and August, ARMS offered 5 summer camps for children. Three Minecraft camps were sold out with kids on waiting lists each time and the themes this year were “Minecraft Camp” “Minecraft II: Return to Nether” and “Minecraft III: The End”. ARMS also held “Survivor: Allco Park” and “Animal Crossing” camps with both intakes having enough children to run the camps but neither were full.



Eco-camp activities including Yukon Dan Gold Panning

ARMS hosted 2 UBC practicum teachers in the spring at the Rivers Heritage Centre. This was a great help to ARMS and a valuable learning experience for the practicum students. The Teacher Candidates assisted in delivering some educational programming and one spoke fluent French which was a great asset in the French immersion classes.

ARMS purchased 2 flow hives thanks to a generous grant from TD FEF. These hives assist with honey harvest and brought a lot of joy to staff and members. The honey was exceptional and came out in all different tones and colors representing the different flowering seasons. The hives have windows allowing the public to view the bees as they work. ARMS staff learned a lot as we struggled with a varroa mite outbreak and a true case of “Zombie”.



ARMS new flow hive and super-delicious honey

ARMS new Litter Heroes Program is a huge success. We have more than 340 members and growing quarterly. This program is in much demand and ARMS brought in a funder for the program this year. AJM Disposal Services has agreed to sponsor ARMS to the amount of \$1200 annually for our Maple Ridge's Litter Heroes Program.



Maple Ridge Litter Heroes out and about in the community

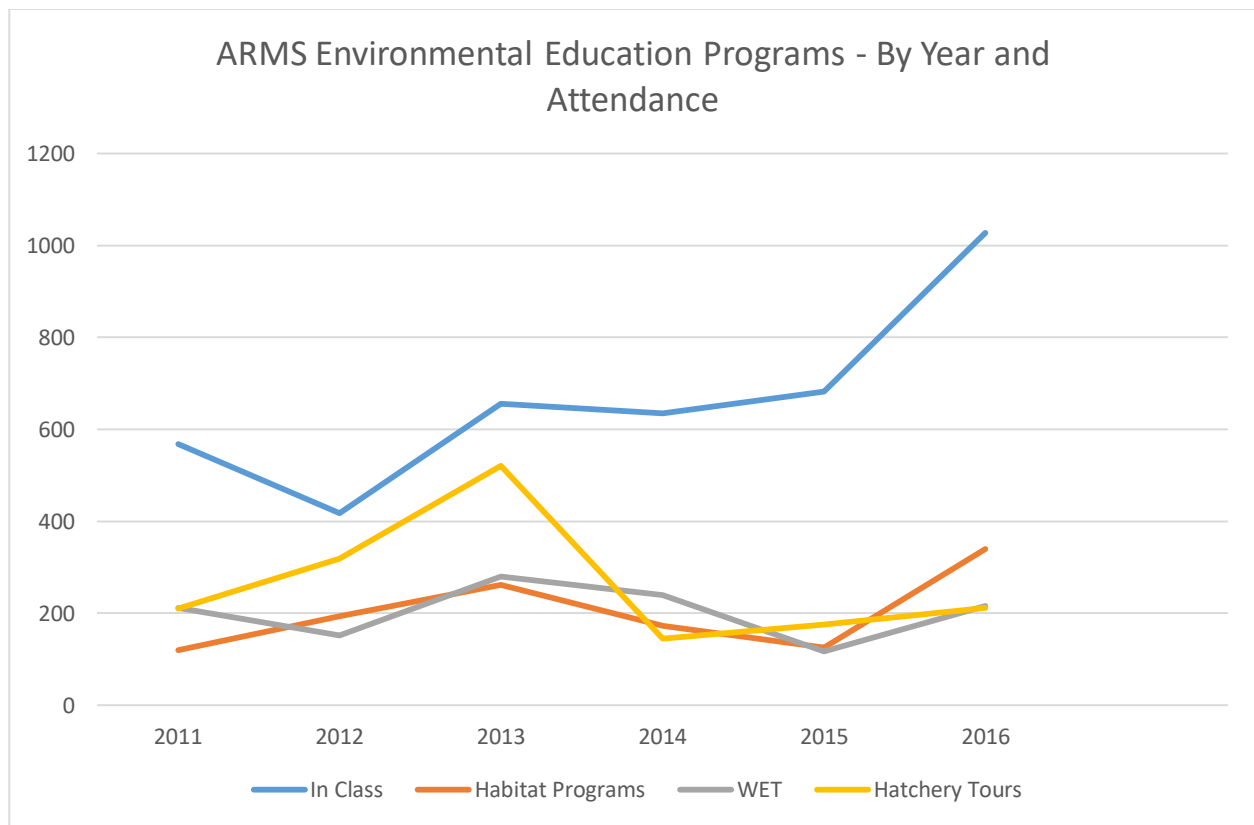
Due to the recent changes in the BC School Curriculum requiring more experiential delivery of classwork, ARMS environmental education programs are in high demand! ARMS has been ahead of the education system in offering hands-on, interactive, play-based education for children of all ages. Teachers see the value in our programs and workshops, therefore there is an increase in demand districtwide.

ARMS EDUCATION PROGRAMS	2016	2015	2014	2013	2012	2011
In Class	1027	682	635	656	418	568
Watershed Education Tours (WET)	216	117	239	280	151	212
Hatchery Tours	212	175	145	520	319	210
Habitat Programs	340	125	172	261	194	120
Environmental School	60	75	80	90	58	70
Restoration	907	1346	1283	1520	103	165
Community programs *	1509	1453	621	0	0	0
Eco-Camps	109	109	195	123	57	47
TOTAL	4379	4082	3370	3450	1388	1705
Volunteer Hours (camps, events, salmon surveys, etc.)	2685	2153	2110	1493	1445	2065

In addition to programs run for School District #42, our education programs are utilized by home school groups, after school groups, preschools and School District #43. ARMS staff are often contacted by home school groups to enhance key lessons and provide a venue for social experience. Our school programs are developed in accordance with the Integrated Resources Package through the BC Ministry of Education. Using the guideline ensures our programs are covering the necessary topics for each grade.

	In Class #students	Habitat Programs	WET	Hatchery Tours
2011	568	120	212	210
2012	418	194	151	319
2013	656	261	280	520
2014	635	172	239	145
2015	682	125	117	175
2016	1027	340	216	212

Overall, ARMS staff delivered many programs to over 4379 students and community members this past calendar year. ARMS is pleased to see this strong and visible incline of people reached each year.



With the continued support of the City of Maple Ridge, ARMS is able to deliver interactive, relevant, and engaging educational programming to the students in Maple Ridge. Raising environmental awareness in our youth so that they may become better stewards of the Alouette Watershed and their local environment is one of ARMS' key priorities.



Learning through craft about salmon with ARMS salmon bead booklets



Getting up close and personal with youngsters and young fry – ARMS hatchery tour



ARMS' Survivor Camp buddies – getting physical with activities in Allco Park



Dissecting owl pellets during ARMS' OWLES educational program

Maple Ridge Adopt-A-Block Program (AAB) 2016

In 2016, Maple Ridge Adopt-A-Block had 22 new individuals or family memberships, 1 new business memberships and 1 new charity membership join the program. To date, there are currently 55 actively enrolled members to the Adopt-A-Block Program. These 55 members are currently monitoring more than 70 sections of roadway in Maple Ridge, as some adopt more than one section and others choose to extend the boundaries of their adopted locations.

AAB also manages a new program for children ages 3-8, Maple Ridge's Litter Heroes. We currently have 373 registered members. The Litter Heroes Program hosts four litter pick up events a year 1) Maple Ridge Earth Day at Memorial Peace Park 2) Father's Day Fish Release at Maple Ridge Park 3) Ridge Meadows Rivers Day at Allco Park 4) Christmas in the Park at Memorial Peace Park.

- *Total registered members in Adopt-a-Block: 55*
- *Total adopted blocks, parks, trails and streams: 70*
- *Total registered Litter Heroes: 373*

There continues to be expressed interest by Pitt Meadows residents with regards to joining the program. At this time, their community service is encouraged for the sake of improving Pitt Meadows neighborhoods, however the program is unable to provide equipment or City services to these individuals unless they decide to adopt an area of the City of Maple Ridge. One of ARMS and AAB's goals for 2017 is to approach the City of Pitt Meadows to offer the AAB program with the intention of securing a "fee for service" agreement to expand Adopt-a-Block into Pitt Meadows.

New Partnership

The Alouette River Management Society and Maple Ridge Adopt-A-Block established a working partnership with the Sitter 604, Aryan Saed, to engage community members in local events he hosts in the Albion area. This is an excellent relationship for Adopt-A-Block to have because it creates strong inter-community ties while establishing new avenues for individuals to advance Adopt-A-Block initiatives to better the City of Maple Ridge through collaborative efforts.

Signage

A long withstanding feature of the program is the installation and maintenance of street signs for participating groups and/or businesses. This feature has been enhanced in 2016, as signage is now available for individual and family program members as well. The decision to offer signage to individuals and families was made to meet the standards of other similar programs in the Lower Mainland, including Coquitlam and Mission nearby, who provide signage to any Program member.

It must be noted that municipal street signs of recognition are installed only upon the basis of explicit signed consent by Adopt-a-Block members. Thus, current quantifiable program signage may not accurately reflect the membership base.

Equipment

Garbage grabbers and our reusable bags can be signed out by members at two locations: the Maple Ridge Leisure Centre front desk, and the ARMS office at the Rivers Heritage Centre. This equipment can be

kept by members for the duration of the adoption commitment period or until members decide to opt out of the Program.

Events, Activities, and Group Cleanups

The Adopt-A-Block Program organized and/or participated in 17 different activities in 2016. These include:

1. ARMS Annual General Meeting (open to the public), February 6th, 2016
2. Chapman Creek Hatchery Tour, February 17th 2016
3. Meadow Ridge Rotary Club – March 1st 2016
4. Litter Heroes Classroom Program and litter pick up:
 - a. Feb, 18, 2016 – Worms and Wee Ones Preschool (28 children)
 - b. March 29, 2016 – Kids by Design Preschool (36 children)
 - c. March 30, 2016 – Kids by Design Preschool (40 children)
5. Community Builders scheduled for:
 - a. March 10th at 12:15pm (Cancelled due to storm event and power outages)
 - b. March 18th at 7:15am
 - c. March 24th at 12:15pm
6. Annual Nite Hike on the Dyke (Scouts), April 16, 2016
7. Pitt Meadows Earth Day, April 22, 2016
8. Maple Ridge Earth Day, April 23, 2016
9. Father's Day Fish Release, June 19, 2016
10. Community Builders:
 - a. April 1, 2016
 - b. April 15, 2016
 - c. April 29, 2016
 - d. May 13, 2016
 - e. May 27, 2016
 - f. June 10, 2016
 - g. June 24, 2016
11. Redl Sports – Make a Difference Day, July 19th 2016
12. Country Fest, July 23rd + 24th, 2016
13. Haney Famers Market, August 6th 2016
14. GETI Fest, September 17th 2016
15. Rivers Day, September 25th 2016
16. Community Builders:
 - a. July 8, 2016
 - b. July 22, 2016
 - c. August 5, 2016
 - d. August 19, 2016
17. Christmas in the Park December 3, 2016

Promotion

Brochures were redesigned, printed and distributed at all the above events. A space in the Maple Ridge Library was also reserved for AAB where brochures can be made available to the general public.

An AAB poster was made by the program coordinator (see below) to put in public spaces and we secured our first spot in City Hall's lobby.

Adopt-A-Block is advertised frequently on ARMS social media, such as Twitter, Facebook, and Instagram.

Three advertisements were placed in print in the WhatsOn! Magazine.

Accessibility to Program Information

Adopt-A-Block registration packages and information are all available online at www.alouetteriver.org/adopt-a-block.



Adopt-a-Block volunteer

Adopt-a-Block

Adopt-A-Block welcomes everyone! Students participate to gain volunteer hours to graduate, retired individuals join to stay active in their community, families adopt together as a fun, constructive activity – the possibilities are endless. Keeping our community tidy makes Maple Ridge that much more beautiful to enjoy.



How does it work?

Adopt-A-Block involves collecting small amounts of litter on a monthly basis in your designated area. Associated with Adopt-A-Block are three other programs, including Adopt-A-Stream, Adopt-A-Park, and Adopt-A-Trail. Once your registration is approved you will receive an Adopt-a-Block heavy duty reusable bag, grabbers and safety vest. Adopt-A-Stream however, is slightly different, as you must be a certified Streamkeeper to register. It involves collecting litter as well as other stream activities, such as water quality testing and replacing invasive plants with native species.



LITTER HEROES

Does your child want to become more involved in the community and contribute to the Maple Ridge Adopt-a-Block Program too? If so, it sounds like you have a true litter hero on your hands. The Maple Ridge's Litter Heroes program is completely FREE and is designed for children ages 3 - 8. Each child that registers will receive a litter heroes bucket, litter tongs and a safety comic strip. We hold four annual seasonal events throughout Maple Ridge to target litter. Each litter hero that attends these clean up events will earn their very own super hero cape.



If you are interested in the Adopt-A-Block or Litter Heroes Program, contact us to register or learn more!
Your commitment and contributions will be appreciated by anyone or anything that calls Maple Ridge home.



Email: adoptablock@alouetteriver.org Phone: 604-463-9699
www.alouetteriver.org/adopt-a-block



From the Communications Desk 2016

2016 was a great year for the communications department at ARMS. Social media took off with Facebook receiving over 200 additional likes, now totaling 641 likes. This was accomplished by promoting our page through advertisements on the site itself and targeting the local population within a 20km radius. YouTube was also a great success as we have created an ARMS channel and created six videos which were uploaded and well received. Twitter and Instagram are a goal for 2017 which will also be successful as we have received a donation to purchase a tablet where all our social media forums can be accessed in one place. We will then enter the field where we will capture vivid moments and viewers/followers will feel as though they are out with us.

Different sections of the ARMS website were also re-vamped in 2016 including the home page, education and Adopt-a-Block sections. We will be continuing with the website into 2017.

ARMS was on the Earth Day planning committee again this year as the welcoming ceremonies coordinator. This event had a great turn out and was a lot of fun. We also attended the community events workshop put on by the City of Maple Ridge which was very informative and productive. The safety aspects of this workshop in turn helped with the planning of River's Day.

Successful Funding Applications for ARMS Projects 2016

1. City of Maple Ridge Parks & Leisure Festival grant - Ridge Meadows Rivers Day, \$1,500.
2. BC Hydro's Fish and Wildlife Compensation Program (FWCP) - Adult Sockeye Enumeration Project - \$16,360.86 (sockeye trap and truck).
3. Pacific Salmon Foundation (PSF) – Katzie Slough Blind Channel, \$1500.
4. HRDC Canada Summer Jobs – Two summer students for Environmental Education and Eco-camps, \$6270.
5. PSF – 232nd Street Channel Beaver box and outlet replacement project, \$6,550.
6. Province of BC - RHC roof replacement - \$21,000.
7. PSF – Scouts Nite Hike Lights - \$1,500.
8. BC Hydro's Community Event grant – Ridge Meadows Rivers Day, \$750.
9. Mountain Equipment Co-op – Charity of Choice - \$1275.
10. BC Community Gaming grant - \$52,000.

ARMS Environmental Projects in the Alouette Watershed 2016

Alouette-Innergex Off-Channel Habitat for Salmon

In the spring, Hemmera Environmental Consulting and Dillon Consulting representatives inspected the two completed off-channels and were happy with what they saw overall. There were many young coho fry present in both off-channels and even a couple of crayfish. Over the summer, ARMS made several trips across the river to assess the functionality of the coho overwintering off-channel including water quality testing. Our Environmental Projects staff were very diligent at keeping water quality records on both the main and smaller channel on the hatchery-side of the river. ARMS, BC Corrections, Hemmera and Dillon Consulting worked over the year together to improve the work done in 2015.

Innergex's VP for Environment, Matt Kennedy and new Environmental Monitor, Jackie Boruch visited the site on August 4 to see how the channels were functioning. Both were very impressed with the completed project and especially liked the fact that young coho were swimming around in the channels as we toured. With some of the remaining funds from last year's project, an interpretive sign was installed on the east side of the South Alouette near the second pond/channel system that was built. A memorial plaque for Jenny Ljunggren, ex-ARMS executive director, was also installed at this site on Rivers Day in September.

ARMS will continue to monitor the two over-wintering channels on a yearly basis to ensure that it is functioning well for juvenile coho. This project was an excellent opportunity to expand habitat for young coho on the South Alouette River which directly lost vital coho rearing areas with the construction of Alouette dam and the subsequent downstream development over the years. The two channels also serve as a great environmental learning experience for young children and adults who participate in the ARMS fish releases and Allco hatchery tours.



Wee coho fry!



Alouette-Allco-Innergex off-channel salmon habitat looking downriver



Coho rearing channel and Allco fish release site

Alouette Lake Fertilization

Fertilization of the lake is carried out each year from April to September. This project is supported by ARMS, BC Corrections, Ministry of Environment and BC Hydro. After an incident in 2014 when the old boat partially sank (no injuries or fatalities), a new boat was purchased by the Province and ran very well over the fertilization season according to Corrections. The new rig can hold almost the same fertilizer load as the old boat so this necessitates more runs up the Alouette Lake system (North and South lakes). However, as it is faster (taking a total of 10 minutes to get from the north end of lake system to south end) it doesn't take longer to complete the work overall.

This fertilization project is very important for the Alouette Lake to help return lost nutrients which would have returned naturally to the lake and forest ecology by way of returning salmon had there not been a dam there. This is one of the reason why ARMS, with the support of the City of Maple Ridge, is dedicated to seeing fish passage built on or around the Alouette Dam so that one day the Alouette River and Alouette Lake can be reconnected and all species of salmon can return to the lake for spawning. With the spawning and subsequent death of fish, the nutrients would be recycled back into the environment as a free ecosystem service.



Spiffy new fertilization boat!

Interior Lower Mainland Transmission line

After many meetings with BC Hydro, Golder and Associates, the Ministry of Forests, Lands, Natural Resource Operations and others including the City of Maple Ridge environmental staff, ARMS finally had success with BC Hydro offering to commit \$5000 to restore Clayton Creek. This creek had been impacted by a loss of vegetation in riparian areas along its streambanks. When the vegetation was removed during the expansion of the Interior Lower Mainland Transmission line in 2013, ARMS contacted BC Hydro. As Clayton Creek is a nutrient-bearing creek which runs directly into the South Alouette, ARMS took up the challenge to call BC Hydro on what we saw as unnecessary removal of native shrubs and trees which provide much-needed shade for salmonids, food through leaf drop, and bank stability.

In 2016, ARMS worked with Sterling Pearce (Natural Resource Specialist, Project Environmental Risk Management) and Matt Barnett on what restoration would look like. On June 9, BC Hydro staff conducted another site assessment of Clayton Creek with other vegetation biologists. The results were written into a site prescription for Clayton Creek including the installation of select larger native species in specific locations that would best afford coverage of areas along the creek which needed more shade and accompanying food sources. The draft plan was sent to the ARMS board for review, with good feedback coming from directors. The work was completed in October by BC Hydro and ARMS volunteers.

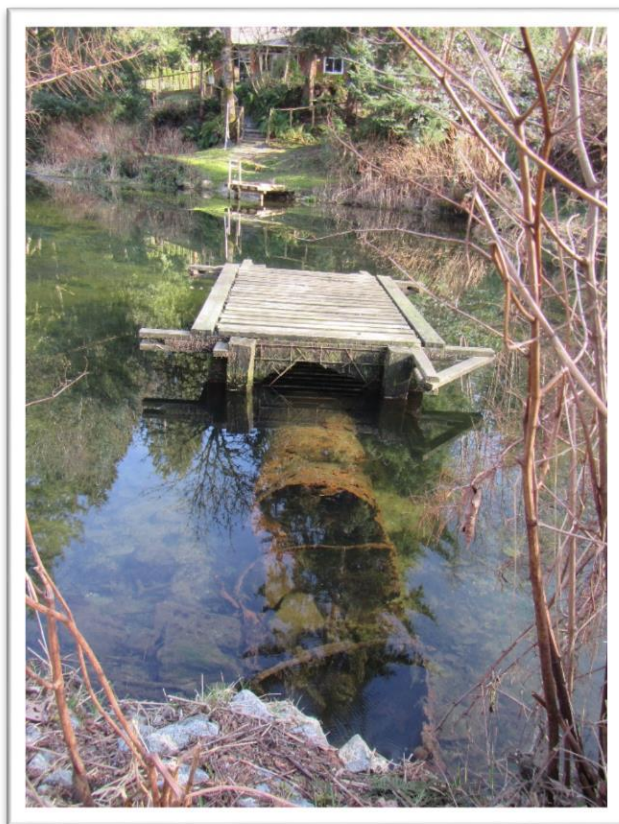


Large woody debris over Clayton Creek, swampy spots with some skunk cabbage, devils club, and creeping dogwood seen.

232nd Street Channel Beaver Box and Out-take Pipe Replacement

This channel is primarily overwintering habitat for salmon and has been a site which ARMS has monitored for many years with the assistance of community groups such as the 1st Laityview Scouts. The infrastructure project for 2016 was funded by the Pacific Salmon Foundation (\$6,550). On June 29, Department of Fisheries and Oceans and Mission Contractors removed an aging beaver box and rusted outlet pipe and installed a new unit. The work went very well with minimal site disturbance. As DFO's senior engineer, Jonathon Bulcock, was in charge onsite, we had no issues with the contractor and the fact that the work was completed outside of the official "fish window" meant we had to be extra diligent for environmental standards. ARMS clarified this with DFO prior to work commencing and received the all-clear.

The most upsetting thing to see was that the Japanese knotweed had completely taken over large portions of the top end of channel around the beaver box and retention pond. ARMS had included knotweed treatment in our grant proposal, however, there are current provincial restrictions on the use of glyphosate and stem injection for knotweed, therefore, no treatment of the invasive plant could be carried out this season. ARMS will attempt to do some invasive plant removal for scotchbroom in 2017 with a community group such as Scouts.



Old 232nd Street channel outlet



New and improved 232nd Street channel outlet

Alouette River Sockeye Reanadromization Project (ARSRP)

This year was a challenging year in our efforts to get fish passage over the Alouette Dam further ahead. As our 2015 application to operate the Alouette Sockeye Hatchery was turned down, ARMS and its partners had to reassess its plans for 2016 and this resulted in some very positive and strengthened relationship building with government agencies, Katzie First Nation and particularly with BC Hydro's Environmental Risk Assessment staff. In June and the beginning of July we spent time preparing for a comprehensive workshop on realigning our strategic goals and plan of action. The workshop was held on 13 July at Katzie First Nation Health and Community Centre, Pitt Meadows. The workshop was attended by 27 people representing government agencies Department of Fisheries and Oceans, Ministry of Environment, Katzie First Nation, BC Hydro, LGL Limited, City of Maple Ridge, City of Pitt Meadows, the Lower Fraser Fisheries Alliance, and ARMS. The workshop was facilitated by Compass Resource Management.

As a result of this workshop, ARMS and its partners, worked through the rest of the summer to prepare an 11-year plan for sockeye restoration including fish passage feasibility in the Alouette along with a powerpoint presentation which was delivered to the BC Hydro Fish and Wildlife Compensation Review panel in September for their information and input. This presentation hopefully provided the FWCP review panel with a firmer understanding of why the Alouette Sockeye hatchery is an important part of the process to restore sockeye to the Alouette watershed and as an interim step in helping to achieve fish passage over the Alouette Dam.

On behalf of the ARSRP group, ARMS submitted a funding application to run the Alouette Sockeye hatchery and to trap and transport the adult sockeye over the Alouette Dam to the Fish and Wildlife Compensation Program at the end of October 2016. We will learn if we are approved or not at the end of February 2017.



Alouette Sockeye Hatchery

Adult Sockeye Enumeration Project 2016

This project was funded by the BC Hydro Fish and Wildlife Compensation Program (\$16,360). ARMS and BC Corrections monitored the Allco fish fence from the end of June to the end of August to see how many adult sockeye returned to the South Alouette. In total, six adult sockeye came back to the fish fence, and although this number is very low, it is an increase from 2015 when only four adult sockeye returned. The returning salmon were in much better condition in 2016 as compared to 2015 most likely due to the spring and summer being less hot than it was the previous year.

As there have been concerns in the past about the dramatic drop in adult sockeye coming back as far as the Allco fish fence, ARMS asked the Ministry of Environment to conduct a downstream snorkel survey in July to see if any adult sockeye were holing up in deeper pools waiting to make their way upriver. There was only one sighting of an adult sockeye which was spotted approximately 100 metres downstream of the Allco fish fence. The main limiting factor to conducting snorkel surveys in the summer which is the return timing for sockeye, is that the Alouette River is very low which makes it almost impossible to snorkel down a good stretch. BC Hydro's dam trap contractor, reported no adult sockeye were caught in the trap at the base of the Alouette dam.

Of the six adult sockeye which did return to the Allco fish fence, all appeared in very good health and were transported successfully into the Alouette reservoir by BC Corrections. Genetic material was collected to sample for parentage and age of each fish with samples sent to DFO's Pacific Biological Station in Nanaimo. We are currently waiting for the results.



Sockeye number 3 caught at the Allco fish fence, July 2016

In support of this project and the Alouette Sockeye hatchery, ARMS environmental staff, Sophie Smith attended an intense week-long fish health management course at the University of British Columbia.

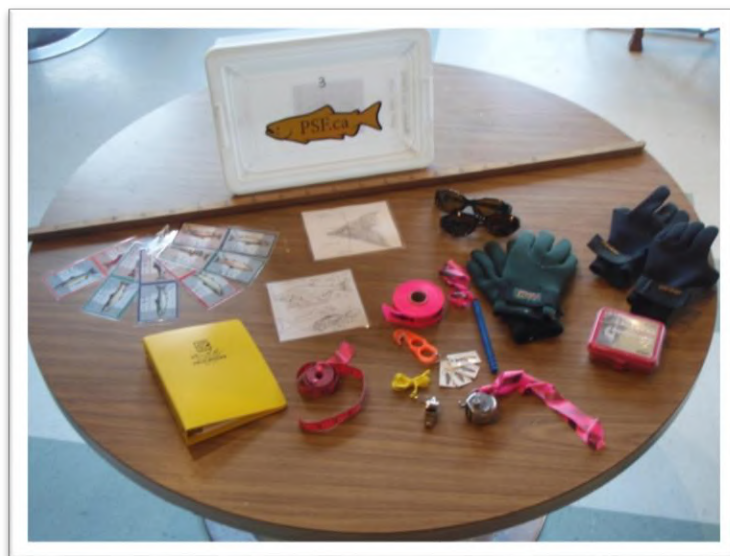
Dr. Paige Ackerman, DFO Regional Enhancement Biologist, and Dr. Christine MacWilliams, DFO Fish Health Veterinarian, facilitated this five-day intensive course about fish health management. This is a fourth year UBC course which is usually completed over a four-month semester. This course was offered free of charge to ARMS because of our involvement with Allco Fish Hatchery and our experience with the Adult Sockeye Enumeration project.

ARMS staff have been putting this knowledge to good use by developing better sampling protocols for the long term survivability of the fish in Alouette Reservoir. In preparation for 2017, if the sockeye hatchery runs, ARMS environmental staff will work towards developing a site specific Fish Health Management Plan which will result in best management practice guidelines for maintaining optimal health conditions for the Alouette Sockeye we hold.

Overall, the adult sockeye enumeration program continues on with 2016 being the ninth year of operation. The benefits of this program to the local community and Maple Ridge is multiple in that we are able to teach the history of the dam and its impacts especially on fish populations, the downstream affects to fish habitat, and to help strengthen the case for building fish passage on or around the Alouette Dam, an endeavour which the City of Maple Ridge supports.

Salmon Spawner Surveys 2016

ARMS conducted spawner surveys for the eighth year running in the same four tributaries within the Alouette Watershed. These tributaries include Coho Creek, Latimer Channel, Millionaire Creek, and the North Alouette River. ZoAnn Morten from Pacific Streamkeepers Federation came out and trained all nine volunteers who participate in collecting relevant data. These volunteers including five ARMS members, three BCIT students and 1st Laityview Scouts Coordinator who surveyed the tributaries for two months using the spawner survey kits provided by ARMS. Included in each kit: waterproof paper, note binder with loose-leaf waterproof paper, tally counter, fish knife, whistle, thermometer, two sets of propylene gloves, measuring tape, first aid kit, polarized glasses, clipboard, and tote.



Salmon spawner kit

Data sheets recorded at each site by the volunteers are submitted to ARMS and are recorded in the Streamkeepers database for Department of Fisheries and Oceans information. Local MP Dan Ruimy visited ARMS staff and volunteers at Millionaire creek one morning to learn how spawner surveys are conducted and the importance of these spawner surveys to the health and well-being of salmon and stream health in the city of Maple Ridge. Department of Fisheries and Ocean's Fish Stock and Assessment staff also came out for a visit to observe the salmon spawner surveys.



Local Pitt Meadows-Maple Ridge MP, Dan Ruimy visits Millionaire Creek

This year ARMS also created a youtube video explaining the importance of salmon and the role salmon spawner surveys play. See link here: <https://www.youtube.com/watch?v=zIWDlhkYuaA&t=47s>

Ridge Meadows Rivers Day 2016

The 23rd Annual Ridge Meadows Rivers Day was a great success! The day was beautiful, the fish were biting, and the crowds were happy and manageable! In total, we had approximately 650 people attend, 66 volunteers, 19 exhibitors (including 3 new exhibitors) and 7 ARMS directors. There was a wide range of environmental exhibitors on display, with some great fun had by all with rock wall climbing, carnival activities, and Kiwanis' great food!

The Fraser Valley Trout Hatchery kindly stocked the Allco fish pond with rainbow trout for kids to fish. It was another great success with 190 trout being caught from the fishing pond by local children. Other fun activities included chickadee house building where kids built and took home 45 bird houses. This increases chickadee habitat across Maple Ridge! Local musician, Peter James and the Backroad Cruisers, was a wonderful new contribution to our music line-up with his featured song "Floating Down the River" being a great complement to Rivers Day.

We are very grateful to have had the full support of the Fraser Regional Correctional Centre, City of Maple Ridge Parks & Leisure, BC Federation of Driftfishers, Fraser Valley Trout Hatchery and the Kiwanis Club. Our core volunteers included the 1st Laityview Scouts, Air Cadets, and local high school students – without them we would not have been able to put on such a great event. Thanks to Kiwanis for making fabulous burgers and coffee! The event netted approximately \$1000 for 2017's Ridge Meadows Rivers Day event.



Allco trout fishing activity



Carnival games with volunteer



Ridge Meadows Rivers Day welcome ceremony participants

Katzie Slough Blind Channel Community Engagement Project

This project was funded for five years with 2016 being the last year the community engagement and environmental project would run. ARMS worked with a many different volunteers over the five years including Katzie youth and biologist, Mike Pearson, and many Pitt Meadows and Maple Ridge residents to assess the health of the blind channel. 2016 saw a slow start to the monitoring work mainly as volunteers were hard to find. With the help of our volunteers however, ARMS completed four sessions of fry trapping, water quality surveys, photopoint monitoring and a native vegetation assessment. ARMS volunteers also assisted Pearson Ecological at the blind channel and at the Pitt-Addington Marsh (which was used as a control site for the project).

The community engagement project was a success with volunteers gaining valuable skills through on-site training and application as well as the opportunity to take a certified Streamkeepers course through the Pacific Streamkeepers Federation. Total value of the project with all in-kind from ARMS and other partners was \$10,547.00



Water quality testing with volunteers



Vegetation survey with Katzie youth and ARMS summer student

A volunteer appreciation party was held at the Katzie First Nation band office to acknowledge the efforts of all the volunteers, to connect with those who had volunteered in 2016 and to share food and memories. Volunteers were given a certificate of recognition for their efforts in monitoring the health of the Katzie Slough blind channel. The event was well attended with approximately 18 people including Katzie Chief Susan Miller, and Council members Rick Bailey, Debbie Miller and Peter James, Pacific Salmon Foundation Director of Salmon Programs Dianne Ramage, Pitt Meadows Councillor Mike Stark, Pacific Streamkeepers Zo Ann Morten, volunteers and ARMS staff.



Volunteer appreciation party at Katzie First Nation band office, Pitt Meadows, December 2016

Appendix A

2016 Chronology of ARMS Activities

- 3 February – ARMS Executive Director and Education Coordinator met with Mayor Nicole Read to explain about ARMS Fish Passage initiative.
- 10 February – ARMS directors met BC Hydro, Golder Environmental representatives to review the ILM transmission line work over the South Alouette in the vicinity of the Allco Hatchery.
- 17 February – Chapman Creek Hatchery representatives (3) from the Sunshine Coast visited ARMS to learn about eco-camps and the education program. Staff led them through a tour of the Allco Hatchery, the different education programs and camps we offer with a view to offering a rental package of materials that could be an additional source of income for ARMS.
- 18 February – Worms and Wee Ones – Maple Ridge Litter Heroes event at McKinney Creek.
- 27 February – Navigating BC Gaming Grants workshop (Surrey) – staff workshop.
- 29 February – ARMS constitution meeting with ARMS staff and board directors.
- 1 March – Meadowridge Rotary – ARMS presented our 2015 activities to the lunchtime group. Executive Director and President presented to the group.
- 3 March – Homeschool visit to Rivers Heritage Centre – built chickadee houses and bat boxes.
- 7 March – City of Maple Ridge Committee of the Whole presentation – ARMS staff and directors in attendance.
- 9 March – Camp counsellor training – ARMS provided training to high school students.
- 10 March – Community Builders – ARMS attended downtown clean-up.
- 14-18 March – Super Mario Camp
- 18 March – Community Builders – ARMS attended downtown clean-up.
- 21-24 March – Splatoon Camp
- 22 March – Selkirk Adopt-a-Block orientation hosted by ARMS.
- 23 March – ARMS visit to Doug Bing's MLA constituency office – Provincial grant thanks
- 24 March – Community Builders – ARMS attended downtown clean-up.
- 29 March – Kids by Design – Maple Ridge Litter Heroes event.
- 30 March – DFO tour of the Alouette Dam, Upper Hatchery and Allco Hatchery – Maurice Coulter-Boisvert, Michael Crowe (new Section Head - Fraser/Thompson/Okanagan), Scott Ducharme, Dave Nanson, ARMS staff and Ken Stewart in attendance.
- 30 March – Kids By Design Maple Ridge Litter Heroes event.
- 1 April – Community Builders – ARMS attended downtown clean-up.
- 1 April – Worms and Wee Ones hatchery tour.
- April 14 – Katzie Slough Monitoring Session
- April 15 – Community Builders AAB
- April 16 – Nite Hike with 1st Laityview Scout Group
- April 20 – Alouette River Sockeye Reanadromization Project (ARSRP) Committee Meeting
- April 21 – Community Builders AAB
- April 22 – Pitt Meadows Earth Day
- April 23 – Maple Ridge Earth Day

- April 29 – Community Builders AAB
- April 30 – Provided AAB Equipment to Watershed Watch Salmon Society for Katzie Clean-up
- May 13 – Community Builders AAB
- May 14/15 – Streamkeepers Course with Zo Ann Morten of Pacific Streamkeepers Federation
- May 19 – Katzie Slough Monitoring Session
- May 20 – Hatchery Tour
- May 24 – Barn Swallow Monitoring Project on the dike at Hale Road, Pitt Meadows
- May 27 – Community Builders AAB
- June 6 – UBC students commenced at ARMS for 3-week practicum
- June 8 – City of Maple Ridge Mayor and Councillors (Speirs and Duncan), CAO Ted Swabey visit to ARMS and Allco Hatchery
- June 9 – Millionaire Creek Japanese knotweed site inspection with Doug Stanger and Parks & Leisure staff
- June 9 - BC Hydro vegetation specialists site visit to Clayton Creek
- June 13 - Summer students Scotti and Brody commenced employment
- June 20-24 Rivers Heritage Centre roof replaced by Maple Ridge Roofing
- June 21 - Pacific Salmon Foundation (Dianne Ramage) and DFO (Maurice Coulter-Boisvert) conducted a project site inspection of work funded for 2015-2016 (including Mud Creek sediment ponds)
- June 22 - Tour of Alouette Sockeye Hatchery with ARMS Environmental Projects staff
- June 24 - Meeting with Dale Mah, 1st Laityview Scouts - annual signing of community sponsor agreement
- June 29 - 232nd Street Channel work commenced – DFO Jonathan Bulcock on site manager
- June 30 – Photo op with MLA Doug Bing for Provincial grant of \$21,000 for roof repair
- July 4 - Liberal MP Dan Ruimy (Pitt Meadows-Maple Ridge) visited ARMS summer students at Rivers Heritage Centre (acknowledging Canada Summer Jobs grant)
- July 8 – ARMS President and Executive Director met with Dan Ruimy at his constituency office regarding new environment advisory/advocacy group
- July 13 - ARSRP workshop – held at Katzie FN Health and Community Centre
- July 14 - Ministry of Environment (Kenji Miyazaki), Aquatic Resource (Scott Ducharme) and BCIT Fish and Wildlife student, Merisa Wolfbear conducted a snorkel/walk of the South Alouette River from Allco fish fence to 224th Street bridge – 1 adult sockeye was spotted about 100 metres downstream from fish fence
- August 3 – BC Community Gaming Grant submitted for 2016-2017 funding
- August 4 - Innergex visit to Alouette off-channel – ARMS directors in attendance
- August 10 – Worked on ARSRP draft application and plan with BC Hydro, Alexis Hall
- August 17 – Staff attended BC Societies Act Workshop with ARMS treasurer
- August 18 – ARMS Board meeting
- August 20 – Storm Drain painting and Lantern making event with artist Robi Smith, Fern Crescent
- August 23 – Fish Passage Initiative update with Council Liaison Bob Masse
- September 12 – ARMS met with School District 42 to better promote Environmental Education

- September 13 – Alouette River Sockeye Reanadromization Project – Fall 2016 committee meeting
- September 15 – Councillor Bob Masse toured Alouette Dam facilities and Alouette Sockeye Hatchery with ARMS, BC Hydro and Fraser Correctional Centre officers.
- September 17 – ARMS attended GETI Fest in Memorial Peace Park
- September 19 – ARMS co-presented its Alouette Sockeye Restoration and Fish Passage Plan with Katzie First Nation and Ministry of Environment to BC Hydro’s Fish and Wildlife Compensation review panel in Mission
- September 19 – ARMS Environmental Educator attended the BC Field Trip Fair in Surrey
- September 22 – ARMS Environmental Educator attended the Maple Ridge Tourism Planning meeting
- September 25 – Ridge Meadows Rivers Day hosted by ARMS and BC Corrections at Allco Fish Hatchery and the Rivers Heritage Centre
- September 29 – ARMS Salmon Spawner survey training held
- October 3 – Alouette River salmon spawner surveys start
- October 4 – Hemmera environmental site inspection of the Alouette-Innergex Coho Off-channel habitat
- October 5 – Clayton Creek revegetation project by BC Hydro and ARMS volunteers
- October 5 – Site visit to Latimer Channel for salmon survey training with BCIT Fish and Wildlife students and Zo Ann Morten (Pacific Streamkeepers Federation)
- October 7 – ARMS meeting with Mayor Nicole Read – Alouette Water Use Plan
- October 11 – ARMS Environmental Educator attended Maple Ridge Tourism planning meeting
- October 9 – ARMS and Allco Hatchery hosted Department of Fisheries and Oceans for the community hatcheries Chum egg-take
- October 11 - ARMS and Allco Hatchery hosted Department of Fisheries and Oceans for the community hatcheries Chum egg-take
- October 20 – 22 – ARMS volunteers assist biologist Mike Pearson at the Katzie Slough blind channel and Pitt-Addington Marsh area
- October 22 - ARMS and Allco Hatchery hosted Department of Fisheries and Oceans for the community hatcheries Chum egg-take
- October 24 – DFO Educator Joanne Day visited ARMS for an Environmental Education tour.
- October 25 - ARMS and Allco Hatchery hosted Department of Fisheries and Oceans for the community hatcheries Chum egg-take
- October 26 – Alouette River Sockeye Reanadromization project – Update to ARMS Board of Directors
- October 27 - ARMS and Allco Hatchery hosted Department of Fisheries and Oceans for the community hatcheries Chum egg-take
- November 3 – ARMS board meeting
- November 10 – Meeting with local MP Dan Ruimy regarding the Federal Fisheries Act Reform
- November 17 – Meeting with Kerr Wood Leidal and the Alouette Valley Association engineering regarding the Maple Ridge Intergrated Stormwater Management Plan
- November 17 – NDP MLA George Heyman visited the Alouette River Management Society and Allco Fish Hatchery

- November 28 – Attended Maple Ridge City environmental staff presentation to Mayor and Council regarding the Federal Fisheries Act Reform
- December 3 – Attended Christmas in the Park (Memorial Peace Park) with Adopt-a-Block, Maple Ridge Litter Heroes and AAB sponsor, AjM Disposals Ltd
- December 14 – ARMS attends cheque presentation at Mountain Equipment Co-op Langley

Appendix B

Program Information – updated August 2016

Environmental Education Programs Offered to Schools and the Maple Ridge Community.

School Field Trip Programs:

The Watershed Education Tour

Duration: 4.5 – 5 hours

Ages: Grades 4 – 7

Location: Rivers Heritage Center, Allco Fish Hatchery and Allco Park, Maple Ridge

Availability: September to November and February to June

Staff Required: 1 – 2

Description: The Watershed Education Tour provides a unique destination field trip for intermediate students. Students learn the following concepts with a hands-on approach: watersheds, salmon life cycle, pollution, aquatic life, forest and stream ecology, and wildlife biology. Teaching methods consist of classroom theory, interactive models, crafts, and hands-on studies. Students participate in a tour of the Allco Fish Hatchery, a forest nature walk and scavenger hunt, and an aquatic insect study. Fall viewing and activities include fish fence operation, brood stock incubation, spawning salmon, egg collection and fertilization, and salmon dissections. Spring demonstrations and activities include egg incubation, fish rearing, fish feeding, and fry release.

The Junior Watershed Education Tour

Duration: 2.5 – 3 hours

Ages: Grades 1 – 3

Location: Rivers Heritage Center and Allco Fish Hatchery, Maple Ridge

Availability: September to November and February to June

Staff Required: 1 – 2

Description: The Junior Watershed Education Tour provides a unique destination field trip for primary students. Students learn the following concepts with a hands-on approach: watersheds, salmon life cycle, pollution and stream ecology. Teaching methods consist of classroom theory, interactive models, crafts, and hands-on studies. Students participate in a tour of the Allco Fish Hatchery and an aquatic insect study. Fall viewing and activities include fish fence operation and spawning salmon. Spring demonstrations and activities include egg incubation, fish rearing, fish feeding, and fry release.

Allco Fish Hatchery Tours

Duration: 1 – 2 hours

Ages: Preschool – Grade 12; Community organizations on evenings and weekends

Location: Allco Fish Hatchery, Maple Ridge

Availability: Year round

Staff Required: 1

Description: This short tour includes an introduction to the salmon life cycle and a tour of the Allco Fish Hatchery. Seasonal demonstrations and viewing opportunities can include: fish feeding, fish fence

operation, brood stock collection, spawning salmon, egg collection, fertilization and incubation, and fertilization and fish releases.

Salmon Dissection

Duration: 2.5 hours

Ages: Grades 4 – 12

Location: Rivers Heritage Center and Allco Fish Hatchery, Maple Ridge

Availability: October – December

Staff Required: 1 – 2

Description: The Salmon Dissection Program includes an introduction to the salmon life cycle, a short video, a tour of the Allco Fish Hatchery and a complete salmon dissection. Our dissection is a humane alternative to conventional dissection as we take already-spawned salmon that have recently died from the river. The students work in small groups and learn the physiological systems of salmon which include the respiratory, sensory, muscular, circulatory, reproductive, and digestive systems. The focus reflects the Integrated Resource Package objectives for each grade. Both external and internal features are identified and discussed before returning the salmon carcass to the river to complete its role in the food web.

Classroom Programs:

ARMS classroom programs are a great alternative to our field trips as we bring the natural environment inside to schools in Maple Ridge and Pitt Meadows from September to June. Each classroom program is 1.5 to 2 hours long and is presented by one or two Education Coordinators.

OWLES (Owls, Wildlife and Endangered Species)

Ages: Grades 5 – 7

Description: Owls, like many other species at risk are one of those species children and adults are unaware of. People may not even be aware that the decisions we make as a society can directly affect the health of our local food chains of our local species at risk (SAR). Through public awareness we hope to encourage students to educate the rest of their peers regarding the sensitivity of our SAR. Students will learn that by protecting these species we are protecting the species diversity of our area, which impacts other species as well. Teachers can opt to "bring education home" by speaking to the species right here in our environment, rather than (or at least as well as) speaking on species like the panda and others that are also endangered but are very hard for children to identify with as they are thousands of miles away.

(Note: Funding is sought annually through TD Bank Friends of the Environment to provide for specific materials required).

It's A Bug's Life

Duration: 2 hours

Ages: Grades Pre Kindergarten - 4

Staff Required: 1 - 2

Description: This program offers students and teachers alike an insight into the important role that pollinators perform in our ecosystems. Students will explore butterflies and bees, their lifecycles, anatomy, habitat, preferred plants, bee hive workings, pollinator arts and crafts, build a mason bee home. **(Note: This workshop offering has been funded by TD Friends of the Environment since 2013).**

Salmon Scales and Tales

Ages: Preschool – Grade 7

Description: The species of Pacific Salmon and their life cycles are introduced in this program. Children participate in interactive demonstrations and activities and come away with an understanding of the trials and tribulations salmon must face. The program includes a discussion of how the children and their families can protect salmon and their habitat. The concepts of this program work well in series with *Creepy Crawlies in the Classroom* and *Water Wise*.

Creepy Crawlies in the Classroom

Ages: Grades 1 – 7

Description: Our streams and rivers are host to dozens of species of aquatic insects. ARMS collects the critters and brings them to the classroom. The students actively identify and view the bugs under microscopes and magnifying glasses. Students also learn the life cycle of insects and how aquatic insects are indicators of water quality. The concepts of this program work well in series with *Salmon Scales and Tales* and *Water Wise*.

Water Wise

Ages: Grades 2 – 7

Description: This program examines the water cycle and the finite water resources existing on Earth. Children are introduced to the concept of watersheds and participate in an interactive watershed demonstration, learning about types of pollution and their effect on the environment. Actions to protect and conserve water are also discussed. The concepts of this program work well in series with *Salmon Scales and Tales* and *Creepy Crawlies in the Classroom*.

Trees of Life

Ages: Grades 1 – 7

Description: Students learn the fascinating facts about wildlife trees and their importance to BC's wildlife. The program starts with a short "Who Am I" game where participants learn some of the different species of wildlife tree users. Specific wildlife species are introduced including: black bears, owls, bats, and woodpeckers. The concepts of habitat and ecosystems are discussed and how humans can have a positive or negative impact on the environment. The final activity is an interactive game where participants identify different species of wildlife through sight, sound and touch.

Fantastic Frogs

Ages: Grades Preschool – Grade 2

Description: This program explores the differences between frogs and toads, the frog life cycle with models of each stage, species of frogs and endangered frog species. Students will hear recordings of native frog calls, learn about the habitat of frogs by building a suitable frog habitat and, depending on the time of year, see a live frog.

School Ecology Tours

Duration: 4.5 – 5 hours

Ages: Grades 4 – 7

Staff Required: 1 – 2

Description: A full day tour exploring the ecology around each school in Maple Ridge and Pitt Meadows. With the difficulties some teachers may have to arrange a fieldtrip, ARMS brings an environmental fieldtrip program to the school. Concepts discussed include: watersheds, positive and negative impacts in a watershed, local wildlife. Activities incorporate a tour of the area surrounding their school, storm drain marking, and creating posters to explain to their peers why it is important to take care of the environment.

Habitat Programs:

Bird nest boxes, feeders, and bat boxes come in pre-cut kits and are easy to assemble. ARMS provides all necessary supplies, as well as guided instruction throughout the workshop. Each habitat program is 1.5 to 2 hours long and is presented by ARMS staff at the Rivers Heritage Centre or in the classroom. Habitat programs are available year round.

Bird Nest Box, Bird Feeders or Ladybug Hut Workshops

Ages: Grades 1 – 7

Description: This workshop includes a short presentation on wildlife and wildlife trees and their importance to the ecosystem. Students then have the opportunity to individually construct a bird nest box, bird feeder or ladybug hut.

Bat House Workshop

Ages: Grades 1 – 7

Description: This presentation focuses on bat facts and the benefits of having bats in our backyards. Students have the opportunity to construct a bat house to put up in their backyard or schoolyard. This program has been improved to provide a 2hr workshop which teachers can further expand on over the school year with the BC Curriculum.

ARMS Spring Break and Summer Eco-Camps:

Every year ARMS delivers Spring Break and Summer Eco-Camps at the Rivers Heritage Centre and Allco Park in Maple Ridge, BC. Each week-long day camp is for children aged 6-12 with a ratio of one adult to five children. Our camp programs have been developed with environmental-themed games, crafts and activities making them increasingly popular with children and parents. Registration for these camps is through Maple Ridge and Pitt Meadows Parks & Leisure Services. We also work with the career planning departments of the local high schools to obtain volunteer assistance for these programs. **In 2016, ARMS delivered camps to 109 school-aged children.** Included is a sample of a previous camps offered to the community:

SPRING BREAK ECO-CAMP:

Popular Theme Offerings

Pokemon Eco-camp

Description: Learn essential outdoor skills through play-based imaginative learning including orienteering skills using compasses and GPS. Track down those elusive Pokémon and catch them in their pokéball. Themed days include wildlife, rocks and minerals, gold and gems, volcanoes, weather, fire and water safety while having fun exploring the world of Pokémon.

Minecraft: Return to the Nether

Description: Children explore their world through the enchantment of the world of Minecraft. The elemental building blocks of this game can be found on earth. Children learn about mining, gold panning, and natural resources. This theme “Nether” explores one part of the world of Minecraft.

Salamanders and Lizards

Description: It’s time to learn the difference between those amphibians and reptiles! Go on a salamander search through the woods and play amphibian bingo.

Bears and Cougars

Description: Crafts and games will help us along in our lessons about BC’s bears and cougars. Practice your cougar and bear aware skills by making masks and creating safety skits.

Theme: Freshwater Fish

Description: Get up close and personal with fish at the Allco Hatchery with a fish feeding and release into the Alouette River.

SUMMER ECO-CAMPS:

Popular Theme Offerings

Survivor – Amazing Race

Description: During this week, campers will participate in orienteering: learning how to use compasses, GPS location and maps. Geocaching will be a daily event, Tuesday will include a lifesaver first aid course. Learning different knots and tying techniques, fort building, weaving other basic survival skills will all be taught. Games such as the ever-popular man hunter, amazing race and survivor will be played as well as some team building exercises.

Wonderful World of Water

Description: Learn and explore the many aspects of water. Themed days include topics on water works, water cycle, water and boat safety, and the importance of water conservation. Children will experiment and enjoy a wide variety of water play with different crafts, games, and activities.

Where the Wild Things Are

Description: ARMS staff and campers will trek through all things wild. Each day will have a special theme such as roots n' shoots, wet wildlife and trails and tracks. There will be crafts, games and outdoor fun. Campers will become experienced BC naturalists and learn the importance of our ecosystem.

BC Mammals Day Camp

Description: This camp focuses on the furry animal friends who share our province. What mammals live in our forest and just who really eats whom? Are these animals dangerous? This camp will explore bears, cougars, wolves, and coyotes with fun activities, games and crafts.

Bugs and Slugs

Description: Why are slugs slimy? Why do some bugs have six legs and some have eight? How do aquatic insects breathe underwater? These are just some of the questions that will be investigated by children in this special camp. Each of the three days has a theme, including terrestrial insects, aquatic insects, and slugs and there will be crafts and games related to each theme.

Owls and Rodents Day Camp

Description: Do you know how owls and rodents are connected? Come and find out by seeing a live barn owl, dissecting real owl pellets, exploring their habitats, and playing games. It is a day filled with owly fun!

Wildlife Week

Description: This camp is all about the wild animal friends who share our province. Each day has a different theme, including Forest Detectives, Endangered Species, Things that Fly, and Stream Creatures. During this week, children will get a chance to do many neat crafts, play interactive games, tour the Allco Fish Hatchery, and experience the wilderness first hand.

Outdoor Adventure Day Camp

Description: This adventure day camp is all about camping and surviving in the great outdoors. Children will learn the basics of map and compass reading, as well as what gear should be brought along on hikes and camping trips. They will experience putting up tents, building emergency shelters, and tying knots. Hardy camping food will be provided for snacks and lunch. Fun and energetic!

Community Educational Programs:

Adopt-A-Stream

Duration: 1 – 6 hours once a month

Ages: Grade 1 – 12; Community organizations on evenings and weekends

Location: Onsite at creeks throughout Maple Ridge

Availability: Year round

Staff Required: 2

Description: A popular community-wide environmental activity, the Adopt-A-Stream program is a partnership between School District #42, ARMS and the community of Maple Ridge. Students and residents participate in hands-on habitat enhancement and protection projects near their school and throughout Maple Ridge. The program commenced in 2011 with funding from the Fraser Salmon and

Watershed Program and continued in 2012-2013 with Mountain Equipment Co-op's Advocacy and Education grant, RBC Blue Water Program, and Vancity's Community Fund. **Since 2014, partial funding continued from the City of Maple Ridge.** Activities offered year-round include: storm-drain marking, fish releases, water quality monitoring, bird box placement, vegetation planting, stream cleanups and aquatic insect monitoring. Nine local watercourses have been adopted including McKenney Creek, Latimer Creek, Latimer Channel, Millionaire Creek, North Alouette River, Katzie Slough and Coho Creek. Interested groups are asked to inquire with ARMS about specific activities.

Environmental Stewardship and Other Volunteer Activities Offered by ARMS includes:

Salmon Spawner Surveys

Duration: 2 hours per week

Ages: 10 & up

Location: Onsite at creeks throughout Maple Ridge

Availability: October - December

Staff Required: 1 - 2

Since the fall of 2007, ARMS staff and volunteers have conducted salmon spawner surveys on four tributaries of the Alouette River. The surveys consist of counting and identifying live and dead salmon and dissecting dead salmon to ascertain the health of the fish. Volunteers for the spawner surveys have included a local scout troop, families, fishermen, and seniors caring for the streams in their backyard.

Fish Releases

Duration: 1 hour

Ages: Preschool – Grade 7

Location: Onsite at creeks throughout Maple Ridge

Availability: April, May and June

Staff Required: 1 – 2

Description: Students have an opportunity to release salmon fry raised at the Allco Fish Hatchery into a neighbourhood stream. These salmon will eventually return to this same stream as spawning adults allowing the class to observe them for years to come. Students also examine the habitat components of the stream and learn what salmon need to survive. This program allows participants to make the connection between organism and habitat while making a positive impact on the environment.

Storm Drain Marking

Duration: 2 hours

Ages: Grades 3 – 10

Location: Throughout Maple Ridge

Availability: September – October and April – June

Staff Required: 1 – 2

Description: Storm drain marking is a simple way for students and neighbourhood residents to learn about the connection of storm drains and streams. Rainwater, which runs off our roads, parking lots and driveways, can carry toxic levels of pollutants and harm our streams and the creatures that live in them. The class is divided into small groups which then mark each storm drain in the neighbourhood. Templates are used to paint a small yellow fish at each drain and informational pamphlets are distributed to each

residence in the neighbourhood to explain the significance of the yellow fish. Safety vests are provided and parents are encouraged to attend for supervision.

Office Assistance

Duration: varies

Ages: Adults

Location: Rivers Heritage Centre

Availability: Year round

Staff Required: 1 (for initial training)

Description: ARMS' volunteers assist with the organization of our library, entry of data from projects, and inventory. ARMS' Treasurer completes the payroll and financial data entry. Office assistance positions are also made available for disabled persons.

Katzie Slough Compensation Project

Duration: 2 hours

Ages: Adults

Location: Katzie Slough, Pitt Meadows

Availability: Spring

Staff Required: 1 - 2

Description: There has been a loss of slough habitat due to the construction of a new lane on Lougheed Highway in Pitt Meadows. To compensate for the habitat loss, a new channel was constructed in the Katzie Slough in the summer of 2011. ARMS staff and volunteers monitored the site annually for five years from 2012 to 2016 to determine the success of the channel. This monitoring program was funded by the Pacific Salmon Foundation with in-kind from the Alouette River Management Society and is now complete.