



Mount Polley Mining Corporation

an Imperial Metals company

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Community Update

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MPMC EVENTS

Quarter 4 2018

October 2:

Public Liaison Committee meeting (PLC) & tour with the Mining Association of Canada and their Community of Interest panel

October 16:

Implementation Committee (IC) meeting with Williams Lake & Soda Creek Indian Bands

November 19:

PLC meeting to discuss Terms of Reference

December 7 & 13:

MPMC Holiday Party

December 11:

IC meeting with Williams Lake & Soda Creek Indian Bands

December 11, 12, 14 & 15:

Community presentations in Sugar Cane, Quesnel, Williams Lake, and Likely.

Quarter 1 2019

January TBD:

IC meeting with Williams Lake & Soda Creek Indian Bands

February TBD:

PLC conference call

Mount Polley Mine 2018 Summary

Mining Operations

- ◆ Dredging of the Springer Pit commenced in February 2018 .
- ◆ Mining in the Cariboo Pit will cease at the end of Q4 2018.
- ◆ Forty unionized employees from mine operations (mostly haul truck drivers and equipment operators) were laid off due ore depletion in the Cariboo Pit.
- ◆ Buttressing of the Tailings Storage Facility (TSF) to 968 meter elevation completed at Corner 1.

Remediation Highlights

- ◆ Polley Lake rainbow trout fish were re-introduced into the 2.6 km of remediated area of upper Hazeltine Creek on April 26, 2018 for spawning with great success.
- ◆ One kilometer of fish habitat in Hazeltine Creek was completed downstream of the Gavin Lake Road bridge. Outstanding projects are expected to continue in 2019.
- ◆ Mount Polley hosted the British Columbia Technical Research Committee on Reclamation tour on September 18, 2018.
- ◆ Approximately 11,300 rainbow trout from Mount Polley's on-site hatchery were released into Polley Lake on September 25 and 26, 2018.

On January 7, 2019, Imperial Metals reported that operations at Mount Polley would cease at the end of May 2019. Environmental monitoring and remediation program will continue during the care and maintenance period.

Our People



2018		
Total Employees on Payroll	266	100%
First Nations Employees	23	8.6%
First Nations Employees identifying as Williams Lake	3	1.1%
First Nations Employees identifying as Soda Creek	2	0.75%
Managers and Staff	79	30%
Female Employees	42	16%
Male Employees	224	84%
Average Age	45.6	-

Why does the creek look like this?

A lot of work goes into rebuilding a creek. While it may look like the woody and rocky debris are scattered in haphazard manner, a lot of science and engineering are behind those 'messy' placements. Nature rarely builds things neatly, so when it comes to rebuilding a creek, experts must take that into account.

Creeks and rivers naturally bend or 'meander' (rarely do water bodies flow in a straight line) to form 'S' curves. Common features of these creeks are riffles and pools. Riffles are piles of rocks that are built up to control flow rates and aerate the water. Pools are deeper sections of creeks, and in addition to instream and overstream boulders and logs, provide shelter for fish.

The riparian areas, the parts adjacent to the creek, are just as important. In Hazeltine Creek, the sides of the channel have been rocked in to provide stream stabilization to prevent erosion. The earth has been moved (roughened and loosened) and mounded to allow for planting; this will give the roots more room to establish compared to compacted ground. Deeper roots will also help prevent erosion of the stream bank. The vegetation will provide additional cover for fish. The woody debris and upturned trees provide avian and small mammal habitat, and eventually, additional nutrients for the soil during decomposition.



Figure 1. Growth of remediated areas and fish habitat use, 2018

Figure 2 below depicts a section of Hazeltine creek (with a meander) that was constructed in 2016 with fish habitat features as described above. The same design replicated throughout the creek in 2017 and 2018 in upper Hazeltine to 1km downstream of the Gavin Lake bridge. In Figure 1 above, shows 2 years of vegetation growth in the riparian areas, and that the reintroduced fish are utilizing the habitat provided (ie. cover of the deep pools and instream logs).

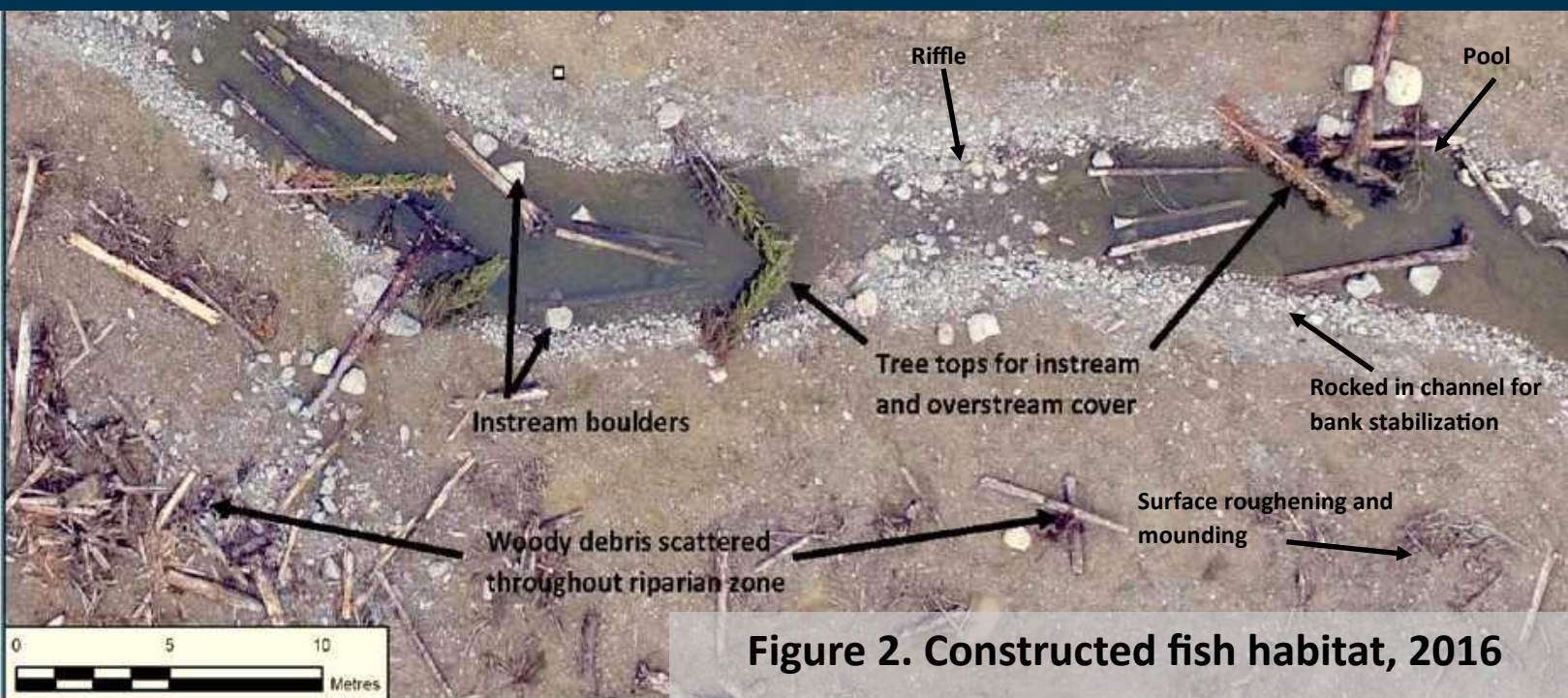


Figure 2. Constructed fish habitat, 2016

Lower Hazeltine Creek Remediation (view from Ditch Road Bridge)

November 2014



Sediment and erosion control fencing to prevent native material from entering creek

June 2015



Tailings in and adjacent to creek removed. Wood chips and woody debris added to banks for additional nutrients on both banks

Channel rocked in for stability with meanders

May 2016



Grass seeding and planting willow stalks for additional erosion control on both floodplains and upper banks

September 2017



Continued growth of willows, shrubbery and grasses along the banks

Surface roughening and mounding for planting native shrubs (eg. Prickly rose)

September 2018



Continued growth of willows, shrubbery and grasses along the banks

Surface roughening and mounding providing root strength for continuous growth. Coniferous tree plugs planted. Ongoing remediation planned for 2019-2020.

Community Lake Monitoring



There are many ways for interested individuals to get involved in monitoring their lake, like becoming a member of the British Columbia Lake Stewardship Society (BCLSS). The Secchi

disk provides a measurement of water transparency according to the depth. It involves lowering a black and white Secchi disk into the water and recording the depth (usually in metres) until it is no longer visible.

To learn more, please visit:

- ◆ BC Lake Stewardship Society
<http://www.bclss.org/>
- ◆ Secchi Dip-In <http://seccchidipin.org/>

'Lyn Anglin, the Chief Scientific Officer of Imperial Metals and MPMC, is retiring in 2019. As a token of thanks, she received a pendant made of copper and bornite (not pictured) from Twist N' Copper.



Twist N' Copper is a home based business from Big Lake in the Cariboo, run by Lori Snodgrass. Find her on Facebook under Twist N' Copper or email lsnod_bl@hotmail.com. Pendant shown is labradorite and copper wire

Mount Polley Mine – Public Liaison Committee (PLC)

The PLC was first established in 1999 as a means for Mount Polley Mine Corporation (MPMC) to form and maintain good relations with the local community. This was a condition in the original Environmental Assessment Report approving the mine to proceed in 1992. The PLC is now a condition of the mine's *Environmental Management Act* Permit 11678 and is mandated to "meet at least quarterly to share and receive information about mine activities and the results of monitoring programs with interested members of the public, the Soda Creek Indian Band, the Williams Lake Indian Band, and regulating agencies." The PLC is intended to be an information sharing body and to encourage communication between MPMC, the public, local communities, public interest groups, First Nations groups, regulators and other interested parties.

The PLC is a multi-stakeholder group with membership representing broad, interest-based groups. The membership presently includes representatives from local communities (Likely, Big Lake, Horsefly and Williams Lake), First Nations, several government ministries, and representatives of the mine. The PLC recently went through an exercise to update its Terms of Reference. By joining the PLC, members are agreeing to openly share information that they receive from the mine with their communities, and to bring questions about the mine from their communities to the PLC. At the last PLC meeting, held in October at the mine, the group was joined by representatives of the Mining Association of Canada's Communities of Interest Panel, who attended to observe MPMC's PLC in action, and participate in a mine site tour with the PLC.

PLC meetings occur, at minimum, on a quarterly basis. Next PLC meeting is tentatively scheduled for February 25th, 2019.

If you are interested in the activities of the PLC, or perhaps in becoming a member of the committee, please do not hesitate to contact Valerie Holweck, Environmental Coordinator, Mount Polley Mine. She can be reached through the Mount Polley Mine general number: 250-790-2215. If you are interested in joining the PLC, please provide Valerie with your name, contact telephone number and email.

There were over 320 wildlife sightings by MPMC employees and contractors in 2018. Swans, black bears, and Western toads were the top 3 sightings along with moose, lynx, mule deer, and grouse also observed around the site.



Please visit the Imperial Metals website for more information about MPMC's reports and ongoing projects: <https://www.imperialmetals.com/our-operations-and-projects/operations/mount-polley-mine/mount-polley-updates/remediation-and-monitoring>



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Community Update

Introduction

Welcome to Mount Polley Mining Corporation's (MPMC) quarterly Community Update newsletter providing local communities with information about what is happening at the mine.

TRCR Tour at Mount Polley



TRCR tour attendees and Mount Polley mine and contractor tour guides at the North Bell Reclamation Site, Sept 18, 2018

The British Columbia Technical Research Committee on Reclamation (TRCR) holds an annual symposium that focuses on the exchange of information and ideas on mine reclamation. Every year, the TRCR chooses a mine site to highlight and explore. On September 18, 2018, over 125 people from the Cariboo, BC, Canada, and Germany participated in the Mount Polley Mine site tour.

MPMC Events:

Past events:

September 17-21:

Technical and Research Committee on Reclamation (TRCR) symposium and site tour — Williams Lake, Likely, and Mount Polley mine site

September 26:

Columneetza students and parents participated in hatchery fry release—Mount Polley mine site

Upcoming events:

October 2:

Public Liaison Committee meeting (PLC) and tour with the Mining Association of Canada and their Community of Interest panel—Mount Polley mine site

October 16:

Implementation Committee (IC) meeting with Williams Lake and Soda Creek Indian Bands—Williams Lake

TBA:

PLC teleconference meeting to discuss Terms of Reference

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Participants viewed various stops along Hazeltine Creek, Polley Flats, the Tailings Storage Facility (TSF), and a reclaimed waste rock pile. Each area featured a small presentation from a Mount Polley or contractor tour guide.

In addition to the tour, the three-day TRCR conference portion was held in Williams Lake. 'Lyn Anglin, the Chief Scientific Officer from Imperial Metals (parent company to MPMC) was among the speakers, and presented an overview of the embankment failure, the response, the remediation and the history of mining in the Likely region.

Likely Area Mining History

The area around Likely has a long and fascinating history of placer mining. Placer mining refers to mining materials (mostly gold) deposited in stream beds. Some of the earliest discoveries in the area were made in 1859, one in the Horsefly River, and one in the Dancing Bill Gulch. The latter became known as the China Pit and then the Bullion Pit, just downstream of Likely on the west side of the Quesnel River. Placer gold was also discovered near the mouth of Keithley Creek on the Cariboo River about 12 km upstream from Quesnel Forks in July 1860. Other significant discoveries were subsequently made just 4 km south of Likely on Cedar Creek, and in Quesnel River itself.

In 1897, the Golden River Canal Co. decided to build a dam across the Quesnel River at the outlet from Quesnel Lake in order to block the river and be able to work the gravels from the bottom of the river. The tent town that



Drone image of the Bullion Pit; courtesy of L. Nikl

developed on the site was known as 'Quesnel Dam'. In 1920, the dam was dynamited and the remnants of the dam can be seen just north of the Likely Bridge. After the removal of the dam, the residents decided to rename the town 'Likely' after a local prospector, John Likely.

The Bullion Pit ultimately became a very significant producer in the area. BC Minfile report number 093A 025 states that "In 1897, the Consolidated Hydraulic Mining Company commenced full scale operations and between 1898 and 1902, the company processed 5,912,700 cubic metres of mixed materials, recovering 1,402,316 grams of gold at a recoverable grade of 0.132 grams per tonne gold... Estimations indicate that a total of 200 million tonnes of material were removed by hydraulic methods and 5.463 million grams (175,644 ounces) of gold were produced." Indications are that this material was discharged directly into the Quesnel River.



The shortage of water in the early 1900's led to the operators of the Bullion Pit to construct a number of water control and diversion works on local streams and lakes to gather water for the hydraulic operations at the pit. Photos from the BC archives, including ones featured in the TV program "Gold trails and Ghost Towns – The Bullion Pit episode", document weirs and diversion ditches built on Polley Lake and Hazeltine Creek and other creeks in the area.

To learn more about Likely's mining history, visit the Cedar City Museum and Info Center located in the Cedar Point Provincial Park in Likely, BC. <http://likely-bc.ca/play/things-to-do/>

Polley Lake Outlet Structure: water works for placer mining—early 1900s.
Courtesy of BC Archives.

Many placer mines continue to operate in the area around Likely; such as the operation picture below on the road to Quesnel Forks. Quesnel Forks is a ghost town located 12 km outside of Likely with a rich mining history and is worth a visit. It is situated at the point where Cariboo River meets the Quesnel River, and features a beautiful campground.



Left: Welcome to Quesnel Forks information board; Middle: a restored structure in Quesnel Forks; Right: Placer mining operation near Quesnel Forks

Rainbow Trout Release

On September 25 and 26, MPMC and Minnow Environmental released over 11,000 Rainbow trout fry from the hatchery into Polley Lake. The adipose fins from each fry were cut as a means of tagging (identification). We strongly encourage those that catch any fish in Polley Lake with clipped adipose fins to report back to MPMC. Signs will be put up at the Polley Lake campground with additional information.



Clipping the adipose fins of the rainbow trout fry, September 2018



Transferring the fry into carboys for transport to Polley Lake for release, September 2018

Mount Polley staff and contractors were joined by students, parents, and a teacher from Columneetza Middle School's Greenologists/Enviro Club in Williams Lake on September 26. Students were given fish to release into the lake.



Students from the Greenologist/Enviro Club at the Polley Lake boat launch, September 2018.



Staff from Minnow Environmental with carboy of fish ready to be released, September 2018

After the fish release, the students toured the remediated areas of upper Hazeltine Creek and the Cariboo Pit by one of MPMC's blasters. We hope to see Columneetza Greenologists/Enviro Club next year!

Please visit the Imperial Metals website for more information about MPMC's reports and ongoing projects:
<https://www.imperialmetals.com/our-operations/mount-polley-mine/mount-polley-updates>



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Community Update

Introduction

Welcome to Mount Polley Mining Corporation's (MPMC) 2018 Quarter 2 Community Update newsletter providing the local communities with information about what is happening at the mine.

Fish in Hazeltine Creek



Upper Hazeltine Creek, early July 2018

On April 26, 2018, the fish fence at the Polley Lake Weir was removed and fish were allowed to return into the remediated section of upper Hazeltine Creek. A lower fish fence was installed upstream of the Gavin Lake Road bridge to prevent spawning in future work areas.

MPMC Events:

Past events:

April 11: Implementation
Committee Meeting —
Williams Lake, BC

June 8-10: Plato Island
Fishing Derby sponsored by
MPMC — Quesnel Lake, BC

June 26: Public Liaison
Committee meeting — Likely,
BC

June 28: Regional
Operations Supervisors from
Ministry of Environment Tour
— Mount Polley mine site

Upcoming events:

TBD: Public site tour —
Mount Polley mine site (after
labour dispute is resolved)

September 17-21:
Technical and Research
Committee on Reclamation
(TRCR) symposium and site
tour — Williams Lake, Likely,
and Mount Polley mine site

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Since August 2014, fish were prevented from entering Hazeltine Creek until suitable habitat was constructed. After two years of work, there is approximately 2.5 km of spawning and rearing habitat for rainbow trout, as well as red side shiners and long nose suckers in the creek. This marks a milestone in the remediation efforts at MPMC and could not have been achieved without the hard work and support of its employees, as well as consultants, contractors, First Nations and our community partners.



Spawning rainbow trout in Hazeltine Creek— late May 2018

Weekly surveys of the fish populations are being conducted by MPMC environmental staff in cooperation with Minnow Environmental to track the success of the 2018 spawn and fish activity. The surveys include counting of fish at established monitoring stations and pools, and observing how the fish are using the creek (eg. seeking shelter under woody debris or boulders). The most recent spawning survey completed in early July observed over 18,600 rainbow trout in upper Hazeltine Creek, with the majority being young-of-year (ie. born from the 2018 spawn). In addition to the surveys, temperature data continues to be monitored within Hazeltine Creek as well as dissolved oxygen levels.

An engineered fish ladder was installed at the Polley Lake weir to allow fish to return into Polley Lake. The flows are monitored to ensure that the water elevations are properly maintained for fish passage. The fish ladder has been designed so that flow can be adapted to seasonal changes.



Fish using the ladder at the Polley Lake weir - late May 2018

Rainbow Trout Hatchery

To augment the rainbow trout age class numbers post-breach, MPMC built an on-site hatchery this spring. The eggs were harvested and fertilized from local rainbow trout in Hazeltine Creek.



Minnow Environmental Staff inspecting eggs harvested from rainbow trout, early May 2018.

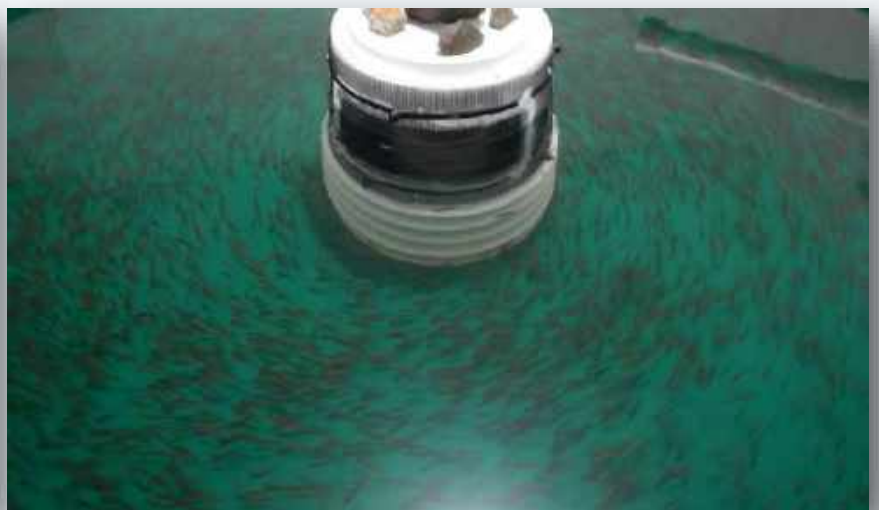
Once the eggs were fertilized, they were placed in incubation trays where temperature, flow and dissolved oxygen levels were regularly monitored. The water intake is sourced from below the thermocline in Polley Lake in order to maintain cooler temperatures. It took approximately two months for the eggs to hatch into alevins (yolk-sac fry) and another two weeks for the yolk sac to be completely absorbed. Throughout the incubation stage (except during their most sensitive phase), MPMC staff counted and removed the white dead/unfertilized eggs.

On July 5, the fry were transferred from the incubation trays to the shallow rearing tanks. They will remain there until the fish reach their target biomass and then will be transferred to deeper rearing tanks, and eventually released into the Polley Lake watershed.

MPMC staff have been monitoring the hatchery twice daily, at a minimum, to ensure the survival of the fish, and even have on-call overnight personnel to attend to an emergency.



Rainbow trout eggs hatching, late June 2018



Rainbow trout fry in shallow ponding tanks, early July 2018

Hazeltine Creek Remediation

Approximately 3,030 willow cuttings harvested from site, were planted along 2.6 km of the lower floodplain in reach 2 of Hazeltine Creek in spring 2018. Additional planting of approximately 58,600 alder and 192,480 conifers plugs (eg. pine, spruce, and cedar) in the breach affected areas, will continue in the upcoming months.

Remediation work planned for summer 2018 includes further soil placement in the Polley Flats area. This will include the removal and remediation of the road south of the Polley Lake control structure. This will create a continuous area of remediation from the Polley Flats to the treeline east of Hazeltine Creek. Primary drainage control will be maintained/established during the construction.

Construction of fish habitat features in reach 3 of the Hazeltine Creek channel was scheduled to start in June, however, as MPMC is involved in a labour dispute with its unionized employees, this remediation work has been postponed to later this summer.

Wildlife

There have been many wildlife sightings on and around the site, especially black bear sows with cubs. Reminder to be aware of your surroundings and make noise when walking in the bush.



Black bear sow with cub along the west ditch on the Mount Polley site, June 2018



Bull moose observed on a Mount Polley site wildlife camera, June 2018

Please visit the Imperial Metals website for more information about MPMC's reports and ongoing projects:
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Community Update

Introduction

Welcome to Mount Polley Mining Corporation's (MPMC) 2018 Quarter 1 Community Update newsletter providing the local communities with information about what is happening at the mine.

If you have any ideas for information that you would like to have included in the upcoming Community Updates, please do not hesitate to send an email to Colleen Hughes at chughes@mountpolley.com.

Mount Polley: Operations at a Glance

MPMC is in the process of scaling back operations by June 2018. That is the approximate time when the Cariboo Pit will be suspended. Later in the year, only stockpile ore will be sent to mill. Dredging of tailings from the Springer Pit will continue during that time, and mining in the Springer Pit is planned to resume as soon as the dredging is complete.

Dredging operations start in the Springer Pit, February 2018.



Above: Polley Lake at sample site P2 on March 13, 2018.
Conditions: wind/sun, 4°C

Below: Quesnel Lake at sample site QUL-58 on January 10, 2018.
Conditions: sun/cloud, -17°C



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2018 MPMC Events:

Past event:

February 15:

Public Liaison Committee (PLC) call-in meeting.

Scheduled upcoming events:

Early April:

Implementation Committee (IC) meeting.

September 17-21:

Technical and Research Committee on Reclamation (TRCR) symposium and mine site tour.

Stay tuned for more upcoming meetings and site tours!

Hazeltine Creek looking upstream from Gavin Lake Bridge, January 2018



Wildlife sightings: 2017 overview

In 2017, there was a total of 723 reported wildlife sightings at the MPMC site and surroundings. Highlights of observations are summarized in the table below:

Animal	Sightings
Bald Eagle	38
Black Bear	242
Coyote	27
Lynx	20
Moose	41
Mule deer	64
River Otter	4
Red Tailed Hawk	14
Sandhill Crane	14



Lynx and her cub on the Gavin Lake Road by the TSF, February 2018

Hazeltine Creek: upcoming projects

Ongoing remediation work in Hazeltine Creek is planned from spring to fall 2018. Channel reconstruction, fish habitat features and floodplain mounding and planting is scheduled for Reach 3, immediately below Reach 2 (below the Gavin Lake bridge) which was completed in 2017.

MPMC has also been consulting with the Habitat Remediation Working Group (HRWG) which consists of consultants, government, First Nations and company representatives and is chaired by Department of Fisheries and Oceans. This group is discussing how to return fish into the remediated areas of upper Hazeltine Creek (Reaches 1 & 2). Opening the creek to Rainbow trout (*Oncorhynchus mykiss*) as well as Redside shiner (*Richardsonius balteatus*) and sucker (*Catostomus sp.*) spawners from Polley Lake would be the next step in the ecosystem recovery.

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