



*Arid benchlands above
the junction of the Fraser
and Chilcotin rivers, west
of Williams Lake – Robert
Moberg Films*

10-year Monitoring Report – 2009 to 2020

The Fraser

A Canadian Heritage River

March 31, 2021

Prepared by
The Fraser Basin Council in collaboration with the
BC Ministry of Environment and Climate Change Strategy

Submitted to
**The Canadian Heritage
Rivers Board**

Submitted by
**BC Parks, BC Ministry of Environment
and Climate Change Strategy**

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**Canadian
Heritage Rivers
System**

**Réseau des
rivières du patrimoine
canadien**



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Environment and
Climate Change Strategy**



Fraser Basin Council



The Fraser runs clear and cold at its headwaters, near Tête Jaune Cache, just downstream of Moose Lake in the central Rocky Mountains of eastern British Columbia.
– Erin Vieira, Fraser Basin Council

1. Executive Summary

The Fraser River main stem was designated a heritage river in 1998 based on its exceptional natural, cultural and recreational values. The heritage status of the Fraser River honours the river's remarkable geological history, ecological diversity, its breathtaking beauty and vast scope, its historical and cultural significance to British Columbia and to Canada, and its recreational possibilities. Due to the large number of tributaries and the extensive area of land covered by its drainage system, only the main stem of the Fraser is designated.

The Canadian Heritage Rivers System (CHRS) is the country's national program for acknowledging the natural, cultural and recreational values of heritage rivers across Canada. Federal, provincial, and territorial governments work with local communities and stewardship groups to support the long-term management of our rivers for the benefit and enjoyment of Canadians, now and into the future. The CHRS tells our rivers' stories – the stories of Canada. This story is about the Fraser River.

The CHRS requires the river's proponents to provide a detailed monitoring report each decade to confirm the river continues to express the natural, cultural and recreational values for which it was designated. The first Fraser River 10-year was completed in 2010, affirming its status as a heritage river.

The Fraser River is a richly diverse, dynamic river that continues to deeply influence the ecology and the people of British Columbia and Canada. Overall, the natural, cultural and recreational values for which it was designated a heritage river remain strong and intact. However, issues exist that pose threats to those values, if not addressed. The Fraser is vulnerable to impacts that come from human activities, including habitat loss, fragmentation and degradation, pollution, and invasive species. Its Interior reaches have felt the effects of wild fires, insect outbreaks and associated salvage logging. Climate change alters weather and water flow patterns, increases water temperatures, and rising sea levels may adversely affect estuarine areas. Due to a range

of factors, the Fraser's salmon stocks and other fish show a declining trend, dramatically in some populations. Additionally, Fraser River salmon runs suffered a significant blow in 2018, when the Big Bar rock slide effectively blocked access to salmon returning to spawn, until the route was partially reopened by fast-acting agencies and communities.

Overall the cultural and recreational heritage values of the Fraser River are intact, and are in fact enhanced with the addition of new parks and trails, and the emergence of new cultural interpretation programs and opportunities. A critical exception is where cultural and recreational values relate to fishing: declining stocks have resulted in closing or restricting commercial, recreational and Indigenous Food, Social and Ceremonial (FSC) harvests. First Nation communities are greatly impacted by the decline in harvestable salmon, particularly sockeye, a staple food fish that has always sustained them

However, this report also notes the many actions taken in the past 10 years that address these current and emerging issues to enhance, protect and improve the Fraser's natural, cultural and recreation values. Those specific examples and general discussion of events and actions are contained in the chronology of events and in the heritage values and guideline tables in this report.

Ultimately, this report finds the natural, cultural and recreational values of the Fraser River are intact. The Fraser River should remain a nationally significant Heritage River under the Canadian Heritage Rivers System designation.

Established in 1997, the Fraser Basin Council board represents four orders of government (federal, provincial, local and First Nations) and private and non-profit sectors. The Council is a charitable non-profit organization devoted to advancing social, economic and environmental sustainability in the Fraser Basin and B.C. While not a river management authority, FBC has partnered on and facilitated hundreds of initiatives that impact the health of the river and the wider river basin, including climate change, sustainable fish and fisheries initiatives, watershed planning, stewardship and governance, invasive species management, flood management strategies, and regional programs. It is critical for agencies to work together to successfully safeguard and enhance the Fraser River and the communities and ecosystems that depend on it.

The Province of BC and the Fraser Basin Management Program, precursor to FBC, initiated the Fraser's heritage nomination. A 1999 management plan that describes the principles that would be key to managing the Fraser River are reviewed in Tables 5 and 6.

2. Introduction

The Fraser River was designated a Canadian Heritage River in 1998 for its outstanding natural and cultural heritage values and recreational values, and for its invaluable importance to British Columbia and to Canada.

The national Canadian Heritage Rivers System (CHRS) was established in 1984 to recognize, celebrate and conserve those identified values of exceptional rivers across Canada.

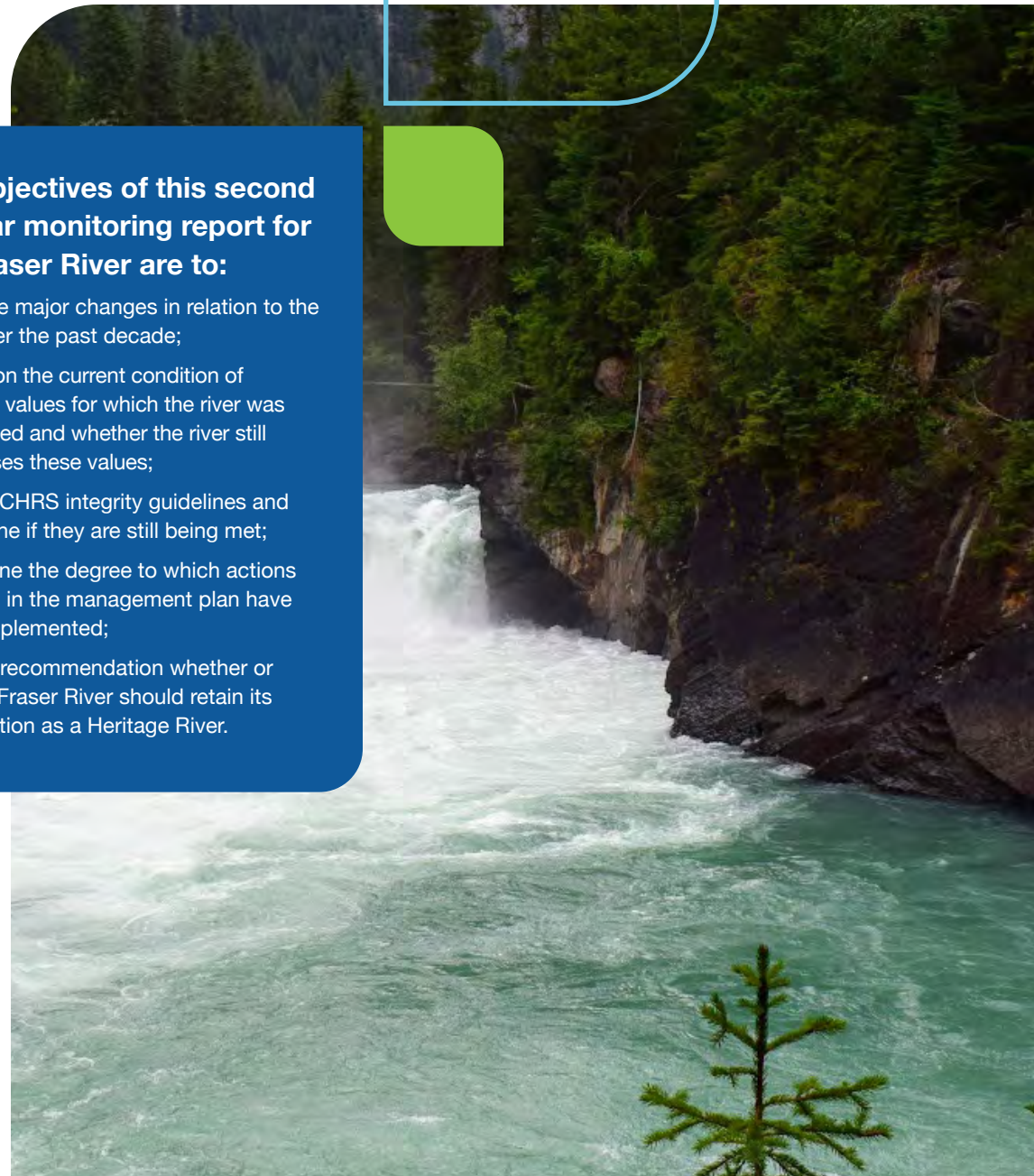
Through a collaboration with federal, provincial and territorial governments, the CHRS endeavours to ensure ongoing management, conservation and recognition of Canada's river heritage. Currently the CHRS, along with governments working with local communities and stewardship groups, recognizes 40 heritage rivers, covering nearly 10,000 km across the nation.

As partner with the CHRS, provinces and territories provide annual reports, monitoring and 10-year reviews to ascertain the heritage river maintains the values for which it received its designation.

The first 10-year monitoring report for the Fraser River main stem was released in 2010. This second decadal report looks at the years 2009 to 2020.

The objectives of this second 10-year monitoring report for the Fraser River are to:

- Describe major changes in relation to the river over the past decade;
- Report on the current condition of heritage values for which the river was nominated and whether the river still possesses these values;
- Review CHRS integrity guidelines and determine if they are still being met;
- Determine the degree to which actions outlined in the management plan have been implemented;
- Make a recommendation whether or not the Fraser River should retain its designation as a Heritage River.



Overlander Falls, in Mount Robson Provincial Park near the headwaters of the Fraser River. – Brock Endean

Overview of the Fraser River Basin

Legend

Transportation

→ Railways

— Highways

— Roads

— Regional Districts

■ Indian Reserves

— Fraser River

— Rivers / Lakes

Fraser Basin Council Regions

■ Upper Fraser

■ Cariboo-Chilcotin

■ Thompson

■ Fraser Valley

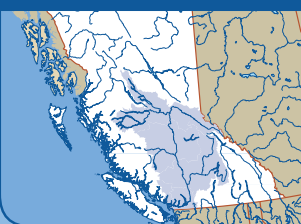
■ Greater Vancouver-Sea to Sky

● Major Communities

Map prepared by Kim MacLean, January 27, 2009



The Fraser Basin



3. Background

One of the most storied rivers in the nation, the mighty Fraser River starts as a spring seeping out of high glaciers and shale near a place called Mastodon Mountain in the Rocky Mountains, then moves north along the Trench, jogs northwest as a respectable river before it swings south just before Prince George to cut through the centre of the province.

From the source to its delta at Vancouver, the Fraser travels 1,375 kilometres, building its power as it collects waters from thousands of creeks and tributaries along the way, draining an astounding 233,100 square kilometre area, or about one-quarter of the province.

Along its route, the Fraser cuts through six of B.C.'s 10 eco-provinces, and seven of its 16 biogeoclimatic zones, which include alpine tundra, pine forests, arid grasslands, dramatic canyons, ancient rainforest and finally, the broad, low-lying floodplain. Here the Fraser rolls another 150 kilometres through pastoral farmlands, made fertile with thousands of years of annual silt deposits, past a maze of fish-producing streams, sloughs and braided channels, past bustling metropolitan centres, and through the marshy Fraser estuary where it pushes into the Strait of Georgia and the Pacific Ocean.

At its mouth, the river's annual muddy discharge is 112 cubic kilometres (27 cu mi) or 3,550 cubic metres per second (125,000 cu ft/s), and it discharges 20 million tons of sediment annually from across the province into the clear salt waters of Georgia Strait.

The Fraser is a river of superlatives. It is the longest undammed river in British Columbia and on the Pacific coast of North America, and the 11th longest river in Canada. The Fraser is the largest river by discharge flowing into the Pacific seaboard of Canada and the fifth largest in the country.

The world famous Hell's Gate Tram is the only descending gondola in North America, carrying its aerial trams down a 152-metre descent where the Fraser explodes 757 million liters of water a minute through the 33-metre wide Fraser Canyon, near Boston Bar. The Golden Ears Bridge in the Fraser Valley is, currently, the longest extradosed bridge in the western hemisphere.

The Fraser River delta is the largest estuary on the Pacific coast of Canada, with an estimated 1.5 million shore birds using or migrating through it each year. While many marshes in the delta are gone, covered by airports, highways and houses from Vancouver to the Canada-US border, the estuary remains the most significant of all of Canada's 597 designated Important Bird Areas, and is a critical stop on the Pacific Flyway for vast numbers of hundreds of bird species, including significant world populations of migratory western sandpipers (over 500,000 birds), wintering dunlin, snow geese, and songbirds.

The Fraser's history is the history of the province. The early river actually flowed north into the Peace River watershed near the end of the Pleistocene ice age, draining a massive lake formed from melting glaciers, around 12,000 to 15,000 years ago. The 7,500-square-kilometre lake extended from where Williams Lake is today, to north of Prince George and west to Vanderhoof, when the glacial barrier at its south end near Big Bar eroded, releasing the waters of 'Lake Fraser' to cleave the Interior plateau and slice canyons through the Coast Mountains to the Pacific. The Fraser's geological story is still clearly etched on the Interior bluffs and canyons in the Coast range that hold the river roiling far below.

Without that change in direction of the Fraser River long ago, the 1,000-sq.km. Fraser delta would likely not exist today.



Today the Fraser sustains freshwater, estuarine and marine ecosystems along its length that provide habitat for an astounding diversity of wildlife, fish and plant species. As Canada's most productive salmon river and on the West Coast, the Fraser has five species of Pacific salmon (genus *Oncorhynchus*), steelhead (sea-faring trout), and the giant, prehistoric-era White Sturgeon.

For Indigenous peoples, the Fraser has been profoundly important to their communities for millennia, as it sustained them, formed their cultures, enabled trade, and connections to other people. A diverse network of First Nations with unique cultural traditions, language groups and dialects have lived and thrived along its reaches. The river is in fact known by many names to the unique Indigenous language groups in the Fraser basin, for example: in Halqemeylem the river is Stó:lō, in Dakelh the river is Lhtakoh, and to the Tsilqot'in people, the Fraser is 'ʔElhdaqox, meaning Sturgeon River, in reverence to the ancient, long-lived fish that live in the waters of the south Fraser. As this relationship remains as fundamental as ever for First Nation communities, it is imperative to protect the Fraser now and for future generations.

Post European contact, the Fraser became a key channel for exploration, commerce and settlement, from 1808 when Simon Fraser sought trade routes for the North West Company, to today, when many sectors rely on the Fraser delta as a major transportation hub from Vancouver to Pacific and American markets. The Fraser corridor facilitates critical transportation by linking national rail lines, highways, pipelines, airports and marine ports and borders.

Today the Fraser River basin is home to three million residents, or about two-thirds of all British Columbians, including about half of the 198 First Nation groups in the province. The Fraser and its basin hold a wide range of economic activities, including resource extraction, manufacturing, agriculture, tourism and recreation. Visitors and residents alike highly value the Fraser for its recreational opportunities, as well as its vast and varied landscapes, and wildlife diversity.

In September 1995, the BC Heritage Rivers Board recommended that the Fraser River be nominated to the national program. With strong public and provincial support in place, the CHRS Board accepted the nomination in 1997 and the formal designation was made in 1998. A management plan was created in 1999 to identify the collaborative partnerships and principles that would be key to future management of the Fraser River.

The heritage status of the Fraser River recognizes the value of the river's outstanding, diverse historical and cultural heritage, geological and ecology diversity, its significant size and impact on the province and Canada, its natural beauty, and recreational opportunities. Due to the large number of tributaries and the extensive area of land covered by the drainage system, only the main stem of the river is designated.

As noted in the previous report, the critical lesson arising from successful initiatives to safeguard and enhance the Fraser River is that working together is essential. We have a shared responsibility to respect the river, to protect it and to endeavor to keep it healthy for future generations of wildlife and people.



Waterfall, Fraser Canyon, Brock Endean

Technicians work on Fraser River
estuary restoration – Raincoast
Conservation Foundation, Alex Harris



4. Methodology

Material used to inform on the changes and activities on the Fraser River in the past decade for this second 10-year review of Fraser River heritage values was collected from readily available sources, including:

- Fraser River CHRS nomination and designation documents;
- Fraser River plan to manage its natural, cultural and recreational values;
- The CHRS natural and cultural heritage values frameworks;
- The annual Fraser River monitoring reports, from 2009 to 2020;
- Discussions with people familiar with Fraser River concerns, including Fraser Basin Council staff, local government managers, and fisheries and river habitat experts, by email and phone;
- Online review of relevant periodicals, media sources, public documents and reports from academic, government, First Nation, private sector associations and non-profit organizations.
- The sources used are referenced in the body of the text.



Sand banks on the Fraser near Dunster, southeast of McBride in the Rockies – Erin Vieira, Fraser Basin Council

5. Chronology

Table 1 lists specific events, actions, research and studies that have occurred on the Fraser River from 2009 to 2020 that are relevant to the CHRS heritage values. Some observations and undated events are also included.

Table 1: Chronology of Events for the Fraser River 2009 – 2020

Year	Events, Actions, Reports
2009	<p>Events</p> <ul style="list-style-type: none"> • February 2, Word Wetlands Day – is recognized by stewardship groups throughout the Fraser Basin, with guided tours, speaker series and other educational outreach efforts. • April 9, 2009 – Experience the Fraser The provincial Ministry of Tourism announces \$2.5M for Metro Vancouver and Fraser Valley Regional District to develop Experience the Fraser, a recreational, cultural and heritage project to connect 550 km of current and future trails, amenities and sites for communities and tourists along the Fraser River from Hope to the Salish Sea. www.metrovancouver.org/services/parks/ParksPublications/ETFDraftConceptPlan.pdf • August 2009 – First Nation fishers and recreational anglers form a joint working group. Tensions on the Fraser River between anglers and First Nation fishers led to a violent incident, in which a local chief was shot in the face with a pellet gun. The perpetrators fled and were never charged, but the confrontation galvanized First Nations, sport fishing leaders, DFO, RCMP and others into action to address and prevent any such conflict in the future on the Fraser. http://fraseriverpeacemakers.ca/wp-content/themes/Vizio.1.7/images/media/PR-Cooperation-Sharing-Fraser-River-(BCWF-aug.27.2009).pdf The Lower Fraser joint working group met regularly to resolve issues and plan events for public education on ‘river manners.’ <p>Annual Events: Yearly events are held in communities along the Fraser, and include public engagement clean-up events, Rivers Day and other festivals. They are noted here as ‘annual events’ and are assumed to continue, unless they are cancelled or are markedly different from other years.</p> <ul style="list-style-type: none"> • March 2009 – Annual Gill Road cleanup at the Fraser River draws hundreds of volunteers. Each April and September, to mark BC Rivers Day, the Chilliwack-Vedder River Cleanup Society holds similar, smaller cleanup events along this tributary to the Fraser. • November 2009 – the annual Fraser Valley Bald Festival celebrates the return of the Bald Eagle to the Harrison River estuary at the confluence of the Harrison and Fraser Rivers, with information displays, riverboat tours with guest speakers including Dave Hancock, BC’s renown raptor expert who sets up eagle cams for online viewing, and viewing areas at Chehalis Flats where visitors can observe eagles, hawks, herons and other wildlife in the estuary, and talk to bird and wetlands specialists to about the wetland ecosystem.

Year	Events, Actions, Reports
2010	<ul style="list-style-type: none"> • April 14, 2010 – The Lower Fraser joint working group, a group of First Nation fishers, recreational anglers and authorities release the video River Manners, to promote harmony, understanding and conservation on the Lower Fraser River. https://www.youtube.com/watch?v=JbyYW9cerxA&feature=emb_logo • May 15, 2010 – District of Mission Spirit Square and Trail Demonstration Project opens at Jack Poole Harbourside Park, to mark the start for a future Mission's riverfront revitalization. The Fraser Valley Regional District and District of Mission project features a public gathering space at Mission Harbour on the Fraser River, and is the first new trail segment for Experience the Fraser (ETF). Spirit Square and ETF promote active living in the Fraser Valley through enhancing outdoor recreation opportunities and connecting residents and visitors with their communities, nature and the Fraser. • October 2010, the Stó:lō Research and Resource Management Centre, opens in the heart of S'ólh Téméxw ('Our World; Our Land'), on Coqualeetza grounds in Chilliwack, formerly the site of the Coqualeetza Residential School (1886-1940) and Coqualeetza Indian Hospital (tuberculosis sanatorium, 1941-1969). The SRRMC provides a host of services for Stó:lō communities, and heritage and cultural services with an understanding of and respect for Stó:lō protocols for business, universities, governments, non-profits and other groups. • Lower Fraser Fisheries Alliance (LFFA.ca) is established with 30 First Nation communities from the Fraser Canyon to the mouth of the Fraser River. It was formed to build Tier 1 inter-First Nation networks and capacity; Tier 2 relations with governments; and Tier 3 relations with commercial and recreational fishers and other river users. Its mission is to support the management of a robust and expanding First Nation fishery in the Lower Fraser River. • September – Numerous B.C. Rivers Day celebrations in communities throughout lower reaches of Fraser. http://www.orcbc.ca/pro_bcriversday.htm
	<p>Action</p> <ul style="list-style-type: none"> • 2010 Harrison River named Salmon Stronghold – The Harrison River is designated an International Salmon Stronghold by the North American Salmon Stronghold Partnership. The Harrison Salmon Stronghold, Canada's first, represents one of the most ecologically significant Pacific salmon rivers in Northern America, and one of the most productive salmon ecosystems in the Pacific. As such, it requires careful planning and environmental stewardship to preserve it as a reliable salmon refuge. The Stronghold encompasses a 2,500-sq km watershed, including the 60-km long Harrison Lake and four primary salmon-producing tributaries. Sources: <ul style="list-style-type: none"> • http://www.stsailesdevcorp.com/natural-resources/harrison-salmon-stronghold • https://www.cmnbc.ca/atlasgallery/harrison-salmon-stronghold-restoration-and-stewardship-atlas/
	<p>Reports</p> <ul style="list-style-type: none"> • March 2010 – 10-year monitoring report on CHR designation is released. It lists several management plan strategies as 'ongoing.' These refer to regular management, monitoring and stewardship actions by government and non-government organizations. • Rivershed Society's BC Perspectives on Fresh Water survey of BC residents reaffirmed that a strong majority care deeply about our water resources and 72% strongly believe that "ensuring that the protection of nature, wildlife and species like salmon are always a top priority even if it slows economic development." • Summer – Fall 2010 Higher than predicted return of Fraser Sockeye Salmon with an estimate of more than 25 million fish, although concern for overall Fraser salmon stocks persists. Water temperature increases due to climate change may affect salmon survival in future. Habitat loss along the Fraser continues due to urban development, agriculture, logging and the impacts of the mountain pine beetle epidemic in Interior forests: CHRS annual report • November 2010 – Fraser Valley Bald Eagle Festival world record The annual event that draws crowds to view eagles on Chehalis Flats, reports a world record count for bald eagles. Biologist David Hancock recorded 7,362 individual eagles in a 3-kilometer section of Chehalis Flats, and estimated several thousand more in nearby trees and southward to Harrison Bay. This is almost twice the size of any earlier recorded gathering of eagles anywhere in the world. A gradual build-up in numbers of wintering eagles at Chehalis Flats/Harrison Mills over the previous 15 years may be due to a decline in other spawning salmon populations in northern rivers, in particular the collapse of northern chum runs in 2010. http://fraservalleybaldeaglefestival.ca/preserve/

Year	Events, Actions, Reports
2011	<p data-bbox="296 217 373 240">Events</p> <ul data-bbox="296 256 1787 553" style="list-style-type: none"> <li data-bbox="296 256 1787 342">• March 2011 – Fraser Valley Illegal Dumping Alliance (FVIDA) leads annual Fraser River cleanup with local community volunteers, sponsors and stewardship groups, to clean the foreshore at the Gill Road access, to raise awareness of the negative impacts of illegal waste on riparian and salmon and sturgeon habitats, and to promote stewardship of the Fraser River. <li data-bbox="296 358 1787 415">• September 2011 – BC Rivers Day celebrated with local stewardship groups hosting events along the Fraser and its tributaries, including riverside cleanups, nature walks and paddling events. <li data-bbox="296 431 1787 456">• November 2011 – White Sturgeon Tag Day with BC Institute of Technology to educate students about sturgeon conservation and research methods. <li data-bbox="296 472 1787 553">• November 2011 – the annual Fraser Valley Bald Festival celebrates the return of the Bald Eagle to the Harrison River estuary at the confluence of the Harrison and Fraser Rivers, with information displays at various locations in communities on the Fraser's north shore between Mission and Kilby, BC; visitors can observe eagles and other birds from viewing areas in the estuary region, and talk to bird and wetlands specialists to learn out this ecosystem. <p data-bbox="296 570 384 592">Actions</p> <ul data-bbox="296 609 1797 1138" style="list-style-type: none"> <li data-bbox="296 609 1797 756">• Sept. 8, 2011 – Roberts Bank Wildlife Management Area is designated under the Wildlife Act. The WMA protects 8,770 hectares of intertidal mudflats and estuarine marshes in the Fraser estuary. Roberts Bank is of international significance for birds migrating on the Pacific Flyway. In 2001, Bird Life International recognized Roberts Bank and the entire Fraser Estuary as a globally significant Important Bird Area. In 2005, Roberts Bank became part of a Western Hemisphere Shorebird Reserve Network in recognition of the significant world populations of migratory western sandpipers (over 500,000 birds) and wintering dunlin that use this area. <li data-bbox="296 773 1797 821">• Fraser River Sturgeon Conservation Society develops stewardship programs and promotes sturgeon spawning sanctuary areas in the lower Fraser, such as Herrling and Carey Islands. <li data-bbox="296 837 1797 951">• 2011 Salmon Safe BC – The Pacific Salmon Foundation partners with Fraser Basin Council to adopt and deliver Salmon-Safe BC, a third-party certification program that recognizes businesses and organizations that adopt land management practices to protect and improve Pacific salmon habitat and water quality. The program includes Salmon Safe Agriculture, which began with 22 farms and ranches achieving certification, rising to 45 farms by the end of 2014: salmonsafe.ca <li data-bbox="296 967 1797 1138">• April 2011, Fraser River Debris Trap fund – The provincial government and Port Metro Vancouver create permanent funding and management for the debris trap. Wood debris in the lower Fraser River threatens public safety, navigation, recreation and habitat, especially during spring freshet, between Hope and Agassiz. Since 1979, the Fraser River debris trap received government funds on a yearly basis. Later the Fraser Basin Council was the FRDT committee secretariat for 12 years. A 2006 Fraser River Debris Trap, A Cost Benefit Analysis (Ivo Thonon) shows the trap saves more than \$8 million in cleanup and repairs costs, paying for itself 12 times over. The Agassiz debris trap continues to divert logging debris for removal from the main stem to protect navigation. <p data-bbox="296 1154 390 1177">Reports</p> <ul data-bbox="296 1193 1797 1406" style="list-style-type: none"> <li data-bbox="296 1193 1797 1276">• The Fraser River is listed in the B.C. Outdoor Recreation Council's 2011 BC's Most Endangered Rivers List (#4) http://www.orcbc.ca/pdf/ER/2011/Release2011.pdf Threats include urbanization, industrial development, habitat loss for spawning and rearing areas for young fish, commercial activity on the river, and increase in catches from the recreational fishing sector. <li data-bbox="296 1292 1797 1406">• Eulachon: The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) designated the Fraser River population of Eulachon as endangered in May 2011. Since the early 1990s, many traditional fisheries for this species have seen catastrophic declines of 90% or more, and the species faces extirpation in many rivers. The cause is unclear but factors may include reductions in marine survival associated with shifting environmental conditions, unintentional by-catch, directed fishing and predation.

Year	Events, Actions, Reports
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2012

Events

- **March 2012** – Fraser Valley Illegal Dumping Alliance (FVIDA) leads annual Fraser River cleanup with local community volunteers, sponsors and stewardship groups, to clean the foreshore at the Gill Road access, to raise awareness of the negative impacts of illegal waste on riparian and salmon and sturgeon habitats, and to promote stewardship of the Fraser River.
- **September 2012** – BC Rivers Day celebrated with local stewardship groups hosting events along the Fraser and its tributaries including riverside clean-ups, and organised nature walks and paddling excursions.
- **November 2012** – White Sturgeon Tag Day with BC Institute of Technology to educate students about sturgeon conservation and research methods.
- **November 2012** – Fraser Valley Bald Eagle Festival; festival celebrating the return of the Bald Eagle to the Harrison River estuary at the confluence of the Harrison and Fraser Rivers.
- **June 2012** – At its summer meeting, the Lower Fraser joint First Nation and recreation anglers working group adopts the name **Fraser River Peacemakers**. They work to educate anglers and First Nation fishers on 'river manners,' prevent conflict and promote safety and conservation: www.fraserriverpeacemakers.ca

Actions

- From 2006-2012, the **Fraser Salmon and Watersheds Program**, co-managed by the Pacific Salmon Foundation and Fraser Basin Council jointly supported more than 300 projects to improve watershed governance, fisheries management, habitat, and public engagement in watershed stewardship. An offshoot of this program is the adoption of the U.S.-founded **Salmon Safe B.C.**, an eco-certification program that encourages businesses and farmers to use practices that protect Pacific salmon habitat and water quality.

Reports

- **March 2012** – Release of **sediment movement report** by Michael Church, UBC. The general rate of gravel accumulation is slow and does not justify regular gravel mining for flood management, but extraction work does threaten salmon and sturgeon spawning beds and rearing habitat, the report finds. https://ibis.geog.ubc.ca/fraserriver/reports/The_problem_with_the_Fraser_River_MChurch.pdf <https://www.theglobeandmail.com/news/british-columbia/new-report-digs-deeper-on-effects-of-gravel-mining-in-fraser-river/article10274211/>
- **October 2012: Cohen Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River** provides an extensive review of conditions regarding this fishery. It made 75 recommendations, including habitat protection with no net loss, advancing biodiversity in ecosystems, adopting ecosystem-based management practices, advising DFO to divest itself of salmon farming as it conflicts with its mandate to protect wild salmon stocks, and immediately implementing an earlier 2005 Wild Salmon Policy.

Year	Events, Actions, Reports
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2013

Events

- **March 14, 2013** – The 833-hectare **Fraser River Breaks Provincial Park** 12km north of Williams Lake in the Cariboo-Chilcotin opens. A protected area, it is home to one of the densest concentrations of the SAR flammulated owl in North America, and Townsend's big-eared bat, while its Douglas fir and grasslands provide winter range for mule deer.
- **March 2013** –The Burrard Inlet Environmental Action Program and the Fraser River Estuary Management Program closes. The intergovernmental program that coordinates environmental management reviews and interagency communications for projects and shoreline developments in the Burrard Inlet and the Fraser River estuary. Port Metro Vancouver takes the lead role in coordinating project review applications, until a new form of the partnership is created. <https://www.burnabynow.com/local-news/fremp-dismantled-but-new-model-established-2936675>
- **September 2013** – **The Fraser River Discovery Centre** in New Westminster coordinates Riverfest to mark BC Rivers Day, while numerous stewardship groups marked the day with cleanups along the Fraser and tributaries and other cultural events.
- **Fraser River Discovery Centre**, New Westminster – Second floor opened with three new exhibits in this centre, which first opened overlooking the Fraser in 2001. It has grown steadily since, in size, scope and educational impacts through displays and campaigns.
- **Port of Vancouver** launches its **Fraser River Improvement Initiative**, a five-year, \$2-million program to address derelict vessels, structures and trespassing to improve public safety and reduce negative impacts on the environment.
- **Ongoing annual events: short list here. Cleanups. November 2012** – Fraser Valley Bald Eagle Festival is held over several days in Chehalis.

Actions

- **Fraser River Sturgeon Conservation Society** coordinates a catch, tag and release program with volunteer anglers in the summer and the fall as part of their ongoing monitoring and assessment program. Sturgeon populations on the Fraser River are designated as endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

Reports

- **Fall 2013** – While returns of spawning Pink Salmon are very strong, estimated at 26 million fish, summer returns of Sockeye salmon were much lower than expected, prompting a total salmon fishing closure in some reaches of the river in August 2013. Higher than normal water temperatures in the river and lower than normal flow volumes may be at least partially responsible for high mortality rates for returning Sockeye in the Fraser.
- **Fall 2013** – **Outdoor Recreation Fraser River** again lists the Fraser River as among B.C.s most endangered rivers (#2), citing threats to the health of the river from urban and agricultural pollution, bank hardening and gravel removal from the stretch of the river between Hope, B.C. and Mission, B.C. The ORC makes note of the Fraser's status as a Canadian Heritage River as a potential catalyst and motivator for improved environmental practices along the river.

Year	Events, Actions, Reports
2014	<p data-bbox="296 217 373 240">Events</p> <ul data-bbox="296 256 1801 828" style="list-style-type: none"> <li data-bbox="296 256 1801 316">• July 11, 2014 – Cheam Fishing Village & Campground opens to safe boating access for anglers on the north side of the Fraser. Set in Cheam First Nation territory on Pilalt Tribal grounds, people have occupied this ancient Stó:lō fishing village site for 10,000 years. <li data-bbox="296 329 1801 414">• Summer 2014 – Rivershed Society of BC held its Sustainable Living Leadership Program in 2014 with seven participants selected to travel 1,400 kms down the Fraser by canoe, raft, shuttle van, or on foot. Participants study watersheds, salmon, resource management, and engage with peers, facilitators and local leaders to learn from their experiences and knowledge. <li data-bbox="296 427 1801 511">• August 2014 Harmony on the Fraser – Fraser River Peacemakers held a meeting facilitated by Fraser Basin Council to discuss the coming salmon fishing season. The Peacemakers' work to promote river etiquette and build good relations between First Nations and recreational fishers over the last five years was celebrated. Fraser River Peacemakers brings Indigenous & sport fishers together to resolve conflict on the river as they pursue shared salmon resources. <li data-bbox="296 524 1801 787">• Aug. 4, 2014, Mount Polley mine – With the 2014 collapse of the Imperial Metals tailings pond at its gold and copper mine, an estimated 12.8 million cubic metres of tailings flooded into Quesnel Lake along with natural soil stripped by the torrent, leaving a layer of debris from one to more than 10 metres thick. The covered area measured about 5.5 kilometres wide and up to 1.2 kilometres across the West Basin of Quesnel Lake, also affecting Hazeltine Creek and other area waterways. While not on the designated main stem of the Fraser River, Quesnel Lake, which drains via Quesnel River into the Fraser River, this was a significant watershed event. To date (2020) much riparian restoration has been carried out: https://xatsull.com/remediation-continues-at-mount-polley-mine-site/ However, researchers find changes in lake bottom bacteria where the mine waste is deposited, increased seasonal cloudiness in the lake, and copper that is getting into lake bottom organisms: www2.unbc.ca/newsroom/unbc-stories/contaminants-mount-polley-tailings-spill-continue-affect-quesnel-lake How this affects long-term health of endemic freshwater fish and the salmon populations that spawn in this sub-watershed will require continued monitoring and study. https://vancouversun.com/news/local-news/research-into-mt-polley-mine-dam-spill-indicates-environmental-effects-on-quesnel-lake <li data-bbox="296 800 1801 828">• September 2014 – Annual BC Rivers Day celebrations were held in a number of community events along the Fraser River. <p data-bbox="296 844 373 867">Action</p> <ul data-bbox="296 883 1801 1291" style="list-style-type: none"> <li data-bbox="296 883 1801 1112">• June 2014 – Lower Mainland Flood Management Strategy – The provincial and federal government launch the inter-jurisdictional Lower Mainland Flood Management Strategy initiative along with 25 local governments, many First Nations, and private sector representatives from transportation, agriculture and commerce. Fraser Basin Council is manager and facilitator of the process to develop a strategy in two phases, in 2014-2015, involving flood scenario forecasting and analysis, with the second phase from 2016 onward to develop Regional Flood Management Strategy, funding and implementation. The risk of catastrophic loss from flood is greatest in the Lower Mainland, where 300,000 people live and where agriculture and critical infrastructure is of regional, provincial and national significance. The LMFMS will help communities with strategies to prevent and response to flood and rising ocean levels, and protect and sustain environment and environmental values along the lower Fraser River. www.surreynowleader.com/news/regional-push-forms-on-fraser-flood-control <li data-bbox="296 1125 1801 1209">• The Outdoor Recreation Council of BC included the lower reaches of the Fraser near Chilliwack on their annual list of B.C.'s most endangered rivers. The group cited pressure from urbanization, industrial development and agricultural expansion, and a proposed hazardous waste treatment plant being planned for a riverside location near Chilliwack. <li data-bbox="296 1222 1801 1291">• 2014 Sockeye salmon run – The major event on the Fraser was the return of the dominant year of sockeye salmon, which occurs every 4 years. Sockeye returns were strong, estimated at 20.8 million fish, about 7 million fewer fish than in 2010, but still one of the most robust returns in recent years. <p data-bbox="296 1307 394 1330">Reports</p> <ul data-bbox="296 1346 1801 1404" style="list-style-type: none"> <li data-bbox="296 1346 1801 1404">• Provincial government completed two significant studies in 2014: a new design flood level study assessing the design of flood management works in the lower Fraser River, and a new flood risk assessment due to sea level rise resulting from climate change.

Year	Events, Actions, Reports
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2015

Events

- **Summer 2015 – The Rivershed Society of BC** hosts its annual Sustainable Living Leadership Program, with 7 young adults travelling 1,400 kms of the Fraser by canoe, raft, vehicle, and foot. Participants study watersheds, salmon, resource management and engage with peers, facilitators and community leaders to learn from their experiences and knowledge.
- **Sept. 7- 27, 2015** – The **inaugural FraserFest** is launched by **Rivershed Society of BC**, with 7 community festivals, 9 days of rafting , 4 days of canoeing, 3 group bike rides and a walk.
- **March 2015 – Fraser Riverkeepers** help host the 8th annual Gill Road Fraser River access shoreline cleanup in Chilliwack with a BBQ and hundreds of volunteers. Chilliwack-Vedder River Cleanup Society holds its annual April cleanup.
- **September 2015 – The 35th annual BC Rivers Day** events are held, with several events along the Fraser, including a series of festivals and events in Lower Mainland cities and communities, and a cleanup event hosted by Chilliwack-Vedder River Cleanup Society.
- **Fraser River Discovery Centre** in New Westminster launches a working river project to promote understanding of the river's importance to Indigenous communities and culture, including the Musqueam and Stó:lō peoples, the river's ongoing key economic role, and its critical environmental and socio-cultural values.

Actions

- **Lower Mainland Flood Management Strategy (FBC)** continues with Phase I data collection to determine what flood mitigations processes are in place and to identify gaps, insufficiencies.
- **March 2015 gravel extraction:** Seabird Island Band and Jake's Construction carry out surface excavation of 105,000 m3 of gravel from Seabird Bar B, in an area known as the 'Heart of the Fraser,' a critical sturgeon and salmon habitat, near Agassiz, B.C.
 - <https://www.vancouverobserver.com/news/province-approves-controversial-fraser-river-mining-endangering-last-truly-wild-sturgeon-world.html>
 - <https://www.vancouverobserver.com/news/fishing-guides-despair-fraser-river-mining-begins-sturgeon-spawning-area.html>

Reports

- Sections of the Fraser River had low water levels and unusually high water temperatures resulting in lower than expected salmon returns, for some species and runs.
- Several events occurred to celebrate and promote natural heritage and cultural values of the Fraser River, including the inaugural FraserFest.

Year	Events, Actions, Reports
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2016

Events

- A multitude of events occur along the Fraser River through the year, including the **Fraser Riverkeepers** and **Woodtone Products**, 9th annual Gill Road Fraser River shoreline cleanup with BBQ, booths and hundreds of volunteers.
- **Summer 2016 – Rivershed Society of BC** held its annual Sustainable Living Leadership Program in 2016. Several participants were selected to travel 1,400 kms down the Fraser by canoe, raft, shuttle van, and on foot. Along the way, participants stopped at various communities along the Fraser River.
- **Summer 2016 – Rivershed Society of BC** hosted a successful **FraserFest** season with festival events held in Xat'sull on July 24; Williams Lake on July 25; Lillooet on July 30; Yale on August 1; Coquitlam on August 4; Vancouver on August 28; and Boston Bar on September 5.
- **Sept. 25, 2016** – The 36th annual BC Rivers Day was celebrated in dozens of communities around British Columbia.

Actions

- **November 16, 2016** – The Province **designates the 1,033-hectare Lhá:lt/Harrison-Chehalis wetland as a Wildlife Management Area**. Known also as the site for the popular **Fraser Valley Bald Eagle Festival**, the WMA will conserve ecologically productive wetlands that support critical wintering, migration and breeding habitats for five species of salmon, steelhead, Fraser River white sturgeon, trout, raptors, aquatic birds, amphibians, mammals and other wildlife, including internationally significant numbers of bald eagles and Trumpeter swans. The Harrison system and floodplain near the Chehalis, Harrison and Fraser rivers is also internationally recognized as a **Salmon Stronghold** and an **Important Bird Area**. <https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/wildlife/wildlife-habitats/conservation-lands/wma/wmas-list/lhlt-harrison-chehalis>

Reports

- **The Lower Mainland Flood Management Strategy** completes Phase I in 2016, which includes Lower Mainland flood and coastal sea rise scenarios, regional assessment of flood vulnerabilities, current flood protection works and practices. A study notes a catastrophic flood could cause \$20-\$30B in loss and damages in the region. Phase 2 will focus on developing a regional strategy, and Phase 3 will focus on implementing the plans. www.fraserbasin.bc.ca/Library/Water_Flood_Strategy/FBC_NR_LMFMS_May_30_2016.pdf
- **Pacific Salmon Commission** 2016, reports the lowest sockeye salmon return on the Fraser since records began in 1893, with just 894,000 fish returning.
- **Fall 2016 – Outdoor Council of BC** report notes the **Fraser River** faces pressures from climate change, including increased water temperatures as seen last summer, which stresses returning salmon water is 18C° and higher. Recent studies indicate that First Nations fish catches could diminish by up to 50 per cent by 2050 as marine species move up the coast in search of cooler waters (Outdoor Recreation Council of BC). Particularly along urban stretches of the Fraser River, there is a need for a comprehensive plan to better assess cumulative effects of development projects in the Fraser River estuary.

Year	Events, Actions, Reports
2017	<p data-bbox="296 217 373 240">Events</p> <ul style="list-style-type: none"> <li data-bbox="296 258 1793 315">• March 2017 – Fraser Valley Illegal Dumping Alliance partners with Fraser Riverkeeper and Woodtone Products on a spring cleanup event, attracting hundreds of volunteers to take away debris, waste and nails from the Gill Road at the Fraser River in Chilliwack. <li data-bbox="296 331 1793 388">• Sept. 10, 2017 – Boat tours launched from New Westminster celebrated the heritage river values of the Fraser River and to celebrate the works of six regional community volunteer-led groups, as part of a nation-wide initiative celebrating Canadian Heritage Rivers. <li data-bbox="296 404 1793 493">• Fall 2017 – Dept. of Fisheries and Oceans held a series of Wild Salmon Policy workshops in Vancouver (October 30), Prince George (November 1) and Chilliwack (November 16) to seek input on implementation of the WSP, from ENGOs, stewardship groups, commercial and recreational fishers and general public. The outreach was part of a series of workshops across B.C. <li data-bbox="296 509 1793 599">• Spring 2017 – Release of Robert Moberg's film Giants among Us, 2017, released at community events through B.C. through the year into 2018 part of a Canada150 celebration campaign, highlights the 150-year long life story of the Fraser River white sturgeon, and conservation efforts by Fraser River Sturgeon Conservation Society. <li data-bbox="296 615 1793 704">• Fraser River Peacemakers receive the 2017 National Recreational Fisheries Award for their contribution to the 'conservation, restoration and enhancement of Canada's recreational fisheries and their habitat.' Terry Beach, parliamentary secretary to the Minister of Fisheries, Oceans and the Canadian Coast Guard, presented the award to the members in July 2018 in Agassiz. This is the last year the award was presented. bit.ly/3kP1tGG <li data-bbox="296 721 1793 810">• Summer and Fall 2017 – Record-setting wildfires this year could significantly impact the Fraser River watershed and its tributaries, as forests and ground leave exposed soils vulnerable to erosion. Significant areas in the central and northern part of the Fraser Basin were burned, and could impact hydrology and water quality on the Fraser River. (CHRS annual report.) <li data-bbox="296 826 1793 883">• December 2017 – After wildfire burned over the Fraser River Breaks Provincial Park near Williams Lake, the park has reopened, with cautions to the public about post-fire hazards. <li data-bbox="296 899 1199 922">• Fraser River Discovery Centre – Opens its Journey Through the Working River exhibit. <p data-bbox="296 938 386 961">Reports</p> <ul style="list-style-type: none"> <li data-bbox="296 979 1793 1141">• Ongoing – As part of the Global Rivers Project, the prestigious Woods Hole Oceanographic Institute (WHOI) has been monitoring river chemistry and land-ocean linkages. WHOI teams up with local researchers to perform bi-monthly water sampling for rivers throughout the world. Since 2009 a University of the Fraser Valley team of faculty and students collected samples from the Fraser at Fort Langley for analysis at WHOI. This international collaboration and hands-on learning continues through 2017. See details on findings and their ongoing relationship at: www.whoi.edu/page.do?pid=19735&tid=5&cid=12345 blogs.ufrv.ca/science/2016/07/26/ufv-gate-students-international-guests-sampling-fraser-river-part-global-rivers-observatory-project/ or www.canadiangeographic.ca/article/health-fraser-river <li data-bbox="296 1157 1793 1247">• Threats to habitat quality: (1) recent clearing of 3 lower Fraser River islands for agricultural development, (2) illegal dumping – incidence of dumping of household, construction (asbestos, drywall) and other waste in regional waterways, which include the Fraser River. Recently the Chilliwack-Vedder River cleanup group removed leaking motors from this watercourse. (3) <li data-bbox="296 1263 1793 1409">• Declining fish returns and stocks: <ul style="list-style-type: none"> <li data-bbox="338 1287 1073 1310">• Decline in Interior Fraser Steelhead, in Thompson and Chilcotin stocks <li data-bbox="338 1326 737 1349">• Poor sockeye salmon returns in 2017 <li data-bbox="338 1365 1793 1409">• Stressors on Lower Fraser River White Sturgeon include recreational fishing, climate change, river bottom/depth changes and loss of habitat. <li data-bbox="296 1425 1373 1448">• Chinook: 28,000 salmon fry released April 29, 2017, by Nickomeckl Enhancement Society in Surrey, B.C.

Year

Events, Actions, Reports

2018

Events

- **Kwantlen First Salmon Ceremony** took place on May 4, 2018.
- **Rivershed Society of BC** oversaw:
 - **Annual Sustainable Living Leadership Program** took 10 participants to travel 1,400 kms down the Fraser by canoe, raft, shuttle van, and foot. Two were from the Fraser Basin Council and Canadian Heritage Rivers System's Fraser River Heritage Story Map project. Participants met local stewards along the Fraser.
 - **FraserFest** saw successful festivals in Tuckkwiowhum on August 20; Yale on August 21; Cheam on August 23; Kwantlen on August 24; Kwikwetlem on August 25; and Musqueam on August 26, as well as a Hells Gate raft trip, eco-tours, and group bike rides along the Fraser River.
 - **June 1-3 – Rivers Clinic for Environmental Leaders program** with 18 post-secondary students learning about the Fraser River during a trip from Glen Valley Regional Park to McDonald Beach Park over three days.
- **July 5, 2018** – The fourth annual revitalized **Northern Hardware Canoe Race** in Prince George attracted 80 people in 42 canoes in 2018, with solo, tandem and voyageur categories.
- **November 2018 – Big Bar slide:** A 125-meter cliff gave way at Big Bar on the Fraser about 60 km north of Lillooet, dropping 75,000 cubic metres of rock into a narrow passage that created a massive blockage and five-metre waterfall, effectively closing off passage for virtually most salmon and steelhead runs returning to their mid- and upper Fraser spawning grounds in 2019. Google photos show the slide occurred some time in late 2018, but was not discovered till June 2019.

Actions

- **2018 Salmon Safe** – Management of the certification program Salmon-Safe BC is transitioned fully to the Fraser Basin Council. See Salmonsafe.ca
- **October 11, 2018** – the Ministry of Fisheries and Oceans and the Coast Guard, release the **Wild Salmon Policy 2018-2022 Implementation Plan**, which outlines nine overarching approaches and 48 actions DFO is committed to undertake and lead over five years in order to implement Canada's Policy for Conservation of Wild Pacific Salmon – also known as the Wild Salmon Policy (WSP): <https://www.pac.dfo-mpo.gc.ca/fm-gp/salmon-saumon/wsp-pss/annual-annuel/2019-2020-eng.html>

Reports

- **January 2018** – COSEWIC classified the Thompson-Chilcotin River run steelhead as endangered in an emergency assessment, as the population collapsed 81% over the last three generations. The 58 mature fish at the most recent count were just 5% of the pre-2000 mean; if the current rate of decline persists for another three generations, the number of spawning fish will decline to 11, which is 0.9% of the pre-2000 abundance. Threats include declining habitat quality both in marine and freshwater environments, and by-catch mortality from Pacific salmon fisheries.
- **The Outdoor Recreation Council of BC** prepares a list of endangered rivers every two years at www.orcbc.ca/pro_endangered. An excerpt from an ORC 2018 release reads: 'Also high on this year's list is the Heart of the Fraser, where the recent and extensive clearing of Herrling and Carey Islands, along with a corresponding private bridge proposal, is threatening the most productive salmon and sturgeon habitat in all of Canada. The excessive clear cutting of vegetation that has recently occurred has taken a severe toll on the river and destabilized and diminished key fisheries habitats.' "Such extensive clear cutting to the water's edge has damaged one of the most productive stretches of river in our country. There must be a greater effort to protect and restore these habitats." – Mark Angelo, BC Rivers Day founder.
- **Recent hot summers** in B.C. are creating much warmer waters in the Fraser River, which cause stress for migrating salmon and can cause them to die before they spawn, according to the DFO. ([CBC source](#), [DFO source of data](#)).
- **Wildfire impacts** – There is concern that the significant magnitude and extent of wildfires in 2017 and 2018 may negatively impact runoff and sediment transport patterns for the Fraser River, some tributaries, and ecosystem functioning and biodiversity – CHRS annual report.
- **October 2018 – The Department of Fisheries and Oceans (DFO)** provides its final update on its response to the 2012 **Cohen Commission on the Decline of Sockeye Salmon in the Fraser River's** 75 recommendations. Previous updates were made in 2016 and 2017. By 2018, DFO and Environment and Climate Change Canada (ECCC), and the Province of British Columbia have taken action to address all 75 of these recommendations.
 - DFO's update notes work on many of the Cohen recommendations will continue, particularly across several key areas, such as salmon stock assessment, health status assessment, habitat protection and restoration, precautionary approach to salmon aquaculture, and fisheries management. Many commitments are reflected in the Wild Salmon Policy 2018-2022 Implementation Plan that outlines specific activities and approaches led by DFO over the next five years towards restoring and maintaining healthy and diverse Pacific salmon populations and their habitats.

Year	Events, Actions, Reports
2019	<p data-bbox="296 217 373 240">Events</p> <ul style="list-style-type: none"> <li data-bbox="296 256 1829 418">• April 2019 – Release of the <i>Heart of the Fraser</i> documentary, created by Ken Ashley, director of BCIT Rivers Institute, and produced by NERV Productions. The film looks at the critical importance of the gravel reach in the Lower Fraser to sturgeon, salmon species including Chinook that are vital for Southern resident orca groups, and myriad other species. Herrling and Carey Islands are two of only four mid-river major island complexes left in the gravel reach of the Fraser between Mission and Hope, known as the Heart of the Fraser for its critical habitat and productivity in the river. However, recent extensive land clearing on the islands threaten the protective side channels and sloughs. The film is a call to preserve and improve critical habitats on the lower Fraser; stripping of trees, farming, roads and bridges on the flood-prone islands threaten the nursery habitat for millions of juvenile salmon: bit.ly/2YQYAwW and bit.ly/2ObRmBm www.heartofthefraser.ca <li data-bbox="296 435 1829 540">• March 2019 – Fraser Valley Illegal Dumping Alliance, annual community clean up of the Gill Road access area to Fraser River draws more than 700 volunteers, to pick up trash, nails left over from burned pallets, renovation waste, motor vehicles, bringing in 6.5 tons of discarded material from seven sites. FVIDA estimates they have collected more than 150 tons of waste from Gill Channel area alone in past 12 years. FVIDA volunteers clean up other areas through the year, and report habitat destructive activities (abandoned cars, truck rodeos) on exposed gravel beds along Fraser to RAPP and authorities. See also Mar. 24/19 Chilliwack Progress: bit.ly/3q3V9yF <li data-bbox="296 557 1829 605">• River cleanups – Communities all along the Fraser hold annual river cleanup events in spring and fall, including in the Interior, Metro Vancouver and the Chilliwack-Vedder Cleanup Society, which hosts events every April and September for BC Rivers Day. <li data-bbox="296 621 1829 670">• Rivershed Society, FraserFest – Fraser Basin Council was a canoe sponsor for Fraser FEST 2019 as part of World Rivers Day events. The FBC team canoed the leg from Glen Valley and Kwikwetlem First Nation. The day allowed FBC staff to see the watersheds they support and to feel connected to the vitality they provide communities. <li data-bbox="296 686 1829 824">• Fraser River CHRS designation plaque – Text updated in 2019 for a new plaque includes the history and significance of the Fraser to local hə́ŋdəmíhə́m-speaking (Halq'éméylem, part of central Coast Salish language group) Indigenous peoples, and a Halq'éméylem translation. FBC worked with local First Nations and French translators, River Market, City of New Westminster, BC Parks, and Parks Canada on the revised plaque. The new version may be dedicated in September 2021 (pending pandemic public health orders) at the Fraser River Discovery Centre, New Westminster, BC, to align with FraserFest events and the first of the salmon runs entering the Fraser. <p data-bbox="296 841 384 863">Actions</p> <ul style="list-style-type: none"> <li data-bbox="296 880 1829 961">• Spring 2019 – Nature Trust of BC acquires the 11.6-hectare Nicomen Slough Conservation Area, located where Inch Creek and Norrish Creek join the Fraser River, with a donation of the Federal Ecological Gifts Program. Since 1978 the Nature Trust has conserved almost 700 acres in the area, starting with the Chehalis Conservancy. Plans are to restore areas to their natural state and ensure the property remains a suitable habitat for wildlife. <li data-bbox="296 977 1829 1131">• February 2019 – Raincoast Conservation Foundation opened three 50-metre sections of the 8-km Steveston jetty to allow movement of young salmon, other species, sediments and water into the estuary delta and marsh that were blocked off since 1900. Within weeks, chum and Chinook fry, some from the Harrison River, were moving into protective habitats. Over time, the unimpeded flow of the river will create natural channels onto Sturgeon Bank. RCF plans to continue building connectivity of critical rearing habitats through other barriers such as the North Arm jetty and Iona causeway, and in the southern portion of the Fraser estuary at Roberts Bank, a highly productive eelgrass area which is challenged by fragmentation from BC Ferries causeways, and the current and proposed expansion of Deltaport by the Port of Vancouver. Source: www.raincoast.org/2019/06/great-news-juvenile-salmon-moving-through-habitats-reconnected-after-100-years/ <li data-bbox="296 1148 1829 1196">• November 2019 – Fraser Valley Bald Eagle Festival continues with displays, Fraser River boat tours, and viewing areas with interpretive guides at the area known as Chehalis Flats, near the confluence of the Harrison and Fraser Rivers, just south of Kilby. <li data-bbox="296 1213 1829 1294">• May to July 2019 – Fraser River sturgeon decline prompts fishing closures, March 13, 2019, Vancouver Sun – See bit.ly/3tp6c7Q Provincial gov't closes three sturgeon spawning channels to fishing, citing struggling white sturgeon population numbers. Conservationists fear farming and logging activities on Herrling Island and nearby islands have a destructive impact on the surrounding river ecosystem. <li data-bbox="296 1310 1829 1391">• June 2019 Heart of the Fraser – An application for a bridge permit to access Herrling Island and Carey Island is denied and development proponents have withdrawn their application. Next steps are to press DFO the islands for protection as Canada's first Ecologically Sensitive Area, work with the Province to develop a collaborative model, and to acquire key private properties in the area that have sensitive habitats. See HeartoftheFraser.ca <li data-bbox="296 1408 1829 1481">• Fall 2019 – Proposed Gill Road Regional Park: In response to dumping illegal waste and activities on the river foreshore, the City of Chilliwack begins the process to oversee the Gill Channel access to the Fraser River, to jointly manage the regional park for 30 years, with the Fraser Valley Regional District and with support from DFO. A gate is introduced to discourage night use and pallet burning the area.

Year	Events, Actions, Reports
2019	<p data-bbox="296 215 388 240">Reports</p> <ul style="list-style-type: none"> <li data-bbox="296 256 1837 313">• International Year of the Salmon – To commemorate this year, Fraser Valley Watersheds Coalition features a series of salmon stories by Matt Foy, FVWC chairperson and a retired DFO fish biologist: fvwc.ca/2019-international-year-of-the-salmon <li data-bbox="296 329 1837 410">• March 2019 – Port of Vancouver Fraser River Improvement Initiative completes a five-year, \$2M program to address 151 sites with derelict vessels and structures to improve river habitat and safety. www.portvancouver.com/news-and-media/news/completion-of-fraser-river-cleanup-program-improved-local-waterways-environment-and-wildlife-habitat <li data-bbox="296 427 1837 711">• June 2019: Big Bar rock slide discovery elicits a heroic response from a range of First Nations, provincial and federal agencies, who quickly coordinated efforts to stabilize the rock face, clear routes for natural passage, and to move exhausted spawners with fish wheels and ladders, seines, cannons, helicopters and trucks to transport 60,000 fish to safety above the slide, before very limited natural passage was restored in September. For more information see: www.pac.dfo-mpo.gc.ca/pacific-smon-pacifique/big-bar-landslide-eboulement/index-eng.html <ul style="list-style-type: none"> <li data-bbox="342 557 1766 613">• Significant concerns about fish migration, stress and mortality remain and much more work is required to clear the slide. Many Fraser River salmon fisheries are closed or limited. <li data-bbox="342 630 1787 711">• Despite ongoing mitigation efforts, the slide will negatively impact salmon and steelhead populations for several cycles, and the impacts may take years to completely dissipate. Various communities and agencies are collaborating. See DFO reports, media: https://www.cbc.ca/news/canada/british-columbia/big-bar-landslide-salmon-extinction-1.5377632 <li data-bbox="296 727 1837 808">• Sept. 19, 2019 – Pacific Salmon Foundation announces a \$29,250 grant to the Outdoor Recreation Council for a Heart of the Fraser study to identify critical salmon habitat meriting protection in the Fraser River. This reach of the Fraser is one of the most productive stretches of river on the planet, say proponents: www.heartofthefraser.ca <li data-bbox="296 824 1797 906">• BC Salmon Restoration and Innovation Fund – the provincial and federal governments will provide up to \$142.85M over five years, to 2024, for works to ensure the sustainability of wild Pacific salmon and other fish stocks: https://www.dfo-mpo.gc.ca/fisheries-peches/initiatives/fish-fund-bc-fonds-peche-cb/index-eng.html <li data-bbox="296 922 1837 1037">• December 2019 – Outdoor Recreation Council released its annual report on the state of the Fraser River. It finds threats to the Fraser River reached their highest level in decades this past year making it the most critically endangered river in BC if not all of Canada going into 2020. The ORC Rivers Chair Mark Angelo calls for quick action to restore habitats and make them more resilient to climate change. The Fraser remains such a seminal part of the province and one of the great rivers on the planet so it's essential we do all we can to protect it. See bit.ly/37dmUfR

Year	Events, Actions, Reports
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2020

Events

- With the **onset of global pandemic restrictions in response to the spread of COVID-19**, many annual and unique events, programs and projects in B.C. were postponed, cancelled, scaled down or modified from early in 2020 continuing into 2021, in response to public health guidelines and orders.
- **March 2020 – Fraser Valley Illegal Dumping Alliance** cancels its annual Gill Road cleanup at Fraser River. Small FVIDA groups and volunteers in other river adjacent areas continue to collect waste and report infractions to RAPP/CO Service, RCMP and local authorities through 2020, including trucks driving through shallow gravel beds that may provide habitat to juvenile pink and chum salmon and sturgeon.
- **May 2020 – Sturgeon (Fraser) River law:** The Tsilhqot'in Nation and ?Esdilagh (Alexandria) First Nation leaders enacted a historic Elhdaqox Dechen Ts'edilhtan (Sturgeon River Law) as a first step to protecting the Fraser from pollutants and other impacts. The law will require any proposed activities that may impact the river to have the Nation's free, prior and informed consent. Elhdaqox Dechen Ts'edilhtan is part of the broader Tsilhqot'in laws governing lands and water in ?Esdilagh territory. <https://www.thestar.com/news/canada/2020/05/28/bc-first-nation-adopts-historic-law-to-protect-fraser-river.html>
- **Fraser Basin Council (FBC)** youth program develops the **Fraser River Heritage Story Map** project on behalf of Canadian Heritage River Systems and Parks Canada. The interactive storytelling tool highlights the Fraser River's cultural, natural, and recreational heritage values, with 43 cultural, 27 natural and 38 recreational features. The Story Map went online in 2020.
- **My Climate Story – FBC** collects stories from young adults in B.C. on how climate change impacts the Fraser River's cultural, natural and recreational heritage values, along with their actions taken to address these impacts. These are profiled on FBC Youth Program's My Climate Story online platform, where youth share personal stories of climate change, at www.myclimatestory.ca
- **Sept. 27, 2020** – Outdoor Recreation Council celebrates the **40th anniversary of BC Rivers Day** with almost 70 events held around the province: www.orcbc.ca/wp-content/uploads/2020/11/BCRD-2020-Wrap-Up-Visual.pdf
- **Fall 2020 – Fraser Valley Bald Eagle Festival** is cancelled permanently after 25 years. However, as the raptors and other species continue to return to feed on salmon carcasses, visitors are encouraged to take a self-guided tour through the Chehalis Flats Bald Eagle & Salmon Preserve, now also a Wildlife Management Area. A destination for wildlife, bird watchers and photographers can view an area of wetland that is similar to what wetlands looked like in the region pre-European contact and development. See fraservalleybaldeaglefestival.ca
- **Summer 2020, the release of the Fraser River coffee table book: *The Fraser: River of Life and Legend***, by Carol and Rick Blacklaws. See *Vancouver Sun* review, bit.ly/3cqXNc8

Year	Events, Actions, Reports
2020	<p data-bbox="296 217 384 240">Actions</p> <ul data-bbox="296 256 1829 1166" style="list-style-type: none"> <li data-bbox="296 256 1829 289">• Coastal Restoration Fund projects, www.dfo-mpo.gc.ca/oceans/crf-frc/bc-cb-eng.html <ul data-bbox="344 302 1829 496" style="list-style-type: none"> <li data-bbox="344 302 1829 386">• Fraser Valley Watersheds Coalition: \$776,524 to restore former 14.5-hectare Tom Berry quarry, quarried to supply rock for the Coquihalla Hwy., to its original function as an off-channel habitat adjacent to the Fraser River that was a rearing area for juvenile Chinook, Coho and sockeye salmon, and restore its capacity to support a floodplain ecosystem in form and function. <li data-bbox="344 399 1829 451">• Raincoast Conservation Foundation: \$2.6M project to improve habitat connectivity and natural processes on the banks of the Fraser estuary, which will help juvenile Chinook and other salmon improve their early marine survival, and many other estuary species. <li data-bbox="344 464 1829 496">• Ducks Unlimited: \$2M to restore and reconnect Fraser River delta wetlands to improve water flow. <li data-bbox="296 509 1829 834">• Spring 2020 to 2021 – Big Bar remediation efforts continue at the slide site, including precarious rock climbing efforts to set rock blasts; engineering and building alternative fish passage routes, including a concrete fish ladder and resting pools, and a flexible, pressurized fish tube that projects fish to a safe distance above the rock dam. Returning salmon in fall are observed in resting pools, jumping the rapids, and in spawning areas upstream. <ul data-bbox="344 610 1829 834" style="list-style-type: none"> <li data-bbox="344 610 1829 665">• December 2020, the federal government (DFO) announces a \$176 million contract is awarded to Peter Kiewit Sons of Burnaby to build a permanent fishway, or fish ladder, at the Big Bar site, with the goal of having it operational for early salmon runs in 2022. <li data-bbox="344 678 1829 734">• Significant concerns about fish migration, stress and mortality remain and much more work is required to clear the slide. A range of fisheries are limited or closed. <li data-bbox="344 747 1829 834">• Despite ongoing mitigation efforts, the slide will negatively impact salmon and steelhead populations for several cycles, and the impacts may take years to completely dissipate. Various communities and agencies are collaborating. See DFO reports, media: https://www.cbc.ca/news/canada/british-columbia/big-bar-landslide-salmon-extinction-1.5377632 <li data-bbox="296 847 1829 932">• Spring 2020, Proposed Gill Road Regional Park – Due to pandemic restrictions, the process the City of Chilliwack began to apply to the province to create a regional park along the Fraser River at Gill Road and Gill Channel has been delayed. A gate is closed at night to discourage illegal camping and partying on the gravel flats at night. <li data-bbox="296 945 1829 1000">• June 2020 Fraser River Breaks Park – With pandemic restrictions closing parks throughout BC temporarily, this park is re-opened for limited day-use as of June 1, 2020, as are some other provincial parks. <li data-bbox="296 1013 1829 1068">• Formation of the Fraser River Collaborative Table, which includes First Nations communities of the Lower Fraser and sport fishing interests – it adopted many of the parameters used by the Fraser River Peacemakers inform the FRCT mandate. <li data-bbox="296 1081 1829 1166">• 2020 Salmon Safe BC – Fraser Basin Council embarks on a program to add more participants, including urban sites such as the Vancouver International Airport, Mountain Equipment Co-op and Telus, and re-launched Salmon Safe Agriculture to engage more agricultural partners, including wineries across southwest BC. See more at salmonsafe.ca

Year	Events, Actions, Reports
2020	<p data-bbox="300 215 388 240">Reports</p> <ul style="list-style-type: none"> <li data-bbox="300 256 1816 345">• July 2020: In spring 2020, Province fisheries report steelhead spawning estimates were 257 fish for the Thompson, and 38 for the Chilcotin, although the latter count was hindered by pandemic related restrictions. These results mean these populations remain in a state of Extreme Conservation Concern. Threats to steelhead include declining habitat quality both in marine and freshwater environments, and by-catch mortality from Pacific salmon fisheries. <li data-bbox="300 362 1816 557">• Lower Mainland Flood Management Strategy: <ul style="list-style-type: none"> <li data-bbox="342 402 1816 459">• A lower Fraser River 2-D hydraulic model is completed and is used to simulate 26 different flood scenarios to better understand the potential depth and extent of large Fraser River and coastal floods. This tool is used in a variety of ways to inform regional and local flood mitigation planning. <li data-bbox="342 475 1816 557">• August: LMFMS launches www.floodwise.ca The website features a pictorial history of the 1894 and 1948 Fraser River floods, data-rich technical reports, tool kits, approaches to flood proofing, and a two-part video series called When the Waters Rise, which examines flood hazards and LMFMS partner collaboration on their local responses. The site lists Flood Strategy works to date and as they unfold. <li data-bbox="300 573 1816 654">• Pacific Salmon Commission forecasts the lowest sockeye salmon in the Fraser River since tracking began in 1893; hydroacoustics at Mission counted 293,000. About 100,000 of those sockeye were estimated to be from the Harrison River stock. The previous low record for sockeye was in the brood year of 2016, with 894,000 sockeye salmon returning. <li data-bbox="300 670 1816 816">• Fraser River Sturgeon Conservation Society (FRSCS) – FRSCS releases its annual population assessment for White Sturgeon in the lower Fraser River and estuary, which indicates that Fraser sturgeon numbers in 2019 (44,809 fish) was four percent lower than in 2018, and 25% lower than in 2006. Models suggest that the continuous, 13-year population decline is seen mainly in significant reductions in juvenile sturgeon numbers. This is indicative of the loss of prey food, loss of habitat for spawning, rearing and prey food, and mortality from in-river fishing. https://www.frasersturgeon.com/wp-content/uploads/2020/08/2019-Program-Update_1-Page.pdf <li data-bbox="300 833 1816 914">• Fall 2020, the 2019 Outdoor Recreation Economic Impact Analysis in the Fraser Valley Regional District study is released by the regional district. The FVRD's first-ever comprehensive baseline analysis on the value of outdoor recreation found recreationists spent an estimated \$1.8 billion for services and products in 7.4 million recreation days in the region in one year: www.fvrd.ca/EN/main/about-the-fvrd/projects-initiatives/outdoor-recreation.html <li data-bbox="300 930 1816 1060">• September 2020, Canadian Heritage Rivers Commemorative Plaque – Fraser Basin Council finalizes arrangements under the Canadian Heritage Rivers program for a new trilingual (English, French and Halq'eméylem, the language of the Stó:lō) plaque and wrapper for an installation at the New West Quay. FBC worked with local First Nations and French translators, River Market, City of New Westminster, BC Parks, and Parks Canada on the revised plaque. As the commemoration event planned for September was cancelled due to pandemic restrictions, an event may be held on Canada Rivers Day in June 2021, or later in September, pending pandemic concerns. (<i>Fraser Basin Council, October 2020 board report.</i>)

1. Fraser River White Sturgeon is the largest freshwater fish in North America. This baby could live for 150 years, grow to six metres and weigh up to 600 kilograms. – Robert Moberg Films
2. Cheam Fishing Village boat launch in Agassiz offers visitors a quiet spot to watch the river or to cast a line. – ITBC Credit: Indigenous Tourism BC
3. Some Fraser salmon travel as far as Overland Falls in Mt. Robson Provincial Park, a distance of 1,100 kilometres, to return to their natal gravel beds to spawn and complete their life cycle – Drew Farwell



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6. Natural Heritage Values

6.1 Background

The Fraser River was designated as a Canadian Heritage River based on these natural heritage values:

- The geology and hydrology of the river provide outstanding examples of processes associated with the major glaciations in British Columbia. The glacial processes that formed the Fraser River and surrounding areas have determined much of the history of the province of British Columbia through their influence on topography and settlement
- The Lower Fraser River and delta provide remarkable examples of historic and ongoing fluvial and geomorphologic processes. These processes have a continuous influence on both the biotic and abiotic environments of the Lower Fraser River
- The Fraser River Canyon provides an excellent example of natural formations and features and demonstrates hydrologic processes by which powerful rivers can shape landscapes over time
- The Fraser River exhibits a wealth of wildlife values and contains along its course habitats of several rare or endangered species, particularly white sturgeon. The river is known internationally as a significant salmon-producing river and also supports an outstanding diversity of bird species that are of national and international importance.



Lower Fraser River looking north over Hatzic Bend, an important white sturgeon area. – Christina Toth, Fraser Basin Council

6.2. Condition of Values Since Nomination

Climate change is affecting natural cycles in the Fraser River and in ecosystems across its basin. Peak flows occur earlier in the year, with the Fraser reaching half of its annual cumulative flow on average nine days earlier than it did 110 years ago. Records show the Fraser River is trending toward smaller mountain snow packs and earlier melt onsets with the spring freshet coming 10 days earlier, leaving grasslands and forests drier earlier and more vulnerable to wild fires. Spring freshets are projected to advance by an average of 25 days in the Fraser River in coming decades. Current observations and further projections show that water temperature will increase in the main stem of the Fraser, as well as in tributary systems, which will negatively impact fish species if they cannot adapt quickly. This has serious implications for salmon, a keystone species of the Fraser River ecosystem.

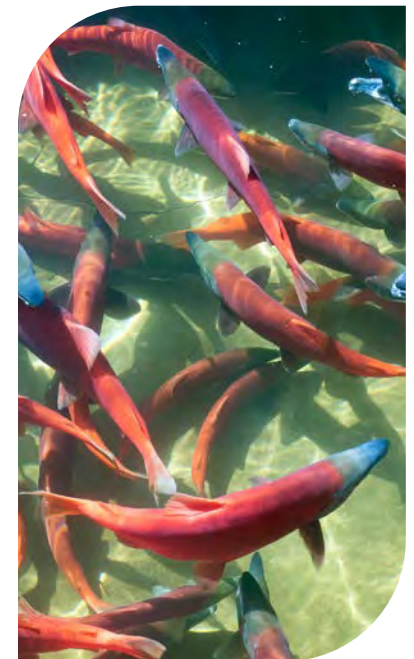
Serious concerns regarding declining salmon stocks have continued since the last CHRS decadal report. Runs do fluctuate – in 2010, an estimated 34.5 million sockeye returned to the Fraser, one of the largest in 100 years, while the previous year saw 1.5 million. However, trends over the past two decades show a downward trend. The year 2016 saw the lowest sockeye return on the Fraser since records began in 1893, with just 894,000 fish returning. Then in the following brood year of 2020, that figure fell to another record low, with just 285,000 returning, according to **Pacific Salmon Commission**. Southern populations of Chinook are of concern. Of the 13 wild Fraser River Chinook salmon populations assessed by COSEWIC, only one was not at risk as of 2020. Chinook is the primary prey species consumed by the South Coast resident orcas.

Fortunately other salmon species such as pinks and chum and specific runs, those that don't spend as much time in freshwater, seem to be remaining stable.

Researchers are looking at multiple factors that may underlie the decline in salmon stocks including freshwater habitats where salmon rear and return to spawn, by-catch, habitat deterioration and loss from agricultural use, pollutants and development. Warming ocean currents may bring competing fish species, and change the amount and quality of prey food in the oceans.

Another blow to the salmon story was the late 2018 landslide at Big Bar, when an estimated 110,000 cubic metres of rock broke off a 125-metre cliff into the Fraser, blocking all access to migrating Pacific salmon to upstream spawning grounds, potentially disrupting the reproductive cycle of several Upper Fraser salmon for generations. All levels of government and First Nations have poured their efforts into re-engineering the passage, and adding fish ladders and resting pools. There is reason to be hopeful: a similar disaster occurred in 1914, when rock blasts from railway crews blocked fish passage in Hell's Gate, and desperate communities carried fish upstream by hand. Runs eventually recovered.

Lower Fraser River white sturgeon numbers are another concern; numbers have averaged 45,650 since 2001 but the overall population appears to be in decline. Adult numbers are up, while juvenile sturgeon decreased by 63% in one fishery area, and their annual growth is 37% less in 2019 than it was in 2002, suggesting a low food supply and increased stress. Since 2019, certain spawning and rearing areas for sturgeon have been closed for this catch and release fishery.



Red salmon group – courtesy of Fraser Basin Council

A third fish of concern are eulachon. Designated by COSEWIC as endangered in May 2011, they are an important food fish for salmon and sturgeon. Management plans are underway, in concert with Indigenous and commercial fishing communities to reduce by-catch and to improve estuary habitats.

How ongoing climate changes will affect the Fraser's salmon, sturgeon and eulachon, as well as other species, are unknown, as are the effects of warming ocean waters on the sea-going fish. Projections for sea level rise may also mean floods and consequent risks for ecosystems in flood prone areas.

For this reason, **monitoring** the effects of rapid climate changes and impacts on ecosystems is critically important in order to adapt management plans appropriately to maintain natural values.

Equally crucial are **protecting and restoring fish habitats**, for spawning, rearing, feeding and resting, along the river's channels, sloughs, wetlands, tributaries and seaside estuaries in order to support fish of all species and stages with adequate cool, oxygenated water with adequate shelter and prey species.

Climate change exacerbates challenges affecting Interior grasslands and forests. Bunchgrass regions are at risk to habitat loss from agriculture, development, invasive species, and larger, more intense wildfires resulting from fire suppression policies and changes in climate.

Since the early 1990s, mountain pine beetle outbreaks affected more than 18 million hectares of lodgepole and ponderosa pine forest, including areas of the Fraser Basin watershed. The Province expected that by 2020 the infestation will have killed an estimated 55 per cent of B.C.'s mature merchantable pine.

Despite the challenges to the Fraser basin, there is good news as well – the Fraser is resilient and its scope is massive, and wherever we help wild systems recover, they respond with vigour.

Federal and provincial governments are supporting First Nation communities and stewardship groups to restore and revive fish habitats, particularly important in the Lower Fraser. Programs such as the BC Salmon Restoration and Innovation Fund, the Coastal Restoration Fund, the Canada Nature Fund for Aquatic Species at Risk and other programs target habitat rehabilitation.

Measures are underway in the Lower Fraser to restore critical fish habitats for sturgeon and salmon, and to designate a section of channels and islands a “Ecologically Significant Area” (ESA), the first such new designation under the *Fisheries Act*.

With targeted management and harvesting, the province is gaining control over the mountain pine beetle and similar pests. Working with First Nations, the Cariboo-Chilcotin Ecosystem Restoration Committee and communities, provincial agencies carry out annual prescribed burns help suppress fire hazards and revive native ecosystems.

Public awareness and understanding of the need to protect wild places is growing, as is support for meaningful actions. Despite all the current challenges, the Fraser is still a robust, diverse system. All of the listed natural heritage values persist on the Fraser River, and natural integrity guidelines are fulfilled, the river merits continued status as a Canadian Heritage River.



Salmon pair – courtesy of Fraser Basin Council

1. Juvenile salmon quickly moved into restored Fraser River estuary when access was opened.
2. Where the Fraser meets the Pacific – the estuary is an important rearing habitat for young salmon.
3. The Pacific rushes into newly opened Fraser estuary channel.

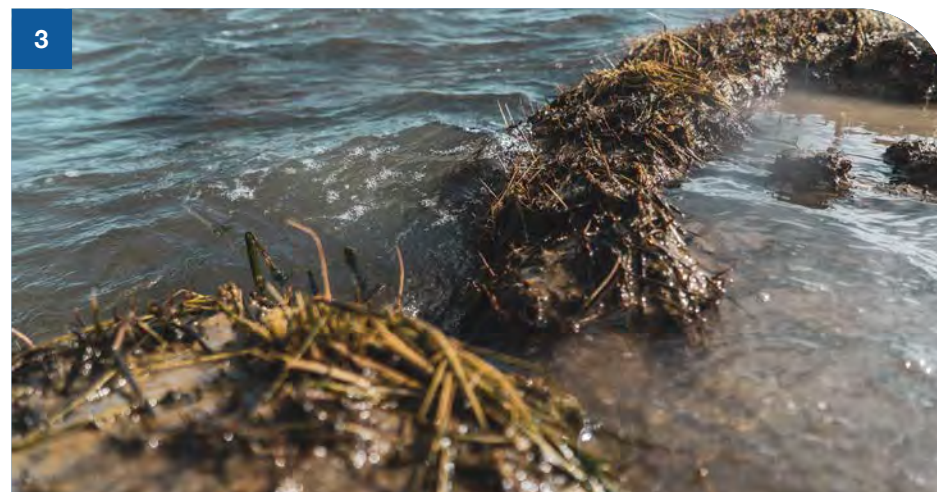
Photos from Raincoast Conservation Foundation, Alex Harris



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Table 2: Changes to Fraser River Natural Heritage Values

THEME 1: HYDROLOGY | 1.2 Seasonal Variation

Description of Change in Value	<ul style="list-style-type: none"> • Peak flows occur earlier in the year, with the Fraser reaching half of its annual cumulative flow on average nine days earlier than it did 110 years ago (measured at Hope.) Typically peak flows, freshets are from late May to early June but dates are trending earlier as climate change brings earlier spring temperatures. The lowest flows are from September to April. • Seasonal changes have occurred in several locations in the Fraser Basin. While volumes overall are consistent, flows are modestly reduced in winter, increased in spring, and strongly decreased during summer. Low early autumn water levels and increased river water temperatures will have negative impacts on salmon species, may suffer and die as temperatures rise. • The Fraser River area is seeing smaller mountain snow packs and earlier snow melts resulting in a 10-day advance of the spring freshet (with subsequent reductions in summer flows) for the 1949–2006 period (Kang et al., 2016). Spring freshets are projected to advance by an average of 25 days (RCP4.5 and RCP8.5) in the Fraser River (Islam et al., 2017) in coming decades. Mean annual peak flow is projected to occur between five and 15 days earlier. During the 2050s (between 2041 and 2070), annual stream flow is projected to increase in the Fraser River. • https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/Climate-change/pdf/CCCR-Chapter6-ChangesInFreshwaterAvailabilityAcrossCanada.pdf • By 2070-2099 models project the Fraser's peak flows will be lower and will occur 24 days earlier. Overall volumes could decrease by 5%: Morrison et al, 2002, Climate Change in the Fraser River Watershed: Flow and Temperature Projections.
Reason For Change	<ul style="list-style-type: none"> • A warming climate is leading to changes in weather patterns and consequently precipitation, evaporation, and timing of snowmelts that contribute to earlier peak volume trends.
Actions Taken in Response	<ul style="list-style-type: none"> • Lower Mainland Flood Management Strategy (LMFMS) created in 2014 to help the region address current and future flood events. • In 2014-16, in response to climate change implications that will alter weather patterns, snow packs, river cycles and rising sea levels, the Fraser Basin Council commissioned a study to review potential impacts of catastrophic flood and sea rise scenarios in the Lower Mainland. With funding from provincial, federal and local governments, FBC completed the first two phases of the LMFMS to assess risks and current practises, to map Lower Fraser contours and floodplain areas, to engage a broad array of governments and communities, and to create a user-friendly website, www.floodwise.ca • Phase 3, starting in 2021, will compile regional priorities, risk reduction options, funding and methods. Environmental groups and international flood engineering experts provide their advice. In 2019, the Province of B.C. retained FBC through 2021 to undertake a province-wide series of investigations to inform and support flood strategies across the province.

THEME 3: RIVER MORPHOLOGY | 3.4 Fluvial Landforms

Description of Change in Value

- June 2020: The thalweg or deepest part of the Lower Fraser, below Chilliwack and to the northwest of Abbotsford, is shifting westward and has become deeper, 35 years of records show. This movement was identified in a 2019 bathymetric survey undertaken by Northwest Hydraulic Consultants for the City of Abbotsford that reviewed data from 1985 to 2019. This could have implications for erosion sites along this south bank near the Hatzic bend in recent years (in 2020 there were 7 sites), where the deepening river current has been eroding the south bank since the 1990s and moving closer to the Matsqui dike. Source: www.bclocalnews.com/news/deepest-part-of-fraser-river-shifting-course

Reason For Change

- The Fraser River is a dynamic river, with a complex series of braids and changing channels, particularly in the Lower Fraser west from Hope. These changes also affect the depth and location of deep channels as the movement of water and sediment naturally alters the river bottom and shores. This is a natural action of the river.

Actions Taken in Response

- City of Abbotsford has and will continue to stabilize the banks with riprap to reduce the river current impact on the south shore adjacent to Matsqui Prairie. See www.abbynews.com/news/engineers-to-build-large-model-of-fraser-river-to-analyze-erosion-near-abbotsford
- The economic impact to the city and B.C. from a dike breach at Matsqui Prairie is an estimated \$2.6 billion. The Matsqui dike protects nearly 5,000 hectares of diverse agricultural land, historic Clayburn and Matsqui Villages, Matsqui First Nation village, and regional infrastructures, including Highway 11, three railways, a National Defense communication centre, BC Hydro towers, gas mains, a water transmission main and the JAMES wastewater treatment plant. Source: City of Abbotsford, report No. ENG 15-2015, March 9, 2015).

THEME 4: BIOTIC ENVIRONMENTS | 4.1 Aquatic Ecosystems

Description of Change in Value

- Ongoing and new impacts of land use activities along the length of the Fraser, in particular in the Lower Fraser, have resulted in substantial human-caused loss and damage of aquatic habitats over the past 120 years.
- From the sandbars of the Lower Fraser west of Hope to its estuary outlets, there is loss, damage or threats to fish habitat, including gravel reaches, side channels, streams, tidal flats, estuaries and wetlands. Climate change poses a range of threats to aquatic species viability, including high water temperatures, plant overgrowth, and reduced oxygen. These areas are critical spawning, rearing and transit areas for several fish species. Damage or loss of these habitats poses threats to all species of salmon, white sturgeon, eulachon, other species including prey fish species and invertebrates, and over time, to the biodiversity of the river system.
 - However, while the aquatic ecosystems of the Fraser face many challenges, in the past decade there have been increasing federal and provincial policies and efforts made to restore, rehabilitate and protect these areas, to raise public awareness of these threats and the natural, cultural and economic values of aquatic ecosystems, and to incite relevant governments and agencies to adopt legislations and to provide funds for habitat rehabilitation. First Nations provide their traditional knowledge alongside conventional science as partners or leaders in these efforts. Non-governmental organizations, stewardship and conservation groups and others are more active, engaged and supportive of restoration as B.C. society in general gains an awareness and understanding of the critical values these systems provide.

Reason For Change

- Draining, covering and isolating aquatic systems for agriculture, commercial and urban development, resource extraction (logging, gravel removal), infrastructure (dikes, roads, pumps) and climate change further challenges ecosystems.
- Threats to salmon and sturgeon spawning channels in Lower Fraser: February 2015 – BC Ministry of FLNRO and DFO approve the removal of 105,000m³ of gravel from the Fraser River until March 15, with stipulations to avoid sensitive sites and restore fish habitat.
 - <https://www.theprogress.com/news/seabird-gravel-removal-project-gets-the-go-ahead>
 - <https://www.nationalobserver.com/2015/01/29/news/province-approves-controversial-fraser-river-gravel-mining-project>
- Increased activity in sensitive spawning areas, for example, unregulated vehicles driving through salmon and sturgeon spawning beds at Gill Slough on the Fraser River when gravel areas are exposed during low water.
- **June 2019 – Big Bar** slide is reported to DFO. In late 2018, an estimated 110,000 cubic metres of rock broke off from a 125-metre cliff into the Fraser at a narrow point at Big Bar near Lillooet, B.C., effectively closing the route to Pacific salmon and steelhead migrating upstream to their spawning grounds, disrupting the reproductive cycle of several significant Interior and Upper Fraser populations.

Actions taken in response

- Provincial, federal and First Nation governments collaborate, along with local authorities and communities, on recovery strategies and steps for species and ecosystems at risk. While not exhaustive, a few notable examples follow.
- **Sept. 8, 2011 – Roberts Bank Wildlife Management Area** is designated under the provincial Wildlife Act. This WMA protects 8,770 hectares of intertidal mudflats and estuarine marshes in the Fraser estuary. Roberts Bank is of international significance for birds migrating on the Pacific Flyway, and designated in 2001 as an Important Bird Area.
- **November 16, 2016** – The 1,033-hectare Lhál't/Harrison-Chehalis wetland is designated as a **Wildlife Management Area**. The site for the popular Fraser Valley Bald Eagle Festival, this WMA will conserve ecologically productive wetlands that support critical wintering, migration and breeding habitats for five species of salmon, steelhead, Fraser River white sturgeon, trout, raptors, waterfowl and other birds, amphibians, mammals and other wildlife, including internationally significant numbers of bald eagles and Trumpeter swans. The Harrison system and floodplain with the Chehalis and Harrison Rivers, and connected to the Fraser, is also internationally recognized as a Salmon Stronghold and an Important Bird Area. <https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/wildlife/wildlife-habitats/conservation-lands/wma/wmas-list/lhlt-harrison-chehalis>
- **August 2018 – BC Wildlife Federation (BCWF)** launches the **Heart of the Fraser** campaign to preserve Herrling and Carey Islands and other gravel habitats between Hope and Mission considered to comprise “one of the greatest salmonid and sturgeon networks of channels, islands and wetlands of its type in the world.” BCWF and other conservationists raise public awareness about environmental values of the gravel reaches and channels, with the goal of having the area declared an Ecologically Sensitive Area (ESA).
- **October 11, 2018** – DFO releases the **Wild Salmon Policy 2018-2022 Implementation Plan**, which outlines nine overarching approaches and 48 actions DFO is committed to undertake and lead over five years in order to implement Canada’s Policy for Conservation of Wild Pacific Salmon – also known as the Wild Salmon Policy (WSP): <https://www.pac.dfo-mpo.gc.ca/fm-gp/salmon-saumon/wsp-pss/annual-annuel/2019-2020-eng.html>
- **Spring 2019 – Nature Trust of BC** acquires the 11.6-hectare **Nicomen Slough Conservation Area**, where Inch Creek and Norrish Creek join the Fraser River, with a donation from the Federal Ecological Gifts Program. Since 1978 the Nature Trust has conserved almost 700 acres in the area, including the Chehalis Conservancy. Plans are to restore areas to a sustainable natural habitat for wildlife.
- **Powerline Bar, Fraser River, Agassiz, 2019** – Ayelstexw Sustainability Consulting completes a three-year project funded by Cheam First Nation and DFO to rehabilitate living foreshore and gravel channels at Powerline Bar near Gilcrest Island, to provide resting and rearing areas for salmonid species and sturgeon. The work is part of Cheam First Nation’s program to restore banks and reaches of the Fraser River within their core tribal Pilalt Territory. <http://ayelstexw.ca/projects/salmon-habitat-restoration>

Actions taken in response

- **Connected Waters – In April 2016, Watershed Watch Salmon Society** launches its campaign to reconnect 1,500 kilometres of salmon habitat blocked by outdated flood infrastructure in the Lower Fraser. They begin with awareness campaigns with city councils and the farming sector, create the committees to restore Katzie Slough and Hope-Camp Slough, and develop a map of 150 former spawning areas blocked by dikes from the Fraser, at <http://cmnmaps.ca/WatershedWatch/>. Riparian restoration began in Katzie Slough in 2017. In 2019, Connected Waters receives funding from DFO's BC Salmon Restoration & Innovation Fund to identify suitable sites for restoration.
- **June 2019, Heart of the Fraser** – The Province (FLNRORD) denies an application to build a bridge to access Herrling and Carey Island, citing threats to sturgeon habitat. *Heart of the Fraser* documentary is released to raise awareness of this ecologically critical site. Next steps are to establish the area and the islands as Canada's first "Ecologically Sensitive Area" (ESA), a new designation created under the Fisheries Act. BC Wildlife Federation will work with the Province to develop a collaborative model, and to acquire key private properties with sensitive habitats. See HeartoftheFraser.ca, <https://www.agassizharrisonobserver.com/news/decision-to-protect-island-in-the-fraser-river-lauded/>
- **2019-2021 – Proposed Gill Bar Regional Park:** In response to activity damaging gravel habitat, illegal dumping and camps for several years, the City of Chilliwack applies to the province to oversee the Gill Bar and area access to the Fraser River for 30 years, as a jointly managed regional park with Fraser Valley Regional District and with support from DFO. (Process is delayed due to pandemic.) A gate is introduced to discourage night visitors and pallet burning on the gravel beds. In 2020, after off-road drivers were found driving through known sturgeon and salmon spawning in the channels, DFO begins monitoring and educational outreach, and put up signs informing drivers of trucks, quads, or dirt bikes to avoid mudflats, estuary lands, wetlands, rivers and streams that are fish habitat (*Fisheries Act*, sect. 35(1)). Conservationists call for an immediate ban on off-roading activities on the Gill and Jespersen gravel channels.
- **Coastal Restoration Fund projects 2018-2022**, www.dfo-mpo.gc.ca/oceans/crf-frc/bc-cb-eng.html
 - **Fraser Valley Watersheds Coalition, Fraser side channel:** \$776,524 to restore former 14.5-hectare **Tom Berry quarry** near Agassiz (gravel reach area) used to supply rock for the Coquihalla Hwy., to its original function as an off-channel habitat adjacent to the Fraser River that was a rearing area for juvenile Chinook, Coho and sockeye salmon, and restore its capacity to support a floodplain ecosystem in form and function. Other positive impacts are increased biodiversity, cultural and recreational values with the formalization of an existing trail network. See fvwc.ca/tom-berry-gravel-pit-largescale-salmon-restoration-project/
 - **Raincoast Conservation Foundation, Fraser Estuary:** RCF opened three 50-metre sections of the 8-km Steveston jetty to allow movement of young salmon, other species, sediments and water into the estuary and marsh blocked since 1900, and where more than 70% of the floodplain has been lost. Within weeks of opening, chum and Chinook fry, some from the Harrison River, were in the protective habitats. Over time, the unimpeded flow of the river will create natural channels onto Sturgeon Bank. RCF will continue building connectivity of critical rearing habitats through other barriers such as the North Arm jetty and Iona causeway, and in the southern Fraser estuary at Roberts Bank, a highly productive eelgrass area that is challenged by fragmentation from BC Ferries causeways and the current and proposed expansion of DeltaPort by the Port of Vancouver. Source: www.raincoast.org/2019/06/great-news-juvenile-salmon-moving-through-habitats-reconnected-after-100-years/
 - **Ducks Unlimited:** \$2M is granted to restore Fraser River Delta and wetlands sites.
- **BC Salmon Restoration and Innovation Fund** – the provincial and federal governments will provide up to \$142.85M over five years, to 2024, for works to ensure the sustainability of wild Pacific salmon and other fish stocks: <https://www.dfo-mpo.gc.ca/fisheries-peches/initiatives/fish-fund-bc-fonds-peche-cb/index-eng.html>
- **Fraser River Estuary** continues to be a **designated Important Bird Area** and is recognized as the most significant of all of Canada's 597 designated areas: Important Bird Areas Canada, <https://www.ibacanada.ca/site.jsp?siteID=BC017>

Actions taken in response

- **Stave River tidal flats** – Completed in 2016, the Fraser Valley Watersheds Coalition (FVWC), in partnership with Department of Fisheries and Oceans (Resource Restoration Unit), Recreational Fisheries Compensation Partnership Program, and BC Hydro's Fish Wildlife Compensation Program, restored 7,866m² of off-channel tidal habitat for salmon and other species at Stave River tidal wetland, along with archaeological assessments and a bio-inventory. The site is adjacent to the Fraser and the Lougheed Highway near Ruskin. See www.ducks.ca/stories/pacific-interior/water-levels-drive-invasive-species/
- **Silverdale Creek Wetlands, Mission – 2000s to 2020:** Led by the Stave Valley Salmonid Enhancement Society and working with FVWC, this 112-acre adjacent to an industrial park and Highway 7 has been restored over the years to provide habitat for juvenile salmon, and a wide range of other endemic aquatic, land and bird species. As a bonus, as the system naturally drains during low water, introduced, invasive largemouth bass are stranded and eaten by birds and mammals. Work continued in 2020 as part of BC Ministry of Transportation compensation fund: www.mission.ca/wp-content/uploads/Silverdale-Wetland-Press-Release-2020-Fraser-Valley-Watersheds-Coalition.pdf In December 2020, the District of Mission announces the purchase of a 4.7-acre wetland area to establish the Silverdale conservation wetlands and park, www.bcclocalnews.com/news/district-of-mission-buys-4-7-acre-property-for-wetland-conservation-future-park-space
- **September 2020 – February 19, 2021: Union of B.C. Municipalities Resolution NR16** – The Flood Risk Mitigation Through Green Infrastructure and Natural Assets resolution asks the federal and provincial governments to require and fund nature-based solutions for flood management. More than 1,500 km of streams, sloughs and side channels in the lower Fraser River are impacted by outdated flood control structures that kill fish or block salmon access to vital habitats. Replacing structures with salmon-safe solutions that improve fish passage can help rebuild wild salmon populations, while securing good local jobs and protecting our communities from floods. See NR-16 at page 119, at bit.ly/308XwVx With the encouragement of local ENGOs, the Lower Mainland Local Government Association (LMLGA) brought the resolution to the UBCM virtual meeting in September 2020. Due to Covid-19 related delays, the vote was finalized Feb. 19, 2021. This resolution builds on Resolution B119, passed by UBCM in 2018: Upgrade Flood Infrastructure to Consider Fish and Access to Fish Habitat, which was another step forward for the protection of wild salmon habitat in the lower Fraser.
- **June 2019 – Big Bar slide** is reported to DFO; from summer to winter 2019, DFO, local First Nations, governments and others begin plans on an extensive, unprecedented, innovative and multi-year reconstruction of a narrow Fraser River canyon to reopen the river. The works include rock blasting and clearing, road building, tagging and transport of fish with trucks and pneumatic air pumps; Peter Kiewit Sons ULC is awarded the contract for rock work. While some remediation and human intervention helped fish through the channel, survival rates vary depending on species and water volume; it is not expected the passage can be returned to pre-2018 conditions. As a result of the emergency response efforts in 2019, approximately 276,000 salmon were detected passing Churn Creek, 40 km north of the slide site.
 - In 2020, engineers build 'natural' fish routes using blasted rock, including resting pools for migrating salmon, a fish ladder, in addition to moving fish truck and air pumps. Many populations will be affected over many years, and it has the potential to be a multi-life stage problem. – DFO, Ecofish-Big-Bar-SEF-Science-Workshop-Summary.pdf
 - The Big Bar Emergency Conservation Enhancement Program is critical in supporting the recovery of impacted salmon populations: 20,000 Early Stuart sockeye fry released in 2020 near Fort St. James and Takla Landing were reared from eggs collected from adult salmon that arrived at the slide site in 2019 and could not pass. In 2020, the program reared 120,000 Early Stuart and 12,000 Bowron sockeye, and 99,000 chinook juveniles at hatcheries for release in summer 2021. Big Bar updates, links, photos and videos: <https://www.pac.dfo-mpo.gc.ca/pacific-smon-pacifique/big-bar-landslide-eboulement/response-reponse-eng.html>

**Description of Change
in Value**

- **Grasslands** cover less than one percent (about 0.74 million hectares) of the province's land area, but their habitats are widely diverse and include riparian and wetlands, desert-like scapes, deciduous copses and open forests. As such they carry significant economic, cultural and ecological values for the province. Grassland habitats host an equally robust array of flora and fauna, distinct and unique ecosystems, soil compositions and bioclimatic systems across the sub-boreal, central and southern Interior regions of B.C., much of which are in the Fraser River basin. For example, more than half – 125,275 hectares – of the 233,335 ha. of grassland area in the Cariboo-Chilcotin and Central Interior is in the Fraser basin.
 - One of B.C.'s 14 BEC zones, or biogeoclimatic zones named for one or two specific dominant plants, is the Bunchgrass Zone, specific to the grasslands, although other BECs do include large grassland areas. Grasslands are in uplands, valley bottoms and windswept canyons adjacent to the Fraser, its tributaries and confluences. Each region has its own blend of species, including blue- and red-listed species at risk – plants, birds, bats, mammals, reptiles, insects – including some surprising ones like the American white pelican, which summers in the Cariboo and at White Pelican Provincial Park at Stum Lake, its only nesting site in B.C. Some species thrive – the largest population of California bighorn sheep (500) in North America is often spotted on switchback trails on bluffs above where the Chilcotin River enters the Fraser. Source: Grasslands Conservation Council of B.C., bcgrasslands.org, e-book, BCs Grassland Region, 2017. <https://grasslandrestorationforum.ca/wp-content/uploads/2017/10/Value-of-BC-Grasslands-21809.pdf>
 - Grassland areas are at risk to loss and fragmentation, as historically some areas were grazed, ploughed and logged extensively.
 - On a positive note, efforts from ongoing research, improved knowledge, updated policies and an ever-deepening understanding of the ecological and societal values of these terrains are helping many areas regain their native species of grasses, trees and wildlife. The Lac du Bois area near Kamloops, B.C. has been the centre of Agriculture Canada grassland research since 1928; several ranching, community and conservation groups such as the Cariboo-Chilcotin Ecosystem Restoration Committee, as well as provincial programs are taking up the cause of native grassland. See also Grasslands in sub-theme 5.1
- **Sumas Mountain** – In the Coastal Western Hemlock biogeoclimatic zone, Sumas Mountain is a 6,600-hectare massif mountain rising to its highest point of 910 metres from the sea-level floor of the Fraser Valley, between Sumas Prairie to the south, the Fraser River to the north, and the City of Abbotsford on the west. It is an oasis of wildlife and supports diverse but at times fragmented and threatened ecosystems that include about 40 known species at risk and 27 sub-ecosystems at risk. As an isolated 'island,' the movement of flora and fauna to and from Sumas Mountain is limited by development on three sides, and the Fraser to the north. The small Chilliwack Mountain to the east is a similar geographical wildlife island, however it far more developed.
- **Interior Fraser forests** – An estimated area of more than 18 million hectares of forest with lodgepole and ponderosa pine stands have been decimated by the mountain pine beetle since the 1990s. Ongoing wildfires, including intense forest fires in 2017 and 2018, have removed millions more hectares.
- **Floodplain** – See also Sub-theme 4.1, Aquatic Ecosystems

Reason For Change

- **Grasslands** – Grasslands are at risk to loss and fragmentation from agriculture, historic overgrazing, encroaching forestry practices, urban development, invasive species, pesticides, more larger, more intense wildfires resulting from changes in climate and fire suppression policies starting in the 1940s. While grasslands continue to face these challenges, continued research, improved knowledge and planned strategies from governments and committed community groups are helping many areas regain their native species of grasses, trees and wildlife. Source: bcgrasslands.org, e-book, BCs Grassland Region, 2017.
- **Interior Forests** – Mountain pine beetle (MPB) outbreaks began in the 1990s, peaked in 2005, and continue to a lesser degree today, affecting more than 18 million hectares of predominantly lodgepole and ponderosa pine forest to some extent, in central and north central B.C., including areas of the Fraser Basin watershed. The Province expected that by 2020 the infestation would have killed an estimated 55 per cent of B.C.'s mature merchantable pine (under 740 million m³.) Deforestation in Interior B.C. areas due to MPB, and subsequent salvage logging has affected hydrology in the upper reaches of the Fraser Basin; however this affect decreases as the Fraser moves to the coast, with the potential freshet discharge impacts and the net impact of MPB on Fraser River flows at Hope being negligible. As well, as forests recover, the effects on the hydrology in affected areas are expected to return to normal. https://www.fraserbasin.bc.ca/Library/TR/tr_workshops_summary_hydrology_2010-2011.pdf
- <https://www.nrcan.gc.ca/our-natural-resources/forests-forestry/wildland-fires-insects-disturban/top-forest-insects-diseases-cana/mountain-pine-beetle/13381>
- **Sumas Mountain** – While this sprawling landmark rising from the lower Fraser River floodplain provides an island of sanctuary for many healthy and unique species, its ecosystems and wildlife are also isolated from adjacent habitats. The site faces pressure from habitat fragmentation, destruction and conversion due to urban expansion, expansion of roads and the TransMountain pipeline, resource exploitation including aggregate mining and logging, including that of mature forests critical to the mountain beaver and other endemic species, and increased recreational activity.

Actions Taken in Response

- **Grasslands: March 14, 2013** – The 833-hectare Fraser River Breaks Provincial Park 12km north of Williams Lake in the Cariboo-Chilcotin opens. It is home to one of the densest concentrations of the flammulated owl in North America, a species at risk, as well as the Townsend's big-eared bat, while its Douglas fir and grasslands provide winter range for mule deer. It was established as part of the Cariboo-Chilcotin Regional Land Use Plan; goal 2, protected areas – BC Government.
- **April – May 2018, 2019** – Churn Creek Protected Area, is part of the BC Parks provincial Ecosystem Restoration Program. The 36,747-hectare area on the west flank of the Fraser is mix of dryland canyon, steppe and rangeland flanking Churn Creek canyon and its confluence with the Fraser River. Annual prescribed burns help suppress fire hazards and revive native ecosystems. BC Wildfire and BC Parks held 100-acre burn in April 2019 as part of a 50-year restoration strategy to reintroduce burns to the grassland ecosystem. The area ecology declined since European settlement in part due to natural wildfire suppression, especially since 1943. Historically, Cariboo-Chilcotin grasslands were renewed through frequent, low-intensity ground fires, every 15 years or so, a UBC study found: www.100milefreepress.net/news/fires-used-to-be-much-more-common-according-to-ubc-research Such fires prevented tree encroachment, rejuvenated understory plants, and helped maintain open grasslands, and forests with large trees. Burns improve forage for mule deer and bighorn sheep, and reduce sagebrush, which in turn helps prevent the encroachment of fir trees on open grasslands. See <https://news.gov.bc.ca/releases/2018FLNR0313-002052> and Cariboo-Chilcotin Ecosystem Restoration Committee, www.ccerc.net
- **Interior Forests** – Provincial measures over the past decade to control the native mountain pine beetle with pheromone traps, thinning and removing affected trees, has slowed the spread of this native beetle. Cold temperatures in fall and winter also help slow the beetle. Similar methods are used to control the smaller outbreaks of Douglas-fir, Spruce, and Western Balsam beetles.
- **Sumas Mountain biophysical inventory, 2010** – The City of Abbotsford commissioned this report on sensitive ecosystems inventory and wildlife habitat rating for land use planning, with more than 3,900 hectares assessed. It identified more than 40 species at risk, and 27 ecosystems at risk.
- **Sumas Mountain Inter-regional Park, 2012** – Fraser Valley Regional District and Metro Vancouver joined up to create the first inter-regional park in B.C. The expanded park totals 1,471 hectares, made up of two discrete land parcels that include the existing Sumas provincial and regional park area on the east flank, and other Metro Van and Abbotsford controlled land on the west flank. The goal is to acquire more lands in the future to connect the two parcels. Update: In 2018, Metro Vancouver transferred its portion of the park to Abbotsford, to be serviced by the Fraser Valley Regional District.

THEME 5: VEGETATION | 5.1 Significant Plant Communities

Description of Change in Value

- Overall six of eight B.C. ecosystems assessed as being ‘at risk’ to varying degrees are in the Fraser Basin, including grasslands, estuaries, wetlands, coastal Douglas-fir, riparian systems and bogs. While these areas continue to be at risk, there is greater awareness of the values of these systems, and significant programs are underway to help recover threatened systems.

Reason For Change

- Loss and fragmentation of grasslands from agriculture, historic overgrazing, forestry and fire suppression practices, urban development, invasive species, pesticides, more intense, more frequent and larger wildfires resulting from changes in climate and weather patterns.
- Forests including commercial coniferous stands are affected by fire suppressing measures and wildfires, beetle outbreaks, invasive species and climate change.
- Mixed forests and floodplain regions, particularly in heavily populated areas such as the Lower Mainland, are subject to habitat destruction and fragmentation, development, pollution, invasive species and intense recreational activities.

Actions Taken in Response

- Historically many natural **B.C. grasslands** were grazed and ploughed extensively, but research and improved knowledge is helping many areas regain their native species of grasses, trees and wildlife. Efforts include controlled burns of Interior grasslands, improved management of invasive species and herbicides: bcgrasslands.org, e-book, BCs Grassland Region, 2017 pg. 14. Grasslands Conservation Council of B.C.
- **Mountain pine beetle** – the Province has implemented a range of mitigation measures that are slowing the impact of the beetle. See Sub-theme 4.2, Terrestrial Ecosystems.

THEME 5: VEGETATION | 5.2 Rare Plant Species

Description of Change in Value

- The Fraser Basin region contains a wealth of habitats and rare or endangered species including mammals, birds, reptiles, amphibians, invertebrates and insects. Some populations are under increased threat, while others are responding to restoration efforts.

Reason For Change

- Decades of land modification for industrial, residential and recreational purposes have altered local ecosystems in ways that have degraded or destroyed important habitats for species at risk. Climate change, pollutants, herbicides and invasive species also present threats.

Actions Taken in Response

- **In 2017**, the Province mandated the enactment of an endangered species law that would address animal, plant and habitats at risk. This legislation is under development.
- **Sumas Mountain biophysical inventory, 2010** – The report by Taara Environmental found 30% of the 3,900 hectares reviewed on the 6,600 hectare mountain was Sensitive Ecosystem, 35% was Other Important Ecosystems, and the remaining third was not sensitive. Sumas Mountain and a few other pockets of Fraser Valley forest retain wildlife species; however populations are isolated from each other because habitats on Sumas, Chilliwack and Vedder Mountains, Ryder Lake and Cultus Lake are separated by urban, agricultural and industrial landscapes, with no wildlife corridors or ways to connect. The Sumas biophysical inventory identified more than 40 species at risk, and 27 ecosystems at risk, including pockets of mature forest settings. Some SARA-assessed species with updated management plans include:
 - **Phantom Orchid**, 2020 recovery plan, SARA: <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/recovery-strategies/phantom-orchid-2020.html>
 - Found in moist, relatively undisturbed old growth, mature, coniferous or mixed-wood forests. The Phantom Orchid is a mycoheterotrophic species involved in a three-way relationship with a fungus and a tree, whereby it is parasitic on the ectomycorrhizal fungus associated with the tree species (Taylor and Bruns 1997). Most of the Phantom Orchid lies below ground as thick rhizomes; it requires both the tree and its associated ectomycorrhizal fungus to survive and persist for its own survival.
 - **Silver moss**, *Fabronia pusilla* Raddi (SARA, endangered), which creeps on flat mats over rock, first identified by B.C.'s pre-eminent bryologist Wilf Schofield in 1968. The last foray to seek the diminutive moss was in 2010. <https://www.abbeynews.com/news/mossy-mystery-on-sumas-mountain-has-bedevelled-a-generation-of-scientists/>
- **Garry Oaks** – While found mostly along the Pacific Coast, there were some pockets in the Fraser Valley, including a small isolated stand near Yale in the Fraser Canyon. The Yale Garry Oak Ecological Reserve was created in 1998 to protect the most easterly stand in B.C. Located on 11 hectares on a rocky bluff above the Fraser River, the site is accessible only by boat. Another stand is on the southeast side of Sumas Mountain, but is vulnerable to quarry expansion. Garry oaks are the only oaks in western Canada, west of Manitoba. BC Parks. Populations may expand in the Fraser Valley with climate warming. See also www.Theorca.ca/resident-pod/the-curious-story-of-yales-garry-oak-grove/
- **Estuary** – Wapato, broadleaf arrowhead, or *Sagittaria latifolia*, is an aquatic plant cultivated for its starchy roots by Lower Fraser Coast Salish communities in the past – an archaeological dig in Katzie Territory near Pitt Meadows in 2007 found wapato tubers and harvesting tools dating back 3,900 years. In 2014 Katzie First Nation began work to restore up to 20 hectares of wetlands along the Pitt and Alouette Rivers to introduce native plants like wapato to Katzie territory. <http://www.sccp.ca/sites/default/files/resources/documents/Katzie%20Eco-cultural%20Restoration%20Brochure.pdf>
- Interesting, with climate change and closer study of local habitats, new species of plants are being identified. April 2019, amateur botanist Frank Lomer identified a rare to B.C. yellow monkey flower in a handful of Fraser River tidal flat areas, including Delta, New Westminster, Burnaby, South Vancouver. The *Erythranthe scouleri* typically abides in the Columbia River Valley, Oregon. Threats, development, habitat loss, disturbance. See <http://www.phytoneuron.net/2019Phytoneuron/21PhytoN-Erythranthescouleri.pdf>

THEME 6: FAUNA | 6.1 Significant Animal Populations

Description of Change in Value

For the Fraser River, the big story is fish. While many stocks are doing well and have not experienced reduced numbers, others have declined steady over recent years. Some stocks remain strong and are recognized as important populations. The following are some highlights in notable changes and responses, and is not a fully comprehensive account.

- **Fraser River salmon:** Chinook salmon numbers have declined throughout B.C., as have many southern sockeye and coho populations; to date COSEWIC has assessed some populations as threatened or endangered. Of the 13 wild Fraser River Chinook salmon populations assessed by COSEWIC, only one is not at risk as of 2020. Chinook is also the primary prey species consumed by the South Coast resident orcas. Most pink and chum populations are stable.
- In 2020, returning **Fraser Sockeye salmon** reached just 284,400 fish, a significant decline from a return of two million sockeye salmon in 2012. Ten sockeye Designatable Units (DU) that spawn in the Fraser Watershed are deemed endangered or threatened by COSEWIC (2017), and three DUs are of special concern. Source: DFO, Recovery Potential Assessment for Fraser River Sockeye Salmon, Part 1, Science Advisory Report, 2020/21
- **Fraser River white sturgeon** populations have declined since 2006; notably juvenile sturgeon decreased by 63% in the Albion test fishery, although adult numbers have increased. The annual growth of sturgeon is 37% lower in 2019 than it was in 2002, suggesting a lower food supply and increased stress. Lower Fraser River White Sturgeon Monitoring and Assessment Program update 2019, Fraser River Sturgeon Conservation Society, www.frasersturgeon.com The Fraser River basin supports four stock groups of white sturgeon, including the Nechako, Upper Fraser, Middle Fraser and Lower Fraser groups.
- The oil-rich **Fraser River eulachon** was assessed as Endangered in 2011 by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) due to a decline of more than 50% over three generations (10 years). Once an abundant prey fish for salmon and sturgeon, and important to Indigenous communities for centuries, the commercial fishery was closed in 1997 due to diminishing numbers, as was sport fishing; however, fish are caught incidentally as by-catch. Indigenous FSC harvest (for food, social and ceremonial purposes) continues through communal licensing on a case by case basis.

Reason For Change

- Numbers for species and specific populations have been declining in the past decade. Loss of habitat, resource extraction (logging, gravel removal in Lower Fraser), infrastructure barriers, (dikes, roads, pumps) threaten habitat, as well as increased recreational activity in sensitive spawning areas, such as boats and vehicles driving through salmon and sturgeon spawning beds and rearing habitats.
- **Climate change** further challenges **salmon species**, with heat waves in the ocean and warmer freshwater temperatures, reduced and changing food abundance, competition for food, and disease. The last five years have been the warmest on record, and in Canada the change is double the global average. Some salmon groups and species are more resilient in light of rapid climate and environmental change. Those that spend less time in fresh waters, or spawn in undisturbed fresh waters seem to fare better. Source: State of Pacific Salmon, DFO, 2019.
- **Big Bar slide** is reported to DFO in June 2019. In winter 2018, an estimated 110,000 cubic metres of rock broke off from a 125-metre cliff into the Fraser at a narrow point at Big Bar, near Lillooet, effectively blocking migrating Pacific salmon from moving upstream to their spawning grounds, and disrupting the reproductive cycle of several significant Upper Fraser salmon populations.
- Some protected areas have been named or expanded, or enhanced in the past decade.

Actions Taken in Response

- **Salmon – October 2018**, DFO reported that along with the B.C. government, they had addressed all 75 recommendations of the 2012 Cohen Commission on the state of Fraser River sockeye salmon, which include several ongoing programs to rehabilitate and protect spawning and rearing areas. DFO posted an annual update on this work on its website.
- **In March 2019**, at the second State of the Salmon meeting, DFO Pacific Region initiated the **Pacific Salmon Ecosystem Climate Consortium**, a mechanism to integrate scientific expertise across organizations to refine management responses, habitat restoration and salmon recovery activities for future salmon viability and diversity.
- DFO assesses **Fraser River Sockeye Salmon** stocks for potential recovery priority, along with improving data for each group and life stage, review of management approaches, better understanding and response to climate change effects, and monitoring the long-term effects of the Big Bar slide. (See: DFO. 2020. Recovery Potential Assessment for Fraser River Sockeye Salmon (*Oncorhynchus nerka*) – Nine Designatable Units – Part 1: Probability of Achieving Recovery Targets. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2020/012.)
- **Fraser Chinook**: In 2020, DFO imposed temporary non-retention of Chinook and restricted specific marine and river recreational fisheries, measures similar to 2019; and continue rebuilding access at Big Bar. DFO works with the B.C. government and First Nations to restore and protect critical fish habitats, and adapting to climate change, through its \$142M B.C. Salmon Restoration and Innovation Fund. See: 2020 Fraser River Chinook salmon management measures, DFO; State of Canadian Pacific Salmon 2019.
- **First Nations** on the Fraser are greatly impacted by the decline in harvestable salmon, particularly sockeye, a staple food fish that has sustained them for millennia. Diminished returns of Fraser sockeye and other salmon stocks meant closing or restricting commercial and aboriginal Food, Social and Ceremonial (FSC) harvests on the river. Groups like the Lower Fraser Fisheries Alliance call for an Indigenous-led approach to funded community and ecosystem-based forms of management of habitat and salmon restoration with a long-term, seven-generation perspective. www.theprogress.com/news/time-for-indigenous-led-salmon-strategy-on-the-lower-fraser-says-alliance/
- **Sturgeon closures, 2019, 2020 – Fraser River sturgeon decline prompts fishing closures**, March 13, 2019, Vancouver Sun – See bit.ly/3tp6c7Q Provincial gov't closes three sturgeon spawning channels to fishing from May to July, citing struggling white sturgeon population numbers. This is repeated in 2020. Conservationists fear farming and logging activities on Herling Island and nearby islands have a destructive impact on the surrounding river ecosystem. Feb. 20, 2019: thenarwhal.ca/the-uncertain-fate-of-the-lower-fraser-rivers-last-salmon-island-strongholds/
- Since April 2000, **Fraser River Sturgeon Conservation Society** volunteers have tagged sturgeon and collected data. To date, volunteers tagged and released more than 71,000 White Sturgeon in a 200-kilometer long study area, from the Fraser Canyon to the Fraser estuary. The program has resulted in one of the best baseline datasets on sturgeon in the world, creating an internationally recognized population model. Priority steps for FRSCS include identifying and protecting spawning, overwintering and rearing areas; restricting boating, fishing and driving across sensitive areas, likewise protecting and enhancing prey species on which they rely, including salmon and eulachon.
- **Eulachon management and recovery plan 2020**, DFO – While commercial and recreational fisheries are closed, Indigenous FSC harvest (for food, social and ceremonial purposes) is authorized through communal licensing on a case by case basis, in portions of the Lower Fraser. Eulachon is also under review by SARA for listing. DFO employs the Sustainable Fisheries Framework (SFF) policies in its management approach, and is working with Indigenous fishers. Tests of egg and larvae and monitoring of populations are underway. DFO is working with shrimp and other fisheries to minimize by-catch. Indigenous groups may also work with DFO to restart historic harvest methods. Source: DFO, Pacific region, Integrated Fisheries Management Plan 2021, Eulachon, Fraser River.
- **September 2011 – Roberts Bank Wildlife Management Area** is designated under the Wildlife Act. The WMA protects 8,770 hectares of intertidal mudflats and estuarine marshes in the Fraser estuary. In 2001, Bird Life International recognized Roberts Bank and the entire Fraser Estuary as a globally significant Important Bird Area, critical for birds migrating on the Pacific Flyway. In 2005, Roberts Bank became part of a Western Hemisphere Shorebird Reserve Network in recognition of the significant world populations of migratory western sandpipers (over 500,000 birds) and wintering dunlin that use this area.
- **November 2016** – The Province designates the **1,033-hectare Lhá:lt/Harrison-Chehalis wetland as a Wildlife Management Area**. The WMA is an ecologically productive wetland with critical wintering, migration and breeding habitats for five species of salmon, steelhead, sturgeon, trout, raptors, aquatic birds, amphibians, mammals and has internationally significant numbers of bald eagles and Trumpeter swans. The Harrison system and floodplain is internationally recognized as a **Salmon Stronghold** and an **Important Bird Area**. <https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/wildlife/wildlife-habitats/conservation-lands/wma/wmas-list/lhlt-harrison-chehalis>

THEME 6: FAUNA | 6.2 Rare Animal Species

Description of Change in Value

The Fraser Basin region contains a wealth of habitats and rare or endangered species including include mammals, birds, reptiles, amphibians, invertebrates and insects. Some populations are under increased threat, while others are responding to restoration efforts.

- **Salmon and other fish:** Combined, the Fraser River basin and the Columbia River basin are home to 70% of the Pacific region's freshwater aquatic species at risk, (source: Fraser Watershed Priority Area). Some subspecies are under grave threat, including the Cultus Lake Sockeye Salmon, listed as endangered by COSEWIC in 2003; returning spawners are now in the low hundreds. A recovery plan was renewed in 2017.
- **Interior Steelhead** in particular has shown a worrying decline: Both Chilcotin and Thompson river populations have been in decline for the last 40 years; in 2020, the numbers plunged to 38 and 257 in the two rivers, respectively, a decline of 80% over the past three generations. The most recent years represent 5% (Chilcotin) and 9% (Thompson) of pre-2000 abundance, BC Gov't, bit.ly/2Ocoh95.

Reason For Change

Decades of land modification for industrial, residential and recreational purposes have altered local ecosystems in ways that have degraded or destroyed important habitats for species at risk. Climate warming effects and changing marine environments and food sources add further pressures on vulnerable species.

- In some cases, measures to restore habitats such as Interior grasslands, floodplains and salmon rearing habitats have positive effects.
- The Big Bar landslide in late 2018 that blocked access up the Fraser has significant long-term implications for salmon migrating to Interior spawning areas.
- Interior Fraser steelhead: Poor marine survival rate, by-catch mortality, overfishing, declines in marine and freshwater habitat may be causes of decline: SARA, Technical summary for Steelhead Trout, Thompson River and Chilcotin River, February 2018; https://www.youtube.com/watch?v=Bw1o5Vp90iA&ab_channel=UBCInstitutefortheOceansandFisheries

Actions Taken in Response

- **August 2020: the Department of Fisheries and Oceans** designated the **Fraser Watershed Priority Area, including the entire Fraser River Basin** from its headwaters in the Rocky Mountains near Valemount to its mouth at Vancouver, and its tributary river basins. Extensive conservation efforts are underway with all government levels, First Nations and other agencies collaborating activities to maximize conservation of species at risk. A few examples are:
 - Through habitat enhancement with stream channel reconstruction, bank stabilization and riparian fencing, the Fraser Basin Council is addressing these threats in a four-year project to restore Salmon habitat in the Horsefly watershed.
 - The Fraser Valley Watershed Coalition developed an integrated plan to restore fresh waters in City of Chilliwack, including habitat restoration, maintenance, and monitoring to mitigate a variety of local threats to species at risk and their habitat.
 - The British Columbia Conservation Foundation is restoring salmonid habitat areas in the North and South Thompson Rivers, with FBC, land owners and First Nations continuing habitat monitoring and restoration programs.
 - The Upper Fraser Fisheries Conservation Alliance, with First Nations and local partners, is rehabilitating riparian areas and creating off-channel wintering ponds to benefit at-risk White Sturgeon, Chinook and Coho Salmon.
 - The Invasive Species Council of British Columbia is protecting species at risk from the threat of invasive aquatic species by proactively preventing the accidental transfer of invasive species into the Fraser watershed.
 - DFO's Canada Nature Fund for Aquatic Species at Risk (CNFASAR) supports projects with immediate and lasting impact on ecosystems in the Fraser watershed, that address a range of threats, and work with First Nations, stewardship groups, local and federal governments, academia and landowners to aid in the recovery of our species at risk. A full list of works is found here: <https://www.dfo-mpo.gc.ca/species-especies/sara-lep/cnfasar-fnceap/priority-priorite/profiles/fraser-eng.html>
- **Interior Fraser River steelhead** – In 2018, citing critically low spawning returns, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed the Interior Fraser Steelhead were at imminent risk of extinction, listing them as Endangered. The Province has regulated catch and release only fisheries for wild Steelhead since 1997, and will build on current management plans. See <https://cosewic.ca/index.php/en-ca/news-and-events/press-release-feb-2018>
- **White Sturgeon:** There is restricted any catch and release fishing of white sturgeon from May to July at specified channels and backwaters in the Lower Fraser gravel reach, in 2019 and 2020. Two decades of monitoring has built an internationally recognized database; provincial and federal governments have management plans in place for the recovery and sustained health of sturgeon, and prey species including salmon and eulachon. Conservationists are pressing for islands, bars and channels in the gravel reach of the Fraser to be designated the first ever 'Ecologically Sensitive Area' (ESA), a new category created under the Fisheries Act. BC Wildlife Federation and the Province will develop a collaborative model; BCWF aims to acquire key properties with sensitive habitats: www.HeartoftheFraser.ca In 2019, City of Chilliwack applied to the province to manage the Gill Road channel area as a regional park with FVRD and DFO support, thereby giving them tools to protect the sturgeon spawning areas there.
- **Sumas Mountain biophysical inventory, 2010** – The report by Taara Environmental identified more than 40 species at risk and 27 ecosystems at risk, including pockets of mature forest settings. SARA- assessed species with updated management plans include: Mountain Beaver, (special concern) which relies on mature forests and fields of sword ferns to thrive; Pacific Giant Salamander (Threatened, 2017), the Oregon Spotted Frog (Endangered, 2014), Oregon Forestsnail (endangered, 2016) and others.
- **Of note: Glenn Roderick Ryder (1938-2013)** was one of B.C.'s most preeminent naturalists. Ryder compiled 70 years of detailed baseline data on wildlife in the Lower Fraser basin, much of it on Sumas Mountain, that today is used in interpreting the effects of climate change in the province as well as establishing conservation priorities, species population trends, and identifying critical habitats that require protection. Source: An Old School Naturalist, Glenn Roderick Ryder, published by the Biodiversity Centre for Wildlife Studies; bcbooklook.com/2015/05/26/the-bicycle-thief-gets-his-due/ There is a trail named after him on the south flank of Sumas Mountain, but conservationists aim to have this overused 'grind' closed to protect vulnerable species.

1. Master cedar root basket weaver Mandy Brown, Lytton First Nation, at Tuckkwiowhum Heritage Village, Fraser Canyon. – Tuckkwiowhum Village
2. Traditional summer lodges at Tuckkwiowhum Heritage Village, Boston Bar: interactive Indigenous cultural sites are found along the Fraser River – Tuckkwiowhum Heritage Village
3. Petroglyphs at Xat'sull Heritage Village above the Fraser, at Soda Creek – Destination BC/Blake Jorgenson



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7. Cultural Heritage Values

7.1 Background

The Fraser River was designated as a Canadian Heritage River based on cultural values for the following reasons:

- Hundreds of archeological, historical and other features along the banks, wetlands and dry sites along the Fraser are rich with artifacts, structures and the imprints of the First Nations that for millennia settled along the Fraser River and basin, and who represent the oldest human heritage themes associated with the river.
- The river has made an important contribution to the development of British Columbia and Canada through its influence on such important events as the fur trade and European colonization of the West, and on such important themes as riparian settlement and transportation.
- The Fraser River is strongly associated with the European exploration of western Canada. It is also directly associated with the formation of British Columbia, first as the Crown Colony of British Columbia and later as a Province of Canada.
- The banks of the Fraser are home to nationally significant historic sites: Fort Langley, the site of the first permanent European settlement in B.C., and the Gulf of Georgia Cannery, an early fish processing plant located at the river's mouth.

7.2 Condition of Values Since Nomination

Overall, the cultural heritage values of the Fraser River described at the time of nomination, including river resource harvest, water transport, riparian settlement, and cultural sites and experiences, are robust and flourishing. The exception is the impact that diminished returns of salmon have had on several First Nation communities, and commercial and recreational fisheries. Below, the table entries confirm these values, and their evolution and growth in celebrating the past in today's communities along the Fraser.

The influence of the Fraser River on Indigenous peoples and Europeans settlers cannot be overstated.

The Fraser is alive with the histories of the Indigenous cultures that have resided alongside the river for thousands of years. The river provided Indigenous peoples with a bounty of fish, wildlife and plants that have sustained their communities' nutritional, shelter, cultural and spiritual needs for millennia. The river, known by many names according to the dozens of different nations along its reach, is embedded in their cultural identities.

That profound relationship continues today, and is recognized in the tenets of United Nations *Declaration on the Rights of Indigenous Peoples* (UNDRIP), which Canada endorsed in 2016, and which British Columbia adopted in its *Declaration on the Rights of Indigenous Peoples Act* (DRIPA) in November 2019.

For those reasons, the current diminished returns of Fraser sockeye and other salmon stocks are particularly concerning for First Nations, as it has resulted in closing or restricting for commercial and for aboriginal Food, Social and Ceremonial (FSC) harvest. First Nation communities are greatly impacted by the decline in harvestable salmon, particularly sockeye, a staple food fish that has always sustained them. In response, groups like the Lower Fraser Fisheries Alliance call for an Indigenous-led approach to community and ecosystem-based management of ecosystems and salmon restoration with a long-term, seven-generation perspective.

All along the Fraser, First Nation communities are reviving their cultural traditions and teaching, and many share their heritage with the broader community. At the same time, school curriculums at all levels are folding Indigenous histories and cultural awareness into their programs, while non-Indigenous communities are showing a thirst for Indigenous culture by engaging in a range of activities that showcase Indigenous culture, an interest reflected in the growth of Indigenous Tourism in B.C.

Diverse cultural interpretive opportunities and significant archeological sites are found along the entire length of the Fraser. An example of the countless ongoing programs, the Stó:lō Research and Resource Management Centre, opened in 2010 on the former Coqualeetza residential school and tuberculosis hospital site in Chilliwack, has a Heritage Stewardship and Archaeology Program that takes a broad, multi-disciplinary approach to cultural heritage research and management. In addition to managing archaeological sites, they acknowledge cultural places important to the Stó:lō community in the Lower Fraser, including Transformation Sites, place names and Spirited Places as defined in the Stó:lō Heritage Policy. The program also offers interpretative events, public engagement and cross-cultural awareness – both on reserve and off.

Others combine their cultural outreach with tourism, such as the Tuckkwiowhum Heritage Village, a Nlaka'pamux immersive interpretive heritage site, operated by Boston Bar First Nation in the Fraser Canyon.

First Nations also look to ancient practices and knowledge to better nourish their communities today, in some cases literally. In 2014 Katzie First Nation began its first eco-cultural restoration of wapato as a traditional food in Katzie Territory, with restoring tidal wetlands along the Pitt and Alouette Rivers. A 2007 archaeological dig near Pitt Meadows found the starchy wapato tubers of the aquatic plant and harvesting tools dating back 3,900 years. Katzie First Nation hopes to re-introduce this and other traditional foods to the community.

Traditional knowledge is increasingly applied alongside scientific knowledge in wildlife stewardship, including in the restoration of critical salmon and sturgeon habitat in wetlands and riparian areas along the Fraser, as seen in projects like the Stave River estuary restoration, or in the traditional use of fire to maintain healthy grass and forest ecosystems in the Interior.

In the same vein, European and other settler history is recognized at countless heritage sites along the Fraser corridor, including two national historic sites on the Fraser: Fort Langley, the site of the first permanent European settlement in B.C., and the Gulf of Georgia Cannery, a fish processing site in Steveston that was an important part of B.C.'s early commercial fishery. The history and continued importance of the river is the focus of the Fraser River Discovery Centre in New Westminster.

There are also many lesser known tributes to the early newcomers along the Fraser, from tiny hamlets nestled in the mountainous headlands to the metropolitan coast. Fort Fraser, established in 1806 by Simon Fraser for the North West Company fur buyers – two years before he travelled the river that bears his name – is one of B.C.'s oldest continuously occupied European settlements, and the area around the community is believed to be the site of the first land in B.C. cultivated by non-First Nations people.

A nod to the golden age of steamships and paddlewheelers that worked the lower Fraser from 1835 to the last vessel in 1981, is at the provincial Kilby Museum at Harrison Mills, at the confluence of the Fraser and Harrison rivers. Farms, towns and small outposts relied on the steamers to deliver and export foods, milk, mail, goods and people during a time when few bridges spanned the muddy river.



Not all memorials are to Europeans. Abbotsford is the site of the **Gur Sikh Gurdwara**, the oldest Sikh temple in North America, opened in 1911 and named a National Historic Site in 2002. In July 2018, a plaque was commemorated in Lytton in the Fraser Canyon to honour the **Chinese settlers** for their contribution to the province's history, by helping to carve rail routes through treacherous places like the Canyon, and contributing to new communities springing up around B.C. The plaque is a formal commemoration of the apology given to Chinese-Canadians by the province in 2014 for historical abuses committed by B.C.'s early governments.

Kanaka Creek and Kanaka Creek Regional Park, roughly across from Fort Langley on the Fraser, is named for the settlement of Hawaiian stevedores and labourers employed by the Hudson's Bay Company, starting in the 1830s. **Kanaka Bar** in the Fraser Canyon is likewise named for the Kanakas, the Hawaiian word for people or human beings, who staked and worked gold claims there. Their legacy endures as many men married local Indigenous women and became part of the nation's mosaic. One popular linguistic theory is that 'Canuck' is a derivation of Kanaka.



Table 3: Changes to Fraser River Cultural Heritage Values

THEME 1: RESOURCE HARVESTING | 1.1 Fishing

Description of Change in Value	<ul style="list-style-type: none"> • For thousands of years, Indigenous Peoples have received the bounty of salmon, sturgeon, eulachon and other fish from the Fraser River. Salmon has been a staple that sustains Indigenous communities' nutritional, cultural and spiritual needs. This relationship and interaction with the river is ancient and profound, and is recognized in their right to fish for food, social and ceremonial (FSC) purposes. • The low returns and closures of salmon runs impact Indigenous communities along the Fraser and throughout the watershed. • Settlers, too, when they arrived benefited from the river's largess as commercial and sport fishers. However, decreased numbers of some sockeye, other species and populations compel all fishing groups to adapt their management and harvest of fish.
Reason For Change	<ul style="list-style-type: none"> • The Fraser River is one of the greatest salmon producing river systems in the world, and many First Nation people with a long history of reliance on fishing reside in the Fraser River Basin. Climate change, fishery management practices, overfishing at open sea, reduced spawning and juvenile habitats, and other factors put pressure on salmon stocks on which Indigenous communities depend. Stocks have been declining for First Nation, commercial and sport fishers alike. • The estimated commercial catch of all salmon species in B.C. was just 629,000 fish: Business in Vancouver, February 2020. • The Lower Fraser is a prime recreational fishing destination, generating an average of \$180 million a year in direct revenues: The Economic Importance of the Fraser River, www.fria.ca

Actions Taken in Response

- To protect and promote Indigenous interests with regard to Fraser River fisheries, these organizations were formed:
- **Lower Fraser Fisheries Alliance**, LFFA, was founded in 2010 to speak for Lower Fraser River First Nations on issues of fisheries management, stewardship and adaptation, and on land use and flood management processes such as the Fraser Basin Council Flood Management Planning Process.
- As per its 2009 mandate, the **First Nations Fisheries Council** works with and on behalf of BC First Nations to protect and reconcile First Nations rights and title as they relate to fisheries and the health and protection of aquatic resources.
- Created by Fraser First Nations and DFO in 1994, the **Fraser River Aboriginal Fisheries Secretariat** today provides communications and biological support services to First Nations, coordinates Fraser Salmon Management Agreement processes, and is key in supporting these initiatives with services for both First Nations and DFO.
- **Fraser River Peacemakers** was a unique group of Indigenous and recreational fishers established in 2009 to build understanding and trust between First Nation harvesters and recreational anglers in the Lower Fraser, to resolve conflict, and to encourage stewardship and safety. In 2010 the group released the video River Manners, www.youtube.com/watch?v=JbyYW9cerxA&t=2s
- In 2018, FRP received the 2017 National Recreational Fisheries Award, the last year the award was given, from the Ministry of Fisheries & Oceans for promoting harmony and conservation.
- The **October 2012 Cohen Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River** provides an extensive review of conditions regarding this fishery. It made 75 recommendations, including habitat protection with no net loss, advancing biodiversity in ecosystems, adopting ecosystem-based management practices, advising DFO to divest itself of salmon farming as it conflicts with its mandate to protect wild salmon stocks, and immediately implementing an earlier 2005 Wild Salmon Policy. By 2019, the Department of Fisheries and Oceans reported it had implemented 32 recommendations in whole or in part, while others were supported in principle (22), outdated (6) or pertained to other jurisdictions (15).
- No longer active in 2020, Fraser River Peacemakers members developed the **Fraser River Collaborative Table** with Peacemaker parameters, and when active, will address many of the issues previously vetted by Peacemakers, as well as allocation and selective fishing: www.fraseriverpeacemakers.ca

THEME 1: RESOURCE HARVESTING | 1.2 Shoreline Resources Harvesting

Description of Change in Value

- Indigenous families harvested a bounty of aquatic plants and animals from their backyards and from their local shores and wetlands.
- Wapato, broadleaf arrowhead, or *Sagittaria latifolia*, is an aquatic marshy plant cultivated for its starchy roots by Lower Fraser Coast Salish communities in past centuries. Communities traded it to settlers and gold miners heading up the Fraser Canyon. After settlement however, dikes and development reduced the areas of wapato, and it became more rare.

Reason For Change

- Restoration plans for local tidal flats and marsh. Discovery of ancient harvest and farming applications in the Alouette and Pitt river floodplains: In 2007, an archaeological dig in Katzie Territory near Pitt Meadows found wapato tubers and harvesting tools dating back 3,900 years: www.mapleridgenews.com/news/katzie-first-nation-explore-millennia-old-sea-gardens-in-pitt-meadows/

Actions Taken in Response

- In 2014 Katzie First Nation began its first Eco-cultural restoration of wapato as a traditional food in Katzie Territory, with restoring tidal wetlands along the Pitt and Alouette Rivers. They hope to re-introduce traditional food plants like wapato to Katzie territory, and to up plant up to 20 hectares of wapato. <http://www.sccp.ca/sites/default/files/resources/documents/Katzie%20Eco-cultural%20Restoration%20Brochure.pdf>

THEME 2: WATER TRANSPORT | 2.1 Commercial Transportation

Description of Change in Value	<ul style="list-style-type: none">• The Fraser has long been the super highway for trade and travel for Indigenous communities and traders, and later European surveyors and settlers. The waterway is entwined with the human history of the province, from time immemorial.• Today the Port of Vancouver is vital to the economy of Canada and the U.S.; it oversees New Westminster and Roberts Bank terminals, is the third largest port in Canada, and fourth largest port by tonnage in North America: fria.ca
Reason For Change	<ul style="list-style-type: none">• Economic activity continues to grow on the Fraser.
Actions Taken in Response	<ul style="list-style-type: none">• No particular response action is required. However it is worthy to note the economic activity along the entire Fraser River is worth \$189.6 billion, which is about 80% of the provincial Gross Domestic Product and 10% of the national GDP: Source, Fraser River Industrial Association, fria.ca• Plying the Lower Fraser waters are tugs, barges, commercial and Indigenous fish boats, log booms, pleasure craft, and sport fishers, while police and environmental authorities, scientists, guides and tour boats also travel the river. For example, Mainland Sand & Gravel barges are led by tugs daily with aggregate material from its Sumas Mountain quarry to ports in New Westminster.

THEME 2: WATER TRANSPORT | 2.2 Transportation Services

Description of Change in Value	<ul style="list-style-type: none">• The Lower Fraser is home to 9 of 10 federal Small Craft Harbours in BC. Steveston, a key port for commercial fishing on the B.C. coast, is the largest. The middle arm of the Fraser holds the float plane facility for the Vancouver International Airport, linking people to remote B.C. communities who rely on float plane services. In 2013, the planes transported 105,000 passengers, fria.ca, 2014 economic report.
Reason For Change	<ul style="list-style-type: none">• Removal of navigation hazards to make boat traffic safer and more sustainable on the Fraser.
Actions Taken in Response	<ul style="list-style-type: none">• March 2019 – Port of Vancouver Fraser River Improvement Initiative completed its five-year, \$2M program to address 151 sites to remove derelict vessels and structures and improve river habitat and safety. www.portvancouver.com/news-and-media/news/completion-of-fraser-river-cleanup-program-improved-local-waterways-environment-and-wildlife-habitat

THEME 3: RIPARIAN SETTLEMENT | 3.1 Siting of Dwellings

Description of Change in Value	<ul style="list-style-type: none">• People have lived along the Fraser for thousands of years. European settlement began about 200 when explorers, traders and agents arrived to claim stakes for their governments and companies in the ‘new territory.’• More than three million people live in Fraser basin, and from its remote upper reaches to metropolitan Vancouver.
Reason For Change	<ul style="list-style-type: none">• By 2040, up to one million more people could be residing in Lower Mainland. With climate change and rising sea levels come greater threats of flooding and inundation from the sea during storm surges.

Actions Taken in Response

- Lower Mainland Flood Management Strategy (LMFMS) was created in 2014 to help the region address current and future flood events.
- The Fraser Basin Council was contracted to facilitate the process, and with funding from provincial, federal and local governments, FBC completed the first two LMFMS phases to assess risks, to map Lower Fraser contours and floodplain areas, to engage a broad array of partners, to create an informative website, www.floodwise.ca and more. Starting in 2021, Phase 3 will focus on regional priorities, risk reduction options, funding and decision-making approaches, with input from partners and advisors. In 2019, the Province retained FBC to undertake a similar province-wide revise of flood strategies across the province including Upper Fraser areas.

THEME 3: RIPARIAN SETTLEMENT | 3.3 River-Influenced Transportation**Description of Change in Value**

- One must cross the river to get to the other side. There are no known threats to this value. However, it is notable there are approximately 70 crossing structures over the Fraser River, along its main channel from its source to its three estuary arms in the Fraser delta. These structures are worth billions, and are critical to the movement of people and goods around the province, and to Canada.

Reason For Change

- The former five-lane Port Mann Bridge was replaced with a new 10-lane, \$820 million cable-stayed bridge in 2012. The province charged drivers a crossing toll, electronically, from 2012 to 2017, when tolling was ended.

Actions Taken in Response

- The many Fraser crossings reflect a variety of engineering styles and ages, and include the George Massey Tunnel in Delta, several urban crossings in Richmond and South Vancouver, the Hell's Gate pedestrian and airtram bridges, railway trestle and swing bridges, including some that once accommodated vehicle traffic like the Mission CPR swing bridge, cable ferry crossings, humble ranch road bridges, and some bearing memorable names, such as the Bridge of the Twenty-Three Camels, which carries Hwy. 99 over the Fraser at Lillooet, B.C. The popular Albion Ferry operated between Albion and Fort Langley from 1957 to 2009, when it was decommissioned with the opening of the Golden Ears Bridge, which to date is the longest extradosed bridge in the Western Hemisphere.

THEME 4: CULTURE AND RECREATION**THEME 4: CULTURE AND RECREATION | 4.1 Spiritual Associations****Description of Change in Value**

- This was not described at the time of designation.

Reason For Change**Actions Taken in Response**

- For most if not all the First Nation Peoples along the Fraser River and in the Basin, there is profound connection to the river.
- The river we call Fraser is in fact known by different names to different Indigenous communities in the basin: it is Stó:lō in Halqemeylem, Lhtakoh in the Dakelh language, both meaning 'river' in their respective languages. To the Tsilqot'in people, the Fraser is 'ʔElhdaqox, or Sturgeon River, in reverence to the ancient, long-lived fish that live in the waters of the south Fraser.
- For millennia, the river brought abundance to thriving communities living near its waters. The river continues to be a sacred spirit, a place for gratitude, special prayers and honouring for Indigenous people – The First Salmon Ceremony, for example, in which a community pay tribute and thanks to salmon at the start of the harvest season, most often takes place on the bank of the Fraser.

THEME 4: CULTURE AND RECREATION | 4.2 Cultural Expression

Description of Change in Value

- Communities new and old continue to celebrate and tell the stories of the Fraser River with cultural sites that focus on various aspects of the river's history, impact and its ancient relationship with the people of the Basin. For many Indigenous peoples, expressing their cultures is also an act of reestablishing their fundamental rights, as outlined the UN Declaration of Indigenous Rights.
- The celebration of the Fraser is held by dozens of communities along its length in annual events through the year, such Riverfest at the Fraser River Discovery Centre, shoreline cleanup events, Jane's Walks, and BC Rivers Day in September.

Reason For Change

- First Nations are proudly sharing their cultural histories, and this is enhanced by the federal recognition of the United Nations Declaration of Rights of Indigenous Peoples (UNDRIP), and the province's adoption of the *Declaration On The Rights Of Indigenous Peoples Act* in November 2019.

Actions Taken in Response

- Since 2001, the **Fraser River Discovery Centre** in New Westminster has connected communities to the living, working Fraser River, hands-on educational programs, with exhibits on its history and future: www.fraserriverdiscovery.org. At the mouth of the southern arm of the Fraser in **Steveston Village** is the **Georgia Cannery National Historic Site** that commemorates the west coast fishing industry, once the largest commercial fishing port in Canada: Parks Canada.
- The **Fort Langley National Historic site** pays tribute to the Hudson's Bay Company's first outpost on the West Coast, established in 1827. The fort traded furs, salmon, cranberries and other foods with Coast Salish tribes in the area, who also provided key information on travel and other communities. Settlers built farms in the area, and some old gnarled fruit trees still live along trails leading out of the picturesque village. The nearby Kwantlen First Nation opened its **Kwantlen Cultural Centre longhouse** in 2013; it will also play a role in the new Fort Langley Museum Heritage Centre announced in **September 2019**, which will include an Indigenous Museum. The centre will be called Salishan, Place by the River.
- In **2002**, the federal government designated the **Gur Sikh Gurdwara** in Abbotsford, built in 1911 and the oldest Sikh temple in North America, a **National Historic Site**.
- In **July 2018**, a plaque was commemorated in **Lytton, B.C. to honour Chinese settlers** in the Fraser Canyon for the role they played in the province's history, helping to build the railroad and new communities through B.C. The plaque is a formal commemoration of the apology given to Chinese-Canadians by the province in 2014 for historical abuses committed by B.C.'s early governments.
- Dozens of Indigenous communities are reclaiming their cultural heritage for their own people, and to share with the broader population.
- The **Musqueam Cultural Centre Gallery** sits on the shoulder of the north arm of the Fraser as it pours into the Salish Sea. Musqueam First Nation, the Museum of Anthropology (MOA) at UBC, and the Museum of Vancouver (MOV) partnered on a groundbreaking exploration of Musqueam's ancient landscape and living culture čəsnaʔəm, the city before the city in a series of three distinct exhibitions that opened in January 2015. The unified exhibits connect visitors with čəsnaʔəm, one of the largest ancient village and burial sites upon which Vancouver was built, sharing its powerful 5,000-year history and continuing significance.
- **Stó:lō Research and Resource Management Centre** in Chilliwack opened in 2010 to house the Stó:lō peoples cultural heritage and knowledge. With state of the art language, archive and artifact facilities to preserve and maintain Stó:lō cultural heritage, lands and resource based information, on site cultural leaders and experts also provide courses and cultural tours. The SRC is a Siy:ám House - a place of respect and a place of culture, knowledge, economy, and sharing.
- **Tsawwassen First Nation** celebrated the opening of its 12,000 sq. ft. Youth Centre, qəʔis məstiməx"əwtx", on Feb. 15, 2021, complete with a virtual event (due to Covid-19 restrictions). The centre provides a culturally rich space for children to learn, grow and pursue their passions as well as cultural learning: See <http://tsawwassenfirstnation.com/>
- **Tuckkwiowhum Heritage Village** is a Nlaka'pamux immersive interpretive heritage site, near Boston Bar First Nation (member of the Nlaka'pamux First Nations Tribal Council) in the Fraser Canyon. Inspired by the Nlaka'pamux people's desire to preserve and share the culture and traditions, it features traditional buildings and examples of daily life from the past, and interpretive tours. An area still known for its abundant huckleberries, blueberries and medicinal plants, guests can also visit with Elders and hear traditional stories.
- Another vital event for many Indigenous Peoples was the **potlatch**, traditionally a spiritual and cultural ceremony integral to governing, sharing wealth and strengthening clans. Fundamental as it was to some Indigenous cultures, as part of its policy of assimilation, the federal government banned the potlatch from 1884 to 1951 via the *Indian Act*, making it a criminal offence to take part in a potlatch feast. Like many aspects of Indigenous culture, the potlatch is being revived. **Lheidli T'enneh First Nation** in Prince George held its first potlatch in 73 years, on Nov. 29, 2019: www.cbc.ca/news/canada/british-columbia/once-banned-potlatch-now-makes-comeback-in-prince-george-1.5342833

THEME 5: JURISDICTIONAL USES

THEME 5: JURISDICTIONAL USES | 5.3 Environmental Regulation

Description of Change in Value

- Not outlined in nomination materials

Reason For Change

- Development of a regional flood management oversight for the Lower Mainland.

Actions Taken in Response

- While environmental jurisdictional issues were not outlined in the nomination document, layers of authorities have influence over the river's values including (to date): federal and provincial governments, 15 municipalities, 29 First Nations, diking authorities, and more than 20 provincial and federal ministries, in addition to private and public sectors, stewardship groups, recreational users, railways, port authorities and labour unions: fria.ca
- These myriad complex relationships require collaborative management for flood planning on the Fraser River. A potentially new governance structure may arise through the Lower Mainland Flood Management Strategy final phases and incorporate environmental guidelines, post 2021.

The Fraser River Sturgeon Conservation Society runs a tag and release program with volunteer anglers in summer and fall as part of its internationally recognized sturgeon monitoring program.
– Robert Moberg Films



1. Museum of Anthropology at UBC: Indigenous cultural sites are popular destinations as interest in Indigenous tourism grows – Destination BC/@anatoletuzlak
2. Established in 1827, Fort Langley was the first permanent European site of contact with Indigenous peoples on the Fraser River, and today is a National Historic Site – Destination BC/Dannielle Hayes
3. The Gulf of Georgia Cannery in Richmond is one of several National Historic Sites found on the Fraser River corridor – Destination BC/ @vancitywild



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8. Recreational Values

8.1 Background

The Fraser River's massive reach across the variety of landscapes in British Columbia provides boundless opportunities for outdoor recreation, in the water or on its banks. The river is a destination for people of all ages, ability and inclination. Those seeking excitement can enjoy first class whitewater challenges in kayaks, canoes or rafts in its upper reaches and in canyon or rapids areas in its middle stretch.

Federal, provincial and regional governments maintain a network of world class parks, historic and heritage sites, wildlife and conservation areas, and trails for strolling, hiking, cycling that provide all manner of exploration possibilities, including interpretive programs that enhance the appreciation of this magnificent heritage river. Residents and tourists alike enjoy superb angling for salmon, trout and sturgeon, wildlife viewing and birding watching, from the Fraser River Estuary through to the grasslands and forests of the upper river. For urban adventurers, cities, villages and First Nation communities offer a range of attractions, festivals, cultural experiences and stewardship engagement events, on the river or close by. We note that at the time of nomination and designation, there was no recreational values framework. However, recreational values described in the nomination document include opportunities for recreational experiences and activities that enhance the appreciation for the Fraser's heritage values, and are incorporated into this monitoring report.

8.2 Condition of Values Since Nomination

All recreational values for the Fraser River that were described in the original nomination paper remain, and they are enhanced with the addition of new parks and trails, and the emergence of new cultural interpretation programs and opportunities.

Some notable developments include:

- **Experience the Fraser (ETF)** is a recreational, cultural and heritage project that features a 550-km network of trails along the lower Fraser River from Hope to Vancouver along a stunning route. The walking or cycling trails – 43% of which are in place – and water access points connect communities along the river, and with the TransCanada Trail at many points. First launched in 2009, momentum on trail development builds as communities add or enhance links along the route.
 - In **2010**, the District of Mission opened **Spirit Square at Jack Poole Harbourside Park** as the first new project and trail segment for ETF in the Fraser Valley. Overlooking Mission Harbour, the square is the site for many community events.
 - In **2011**, Metro Vancouver and the Township of Langley linked the **Derby Reach Trail** from historic Fort Langley through Kwantlen First Nation territory, past pioneer orchards, to the foot of Golden Ears Bridge and near the site of the original fort.
 - In **2017** the **District of Mission** incorporated a portion of the ETF trail into a habitat enhancement and riverfront wing dam shoreline protection project.
 - In **2017**, FVRD opened an 18-km link from **Ferry Island Provincial Park to Island 22 Regional Park** between Hope and Chilliwack.
- **Increased accessibility** – In 2019, the Province and Destination BC began a new three-phase program to enhance travel for people with diverse abilities, including six itineraries featuring accessible attractions, experiences and venues at [HelloBC.com](https://www.hellobc.com). More initiatives will unfold in coming years.

- After a 30-year break, in 2015 Prince George revived its **Northern Hardware Prince George Canoe Race**, held in the Nechako and Fraser rivers annually in July. The two races include the 25 km Simon Fraser and the 67.5 km Alexander Mackenzie class, following the voyageurs' historic routes. A cultural celebration of First Nations and European people, it attracts 50 or more race teams each year. The course runs from Isle Pierre to Lheidli T'enneh Memorial Park along the Nechako and Fraser Rivers, and paddlers often see bear, elk, moose, lynx, beaver, otter, eagles and sturgeon.
- **Indigenous Tourism** – Opportunities to learn, experience and appreciate First Nations' cultures expand yearly as public interest grows. This keen interest is reflected in the 2019 launch of Indigenous Tourism BC's (ITBC) new website, which highlights nearly 200 First Nations in the province. Beginning in 2020, Destination BC increased its financial support to ITBC by one-third, providing \$4 million over the next three years.
- **Stave West Recreational Area** is one of the newest wilderness camping places in the Lower Fraser, a collaboration between the District of Mission, Kwantlen, Matsqui and Leq'a:mel First Nations and the Province, to purposefully transform the Stave West Forest & Recreation Area into a safe, friendly outdoor recreation and learning destination – one that co-exists with sustainably managed forestry operations and respects traditional Indigenous values. In 2018, more than 200 campsites including remote walk-in sites, off-road and horse-friendly sites were ready to provide opportunities for riding, angling, hiking, camping, academic learning, and cultural activities.



Table 4: Changes To Fraser River Recreational Values

THEME 1: RECREATION | 1.1 Boating

Description of Change in Value	<ul style="list-style-type: none"> • World-class and world-renowned boating and paddling activities remain robust along the Fraser since the last report.
Reason For Change	
Actions Taken in Response	<ul style="list-style-type: none"> • All manner of boating activities listed in the sub-themes occur somewhere along the Fraser River, from adrenaline-inducing guided kayaking, rafting or canoeing through rapids near its head waters in the Rockies, to wildlife and scenery viewing boat tours, and finally to sailing into safe harbour in the south arm of the river's delta from where it rushes into the Pacific. • River tours along the river, such as Fraser River Safari, Mission, B.C., showcase the river's physical attributes, wildlife, scenery and in many cases, human history, current Indigenous cultures and archaeological interest.

THEME 1: RECREATION | 1.2 Angling Values (Day, Weekend, Extended Angling, Fly Fishing, Specific Species)

Description of Change in Value

- Sport fishing activities on the Fraser and close tributaries remain varied, rewarding and popular, and where fishing regulations allow it, includes targeting all species of salmon, steelhead, dolly varden, rainbow trout, bull trout, whitefish and white sturgeon (catch and release): Source: BC Ministry of Environment, www.env.gov.bc.ca/fw/fish/sport_fish
- The sector has grown: Sport fishing revenues were estimated at \$1.1 billion in 2016, up 6.7% over the 2015 value. Real GDP associated with sport fishing increased for five straight years, rising 5.8% to \$389.8 million in 2016, making it the largest segment in B.C.'s fisheries and aquaculture sector, with 39% of the sector's total GDP, and employing 60% of its workers. Indications since show the trend has continued. While exact data on how much of that is generated along the Fraser River stem, it is noted that many anglers likely don't travel further than 80 kilometers from home to fish. Source: British Columbia's Fisheries and Aquaculture Sector, 2016 Edition report.
- A Fraser Valley Regional District outdoor recreation study found anglers spent 581,342 recreation days and \$156 million in that region alone, in 2019. Fishing and river guides provide memorable experiences for residents and out of country visitors through the year. Some fishing guides are also keenly involved in conservation: Great Fishing River Expeditions in Yale B.C. and other sturgeon guides for example, collect data on sturgeon for the Fraser River Sturgeon Conservation Society.

Reason For Change

- **Freshwater Fisheries Society of BC** annually stocks about 900 lakes and waterways including many in the Fraser Basin with trout, char and kokanee from provincial hatcheries. Its Learn to Fish program introduces hundreds of children and new anglers to the activity each year. By 2019, the sport fishing sector estimated it was generated close to \$1 billion per year in B.C.'s economy, and employs 6,000 people. However, most activity for guiders and campsite facilities, even parks, came to a sudden halt in 2020 with COVID-19 outbreak and pandemic restrictions. This dramatic drop is expected to be temporary, with a restart planned for tourism in 2021-22.

Actions Taken in Response

- In response to the growing interest sport fishing sector on the lower Fraser, Cheam First Nations (Pilalt Tribe) Enterprises opened the Cheam Fishing Village boat launch and campground in Agassiz on one its traditional fishing beaches in July 2014, featuring 50 campsites and day areas, including riverfront spots with panoramic views. www.theprogress.com/news/campground-on-the-fraser-built-to-serve-growing-recreational-sector/
- Sport fishing for a given species is dependent on the health of its stocks and on priority fisheries. Some fisheries like Fraser Chinook and steelhead are closed; Fraser white sturgeon catch and release is restricted at specific spawning sites in the Lower Fraser during summer months as of 2019; other species many have limited openings, depending on conditions and stock management data and plans. The Department of Fisheries and Ocean and Coast Guard is responsible for all marine species with the exception of anadromous and catadromous (sea-going) species in inland waters in some regions; BC Minister of Environment and Climate Change is responsible for regulating freshwater species. See also Natural Heritage Values table.

THEME 4: RECREATION: WATER-ASSOCIATED ACTIVITIES | 4.1 Trail Use | 4.2 Camping

Description of Change in Value

- These recreational values continue to be robust along the Fraser River and in its basin, where hiking, cycling, mountain biking, horseback riding, skiing, nature viewing, camping and related activities abound through the year. Most Fraser River communities have riverside and historic trails, from the breathtaking Fraser River Nature Walk near the headwaters in Mt. Robson Provincial Park, to urban settings, such as the Fraser River Trail, Vancouver's only riverside greenway that travels along the Fraser's north arm to Pacific Spirit Regional Park where it connects with City of Burnaby's trail system. Along the way, several parks, waterfront walkways and bikeways are links along this evolving greenway on the city's south flank.
- Countless campground and wilderness camping sites are found throughout the Fraser Basin, including many locations on or near the river. Several remain open for hardy winter camping. Destination BC, BC Parks, local governments and guidebooks provide details on parks and amenities.
- **2019 Outdoor Recreation Economic Impact Analysis in the Fraser Valley Regional District**
Released in 2020, the 2019 Outdoor Recreation Economic Impact Analysis in the Fraser Valley Regional District illustrates the robust nature and economic power of the outdoor recreation sector in just the Fraser Valley. The one-year snapshot of outdoor activity found residents and non-residents spent 7.4 million recreation days (one person engaged in one activity in a day) in the area. These recreationists spent more than \$1.1 billion on outdoor recreation-related products and services in the region; when indirect and induced economic spinoffs are included, the total economic impact rose to almost \$1.8 billion.
- The most popular activities were hiking, camping and dog walking, at about 20% each, following by sport fishing at 8%, and then a variety of other activities including kayaking, mountain biking, ecotour/wildlife viewing. The study survey also found more than half (53%) of respondents had a very high level of interest in seeing Indigenous cultural interpretation information in recreation areas, such as trails. There is a strong opportunity to raise awareness of Indigenous culture and heritage, and to enhance recreational experiences with local Indigenous culture.
- The study provides the region's first-ever baseline for future analysis on the value of outdoor recreation, assisting with planning and managing for growth, including the FVRD's Outdoor Recreation Management Plan being developed. The FVRD is home to almost 300,000 residents, with a total land base of 13,361 square kilometers that covers urban, agricultural and pristine wilderness areas. FVRD stretches from the Thompson-Nicola Regional District in the northeast and Squamish-Lillooet Regional District in the northwest, the US border on the south, and Abbotsford and Mission on the west.

Reason For Change

- All values for activities along the Fraser and in its watershed remain robust, and are increasing and developing with greater public interest in experiencing the outdoor and natural places. This includes camping, trail use for hiking, skiing, biking, motorized crafts, horseback riding, and hunting. Experiences are often blended Indigenous culture and European settler histories.

Actions Taken in Response

- **Stave West** Recreational Area is one of the newest wilderness camping places in the Lower Fraser, a collaboration between the District of Mission, Kwantlen, Matsqui and Leq'a:mel First Nations and the Province, to purposefully transform the Stave West Forest & Recreation Area into a safe, friendly outdoor recreation and learning destination – one that co-exists with sustainably managed forestry operations and respects traditional Indigenous values. In 2018, more than 200 campsites including walk-ins and horse-friendly sites were ready to provide opportunities for riding, angling, hiking, learning and cultural activities.
- **Circle Farm** Tours are self-guided activities that highlight small, artisan agricultural businesses in the Fraser Valley's fertile floodplain, which can be taken by vehicle, on foot or by bicycle in Agassiz, Chilliwack, Langley and Abbotsford.
- **Experience the Fraser (ETF)**, launched in 2009 with \$2.5 million from the Province to Metro Vancouver and the Fraser Valley Regional District (FVRD), is a long-term recreational, cultural and heritage project that features a 550-km network of trails along the lower Fraser River connecting Hope to Vancouver. The walking or cycling trails – 43% of which are in place – and water access points will connect communities along the river when complete. The trail offers users a range of experiences through the year. Communities upgrade or create links for the trail, which weaves into the TransCanada Trail at many points.
- In **May 2010**, FVRD and the District of Mission opened **Spirit Square at Jack Poole Harbourside Park**, one of the first stages of Mission's waterfront revitalization and the first new project and trail segment for ETF in the Fraser Valley. Overlooking Mission Harbour, the square provides a focal point to connect residents and visitors to the Fraser, and is an example of innovative dyke planning and design with exceptional recreational benefits.
- In **2011**, Metro Vancouver and the Township of Langley linked the **Derby Reach Trail**, which winds from historic Fort Langley through Kwantlen First Nation territory, past old orchards planted by European pioneers, to the foot of Golden Ears Bridge and close to the site of the original fort.
- In **2017** the **District of Mission** incorporated a portion of Experience the Fraser trail into its industrial waterfront, where it had commissioned shore line protection with riverfront wing dams and habitat enhancement.
- In **2017**, FVRD opened an 18-km link from **Ferry Island Provincial Park to Island 22 Regional Park** between Hope and Chilliwack.
- Described as a photographer's dream, views include verdant farmland, the dramatic soaring Cascade Mountain range, and the dynamic Fraser River, changing with the seasons from placid drifting water to a tumultuous river sweeping everything in its path downstream. Source: www.fvrd.ca/EN/main/parks-recreation/experience-the-fraser.html
- **Increasing accessibility** – In 2019, the Province and Destination BC began a new three-phase plan to enhance travel for people with diverse abilities. Phase 1 started with new accessibility resources at HelloBC.com, including six themed itineraries featuring accessible attractions, experiences and venues. More initiatives will unfold in coming years. Source: Destination British Columbia

THEME 4: RECREATION | 4.3 Hunting

Description of Change in Value

- This value is unchanged from the last report and continues to be popular, while at the same time, wildlife viewing is a growing popular pastime. In the past decade some ungulate populations, including moose, elk and other deer, have decreased while others, such as white tail deer around Williams Lake, have seen numbers increase. Hunting is available throughout the Fraser River basin, from Prince George to the Southern Interior and Lower Mainland.

Reason For Change

- Landscape changes from increased density of resource and other roads, fewer small wildfires and larger, more intense fires due to fire suppression practices, enable predators to pursue prey into new territory and attract other ungulate populations that compete for food sources; other forestry practices and disease may also play a role: BC Wildlife Federation, 2020, 2021, bcwfb.ca/initiatives/mule-deer-project/
- Conservation measures for some species continue to result in Limited Entry Hunts. In some cases the Province introduced bans on trophy hunting due in part to changing public sentiment.

Actions Taken in Response

- The provincial government regularly updates and adjusts regulations to bring hunting restrictions for ungulates such as deer, elk, moose and caribou in specific affected communities and regions. It regularly updates resource management policies to include wildlife conservation.
- In 2017, the Province imposed a ban on the grizzly trophy hunt, although First Nations can harvest the animals for meat. Conservation groups, First Nations and communities press for restricting or banning trophy hunts on other species in some regions, encouraging people to come for viewing and photography opportunities instead.
- In August 2020, after two years of consultation with First Nations and other groups, the government introduced its Together for Wildlife Strategy, which outlines five goals and 24 actions as it works to improve future wildlife stewardship and habitat conservation in B.C. <https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/wildlife/together-for-wildlife>

THEME 6: NATURAL HERITAGE APPRECIATION | 6.1 Wildlife | 6.2 Vegetation

Description of Change in Value

- B.C. tourism is growing, generating an estimated \$20.8 billion in annual revenue as of 2018, an increase of 53% since 2008. Destination British Columbia notes that tourism contributed \$8.3 billion to the BC economy, and in 2018, tourism contributed more to GDP than any other primary resource industry, including forestry and logging, fishing and agriculture, oil, gas and mining. All communities in the Fraser River basin benefit from this growth. Source: Destination British Columbia – 2018 Value of Tourism.
- One of the main tourism draws is B.C.'s wildlife and wild areas, much of which is accessible in the Fraser basin. Endless opportunities exist for viewing wildlife and habitats in its varied, vast and breath-taking landscapes, from the soaring Rockies, dense Interior forests and dry grasslands in the Cariboo, into the river's canyon passage, where the water has cut 600 metres into the Interior Plateau bedrock, spilling finally onto the sprawling delta reaches below Hope.
- B.C. is home to three-quarters of Canada's mammal species, with 24 of those exclusive to B.C., many along the Fraser corridor, and many associated with its provincial parks or wildlife areas. The province has more than 1,100 species of vertebrates, including 488 species of birds, 468 species of fish, 142 species of mammals, 22 species of amphibians, and 18 species of reptiles. More than 250 bird species breed in B.C., 162 of those (55%) breed nowhere else in Canada. Invertebrate species likely number between 50,000 and 70,000, including 35,000 species of insects, including rare butterflies. Ecotourism is a growing and tourism sector in B.C. as more people are keen to appreciate wildlife.
- Ecotourism guides, outdoor adventure services or independent visits to parks and protected areas provide visitors with unforgettable experiences.

Reason For Change	<ul style="list-style-type: none"> • Ecotourism is a growing, vital part of outdoor recreation in B.C., particularly wildlife and wilderness viewing. • A 2016 study found bear viewing in the Great Bear Rainforest, for example, generated 12 times the economic impact of bear hunting, (\$15.1 million vs. \$1.2m from resident and non-resident hunters): Aug. 2016, The comparative economic value of bear viewing and bear hunting in the Great Bear Rainforest, <i>Journal of Ecotourism</i>. With the exception of the sudden slowing impacts of the pandemic in 2020 and 2021, tourism and especially interest in B.C.'s outdoor is expected to continue.
Actions Taken in Response	<ul style="list-style-type: none"> • Each region in B.C. has its unique landscapes, vegetation and wildlife stars to view. Destination BC, outdoor groups and BC Parks have information and advice for wilderness viewing and experiencing opportunities: www.env.gov.bc.ca/fw/wildlife/viewing/wheretoview.html • The Mighty Fraser Circle Route is a self-guided route that takes in 670 kilometres of the changing face of the Fraser, from Lillooet to Vancouver. Thousands of tourists come to Hell's Gate in the Fraser Canyon to see the river's dramatic natural beauty up close. Hell's Gate is the only descending gondola in North America, carrying its aerial trams down a 152-metre descent where the Fraser explodes 757 million litres of water a minute through this 33-metre wide passage near Boston Bar. • For birding enthusiasts the Fraser River Estuary is a must visit destination. It is a designated Important Bird Area and is the most significant of all of Canada's 597 designated areas for the vast numbers of birds and species that stop here on the Pacific Flyway: Important Bird Areas Canada, https://www.ibacanada.ca/site.jsp?siteID=BC017 • Regional libraries lend birdwatching backpacks to interested patrons, while bird watching apps (Merlin Bird ID, eBird, Seek by iNaturalist, Audubon Bird Guide) allow people to identify and learn about regional birds, and contribute to data collecting as citizen scientists; fvrl.bc.ca/birdwatching.php • Some estuary viewing areas include the George C. Riefel Migratory Bird Sanctuary, where more than 20,000 snow geese may winter; Brunswick Point, Ladner Harbour Park and Burns Bog. Birders are rewarded with rare and endemic birds throughout the Cariboo-Chilcotin. While the only nesting colony of American White Pelican in B.C. at Stum Lake (White Pelican Provincial Park), is closed to protect the colony, pelicans can be seen at other nearby lakes. • Salmon returning to their natal creeks to spawn attract other wildlife, such as bears and raptors, and humans. The Salmon Stronghold at Lhá:It/Harrison-Chehalis Wildlife Management Area near the Harrison and Fraser confluence has internationally significant numbers of wintering Trumpeter swans and bald eagles – up to 5,000 bald eagles a day can be seen gorging on salmon carcasses, and up to 35,000 may arrive in the short season, likely the largest congregation of eagles in the world. • Nearby are the Weaver Creek Spawning Channels, where salmon species can be seen close up as they spawn; there are many other places to see salmon returning, including the famous Adams River run in the Shushwap, which in some years has seen more than 3.8 million sockeye make the arduous journey up the Fraser. People can find returning salmon in streams in most of the Fraser basin area. • See also Natural Heritage sub-themes.

THEME 6: NATURAL HERITAGE APPRECIATION | 6.2 Vegetation

Description of Change in Value	<ul style="list-style-type: none"> • The various Fraser River ecosystems are good examples of Coastal Western Hemlock, Interior Douglas Fir, Ponderosa Pine, Bunchgrass, Sub-Boreal Spruce and Interior Cedar-Hemlock, in addition to coastal and low-lying wetlands, bogs and estuary vegetation.
Reason For Change	
Actions Taken in Response	<ul style="list-style-type: none"> • See also Natural Values.

THEME 6: NATURAL HERITAGE APPRECIATION | 6.3 Vista/Scenic Quality | 6.4 Geological Features/Water

Description of Change in Value

- These values remain. Around every bend it seems, the Fraser River and surrounding landscape offer breathtaking scenic views, several which were noted at the time of designation.
- While there are countless memorable vistas on the Fraser, one of the most famous is Hell's Gate, where the river tears down the rock walls of the narrow canyon, churning 757 million litres of water through the narrow 33-meter wide passage before the channel calms and opens up on the flat, near sea-level flood basin for the next 150 kilometres, where its brown waters muddy and feed the Pacific.
- See above and also Recreation sub-theme 4.1

Reason For Change

Actions Taken in Response

- All features noted in the nomination document remain:
- Pristine headwaters in Mt. Robson
 - Lillooet, Fort George and Yale, for historic and archaeological features
 - Lytton and Fraser/Thompson corridor, where the confluence of the Fraser and Thompson offers brilliant contrast in river colours
 - Fraser Canyon, a scenic and historic corridor and Hell's Gate
 - Fraser Delta/Boundary bay estuary, featuring intertidal flats and significant bird populations
 - Burns Bog wetlands

THEME 7: HUMAN HERITAGE APPRECIATION | 7.1 Historic Sites | 7.2 Cultural Landscapes

Description of Change in Value

- These values remain robust, as tourism is a key economic driver along the Fraser River corridor. One area of tourism that is soaring is Indigenous Tourism. As noted in other sections, historic and cultural sites exist throughout the Fraser River Basin (see Cultural Heritage Values section for examples). Local tours and self-guided tour books offer insights on location and significance.

Reason For Change

- Opportunities to learn and experience First Nations' cultures are expanding yearly as public interest grows.
- While tourism overall was greatly reduced in the pandemic year of 2020 to 2021, it is expected that full participation in this sector will resume in the post-pandemic era.

Actions Taken in Response

- This keen interest is reflected in the 2019 launch of Indigenous Tourism BC's (ITBC) new website, visually rich and combined with spellbinding storytelling, it highlights nearly 200 First Nations that call BC home. B.C. was the first region in Canada to enact legislation to implement the UN's Declaration on the Rights of Indigenous Peoples (UNDRIP). Beginning in 2020, Destination BC increased its financial support to ITBC by one-third, providing \$4 million over the next three years. See also Cultural Values.

THEME 7: HUMAN HERITAGE APPRECIATION | 7.3 Sporting Events/Activities

Description of Change in Value	<ul style="list-style-type: none"> These aspects were not noted at time of designation. However, several types of boating activities are noted above (Recreation Sub-theme 1 Boating)
Reason For Change	
Actions Taken in Response	<ul style="list-style-type: none"> Prince George is the site of the Northern Hardware Prince George Canoe Race, held in the Nechako and Fraser rivers annually in July. The two races include the 25 km Simon Fraser and the 67.5 km Alexander Mackenzie class, following the route of the voyageurs. The race originally ran the course from Isle Pierre to Lheidli T'enneh Memorial Park along the Nechako and Fraser Rivers from 1960 to 1984, and was revitalized in 2015 by Northern Hardware after a 30-year hiatus. Paddlers see the Fraser from a different perspective, and are liable to see bear, elk, moose, lynx, beaver, otter, eagles and even Fraser River sturgeon. This race is also a cultural celebration of First Nation and European people, and draws more than 50 teams a year. http://www.northernhardwarepgcanoerace.ca and https://www.princegeorgecitizen.com/sports/northern-hardware-canoe-race-route-a-paddler-s-paradise-1.23863082 A less competitive and more unconventional Cranberry Festival Voyageur Race takes place on the Fraser at Fort Langley in the early fall: www.langleyadvancetimes.com/sports/photos-fort-langleys-canoe-races-includes-dropping-pumpkins/ Mountain biking is a growing sport around urban centres. Trails are abundant and well maintained throughout the Lower Mainland, serving locals and visitors at sites around Mission, Abbotsford (Sumas Mountain), Chilliwack and Hope, and are found near most towns along the river's course. The Fraser Valley Mountain Bike Association maintains hundreds of trails, runs safety and skills workshops and promotes stewardship and low impact management to protect mountain areas. The FVMBA hosts the Trailblazer Mountain Bike Race Series, which has four races annually in the Fraser Valley. The races also include women's only, kids and young adult events, and attract more than 100 participants from around B.C. and the Pacific Northwest. A 2018 economic impact study by Mountain Bike Tourism Association (MTBA) and Destination BC found an increase of over 100% in revenues and employment numbers related to mountain biking in B.C. over a 10-year period, with revenues climbing from \$31.7 million to \$70.6M. Jobs directly related to mountain bike tourism went from 309 to 687 jobs.

THEME 7: HUMAN HERITAGE APPRECIATION | 7.4 Cultural Events/Activities

Description of Change in Value	<ul style="list-style-type: none"> While not discussed at the time of designation, the Fraser River is the catalyst for countless cultural events and activities for communities along its length, either on the shores of the river, in the river, or in communities close to the river. There are several popular annual community events that celebrate natural, cultural and recreational values examined in this report.
Reason For Change	<ul style="list-style-type: none"> These events are evolving and expanding from year to year.

Actions Taken in Response

- Fraser River area provincial, local and regional parks along with nonprofit organizations focus on events that better acquaint residents with local culture, history and wildlife. Cultural interpretation includes boat tours, theatre and exhibits, including those in riverside museums and at the world class in New Westminster. Communities celebrate RiverFest, B.C. Rivers Day and hundreds of other small to large community festivals annually.
- Among those events not directly related to the river are the annual Mission Folk Music Festival, and the Mission Twilight Concert series, both of which take place at Fraser River Heritage Park in Mission, where visitors have panoramic views of the river and the Fraser Valley.
- In 2017, Heritage Abbotsford Society introduced Jane's Walks to the community, one of the most recent supporters of this annual urban celebration, including interpretive walking tours of the historic Matsqui Village and Clayburn Village, both flooded in the 1948 Fraser flood, and a riverside walk that recounts Indigenous history and Fraser River natural history.
- One area of cultural tourism that is soaring is **Indigenous Tourism**. Opportunities to learn and experience First Nations' cultures are expanding yearly as public interest grows. This keen interest is reflected in the 2019 launch of Indigenous Tourism BC's (ITBC) new website: visually rich and combined with spellbinding storytelling, it highlights nearly 200 First Nations that call BC home: www.indigenoustbc.com. B.C. was the first region in Canada to enact legislation to implement the UN's Declaration on the Rights of Indigenous Peoples (UNDRIP). Beginning in 2020, Destination BC increased its financial support to ITBC by one-third, providing \$4 million over the next three years.
- The province is also unfolding a three-year to promote and improve accessibility for people of all abilities at several venues and destinations. Please also see Cultural Values.



Young visitors take a paws on approach at the Fraser River Discovery Centre – Fraser River Discovery Centre

9. Integrity Guidelines since Designation

Table 5 below identifies integrity criteria and comments on any relevant changed conditions on the Fraser River main stem. The assessment provided in the table asserts the Fraser River continues to meet the integrity requirements of the CHRS.



The Fraser River Discovery Centre in New Westminster events and exhibits highlight the history of the Fraser – FRDC

Table 5: Fraser River Integrity Guidelines

CHRS Principles, Procedures and Operational Guidelines (2017)	Changes or Threats to River Integrity and Actions taken
Natural Integrity Guidelines	
1. Rivers should not have any human-made impoundments within the nominated section.	There are no impoundments on the Fraser River.
2. All key elements and ecosystem components must be unaffected by impoundments located outside the nominated section.	The Kenney Dam on the Nechako River near Prince George, built in the 1950s for hydro-electric generation, reduced up to 70% of flows on this tributary of the Fraser. Resulting low water levels since have negatively impacted returning salmon stocks. The Cheslatta T'en First Nation, displaced when their lands were flooded, and other local communities plan a cold water release facility (as of 2019) to restore a more natural flow regime to the watershed.
3. Natural values for which a river is nominated must not have been created by impoundments.	No natural values on the Fraser have been created by impoundments.
4. The river's outstanding natural heritage features and key elements of ecosystems must be unimpaired by human land uses.	<p>Outstanding natural heritage features and key elements of ecosystems are not significantly changed since designation. However, many areas adjacent to the Fraser River, particularly in the lower and middle stretches, are used for agriculture, forestry, industrial and urban activities. Current and developing management strategies help ensure existing land use practices do no reduce the river's heritage values. Some challenges to the Fraser are development, contaminants and pollution, infrastructure development, land conversion and loss of habitat, overharvesting, invasive species and current and long-term climate change impacts.</p> <p>Key actions underway or being developed will benefit the health of the Fraser:</p> <ul style="list-style-type: none"> • Actions to reduce greenhouse gas reductions, including BC's ClimateAction Plan, BC's carbon tax • Water resources management strategies at provincial and local levels • Lower Mainland Flood Management Strategy, facilitated by the Fraser Basin Council • Ongoing work by a host of non-governmental organizations to find collaborative solutions to address issues challenging the Fraser • Federal, provincial and utility corporation programs to improve fisheries management, improve and restore critical habitats, enhance governance, support public education • International recognition of key ecosystems on the Fraser, including Important Bird Areas for migrating shorebirds and waterfowl • Establishing critical Wildlife Management Areas, such as Lhá:It Harrison-Chehalis, and South Arm Marshes • Updated or new provincial species at risk and wildlife management strategies and legislation • Federal species at risk recovery plans, COSEWIC assessments • Provincial invasive species prevention and control programs • Growth of BC's tourism sector, in particular the Indigenous and ecotourism sectors. • Support for federal and provincial heritage sites; establishment of Indigenous cultural sites • Fraser River Discovery Centre's public education work on the ecological, cultural and recreational, historical and economic value of the Fraser.

5. The river's water must be uncontaminated to the extent that its natural aquatic ecosystem is intact.

With the average flow at the Fraser's mouth about 3,475 cubic metres per second (122,700 cu ft/s), this large volume of water flowing down its system has a strong flushing effect, enabling the natural aquatic ecosystem to be relatively uncontaminated. However, agricultural and industrial discharges do occur, especially in the Lower Fraser and its arms. The Province and Environment Canada monitors and addresses water quality standards through Water Quality Objectives, permits and inspections to manage sources (industry, local utilities, agriculture, resource projects), along with enforcement of environmental legislation when violations occur. Source: Water Quality Assessment And Objectives For The Fraser River From Hope To Sturgeon And Roberts Banks.

Protecting water quality integrity from ocean inundation and inland flooding is a key element in the Lower Fraser Flood Management Strategy under development (2020): www.fraserbasin.bc.ca/water_flood.html

Cultural Integrity Guidelines

1. Most of its regime should have the same visual appearance as it had during the period of the river's historical importance.

The Fraser River has had significant cultural, economic and spiritual significance to First Nations populations for the past 12,000+ years, and to Europeans settlers in more recent centuries. Consequently landscapes have changed over time with settlement and development – in particular the middle and lower reaches. However, while a comparative look of the entire river is not readily available, it is estimated that much of the Fraser River region has not changed since the time of designation.

2. Most of the artifacts comprising the values for which the river is nominated must be unimpaired by impoundments and human land uses.

While data is not readily accessible on this point, there are no impoundments or known human land uses that would seriously change this value of the Fraser since its designation, and it is estimated that the status has not changed. Heritage groups and museums maintain and preserve significant sites and artifacts at places such as Fort Langley and Fraser Fort George Regional Museum. An increasing number of Indigenous communities along the Fraser pursue archaeological projects, and establish cultural sites to remember and celebrate their culture and heritage, such as the Tuckkwiowhum Heritage Village, which celebrates the Nlaka'pamux culture in the Fraser Canyon.

3. Neighbouring land uses must not seriously affect the historical experience offered by the river environment.

It is estimated that the status has not changed since the time of designation. As noted in the nomination documents, historical uses of the river that continue (travelling, towing logs and other goods, fishing, agriculture) add to the cultural experience on the river. There are provincial and regional riverside parks along the Fraser, and new developments work to ensure river access for people and wildlife continues. The Experience the Fraser recreational and cultural project works to connect people to the river along 550 kilometers of trails from Hope to Vancouver. Flood infrastructure improvements that will result from the Lower Fraser Flood Management Strategy include appropriate ways to connect people to the river.

4. The biophysical quality of the water must be suitable for non-contact recreation.

This status is not changed since the time of designation.

Recreational Integrity Guidelines

- 1. The river possesses water of a quality suitable for those recreational opportunities for which it is nominated.**

This status is unchanged since the time of designation.

- 2. Be capable of supporting recreational uses without significant loss of or impact on its natural, historic or aesthetic values.**

It is estimated this status is relatively unchanged. Concerns were raised 2019-2020 in the Lower Fraser that development on Herrling and Carey islands, and recreational activity on Gill bar and other nearby bars accessible by off-road drivers, may be damaging Fraser White Sturgeon and salmon spawning and juvenile habitat. Development proposals on the islands were denied: the Heart of the Fraser initiative proposes the area be designated as Canada's first Ecologically Sensitive Area, a new designation under the Fisheries Act.

Fishing on specific gravel bars was closed in starting in 2019 to protect sturgeon beds. In 2019, the City of Chilliwack applied for a 30-year lease to manage Gill bar, while DFO stationed a presence in the area.

Non-profit organizations also monitor the river and tributaries for water quality, and undertake shoreline and area cleanup events to protect habitats and to engage citizens in stewardship of the Fraser River in their communities.

General Integrity Guidelines

- 1. The river should be of sufficient size and contain all or most of the key interrelated and interdependent elements to demonstrate the key aspects of the processes, features, activities or other phenomena that give the river its outstanding value.**

This has not changed since designation.

- 2. The river should contain those ecosystem components required for the continuity of the species, features or objects to be protected.**

In the winter of 2018, an estimated 110,000 cubic metres of rock slumped off a 125-metre cliff and fell into the Fraser at a narrow point at Big Bar, (Lillooet, B.C.), effectively blocking migrating Pacific salmon from going to their spawning grounds upstream, and potentially disrupting the reproductive cycle of several significant Upper Fraser salmon populations. Since then, First Nations and governments have worked non-stop to rehabilitate the narrow passage with reinforcement, fish ladders, resting pools, and even moving migrating salmon mechanically. The agencies are working to avoid the long-term negative effects, similar to the impacts of the 1914-era blockage of Hell's Gate from railway construction; stocks recovered only after several years.

- 3. The quality of water should be such as to provide for the continuity and/or improvement of the resource upon which value to the system has been determined.**

Please see above, Natural Integrity Guidelines, point 5.

*A white sturgeon gets a check-up on the
Lower Fraser – Robert Moberg Films*



10. Review of Management Plan


Table 6: Fraser River Management Plan Recommendations and Status

The Fraser Canadian Heritage River Management Plan (1998)	Degree of Achievement	Comments
<p>Action 1.1</p> <p>Encourage agencies and individuals that do research, inventories and monitoring of Fraser River values (physical attributes, natural and historic values and recreational opportunities) to continue to research, inventory and monitor.</p>	Ongoing	<p>A range of federal and provincial government ministries, First Nations organizations, stewardship and environmental groups conduct research, monitoring and assessments of those Fraser River assets. These groups and authorities have varied interests in the river's values including (to date): more than 20 provincial and federal ministries, municipalities, First Nations, diking authorities, and private and public sectors, stewardship groups, tourism and cultural interests and recreational users, railways, port authorities and others.</p> <p>A potentially new governance structure may arise through the Lower Mainland Flood Management Strategy final phases and incorporate environmental guidelines, post 2021. Many such agencies were surveyed for this monitoring report. These represent a great potential source for monitoring and data resources for future annual and decadal reports. See also Cultural Values – Jurisdictional Uses</p>
<p>Action 1.2</p> <p>Monitor Fraser River for CHRS values, to involve the regular collection of information on its heritage and recreational values. A checklist for submission to the CHRS Board is to be submitted in form of Appendix C. Changed values will be recorded.</p>	Ongoing	<p>A number of groups monitor conditions and activities in the Fraser Basin and the Fraser River.</p> <p>This second 10-year monitoring report submitted to the CHRS Board reflects many of the findings of some of those organizations. Stewardship, cultural and recreation organizations along with local governments are a valuable resource as reporting and monitoring agents for the CHRS program.</p>

The Fraser Canadian Heritage River Management Plan (1998)	Degree of Achievement	Comments
<p>Action 2</p> <p>Formally recognize and support private and public stewardship efforts.</p>		<p>BC Rivers Day is a province-wide annual event that occurs on the last Sunday in September. Established by the Outdoor Recreation Council of BC in 1980, it has grown exponentially in the last three decades. Locally planned events range from stream cleanups to paddle trips, community festivals, and stream stewardship. The event celebrates the recreational, environmental, economic, and aesthetic importance of BC rivers and attracts more than 100,000 participants each year. Based on the success of BC Rivers Day, National Rivers Day in June was established in 2003 and World Rivers Day in 2005:</p> <p>www.orcbc.ca/pro_bcriversday.htm</p> <p>Stewards have long been the champions of the Fraser River and its fish. Many of these groups are noted in this report; it would be beneficial to them and to the CHRS to increase collaboration and awareness of each other in the coming decade.</p>
<p>Action 3</p> <p>Advocate for greater compliance with existing legislation and rules.</p>		<p>A full assessment of advocacy efforts for greater compliance with existing legislation continues to be challenging due to the geographic extent, diversity and complexity of the Fraser River Basin.</p> <p>In B.C. several environmental and other advocacy groups exist, along with many First Nation communities, who call for greater compliance with and improvement of fisheries regulations, water quality standards, greenhouse gas reductions, waste management and more.</p> <p>In part these include West Coast Environmental Law, EcoJustice Canada, Alouette River Management Society, Western Canada Wilderness Committee, Rivershed Society of BC, the BC Wildlife Federation and its Heart of the Fraser initiative, Watershed Watch Salmon Society, David Suzuki Foundation, Federation of BC Naturalists, and First Nations councils such as the Lower Fraser Fisheries Alliance, the First Nations Fisheries Council, and the emerging (2020) Fraser River Collaborative Table, which will have First Nations and recreational fisheries represented.</p>
<p>Action 4</p> <p>Ensure that the CHRS status of the Fraser is considered at all planning levels in looking at land use, resource management and settlement planning.</p>	Unkown	<p>In general, the Lower Fraser Flood Management Strategy encourages the incorporation of values that support the heritage designation of the Fraser River to its members partners as they develop the strategy. However, the degree to which the Canadian Heritage River designation is considered is not known.</p>

The Fraser Canadian Heritage River Management Plan (1998)	Degree of Achievement	Comments
Action 5 Provide ongoing opportunities for stakeholder/ public involvement in management of the Fraser as a Canadian Heritage River.	Ongoing	Several collaborative processes, most led by government, which include stakeholders and public involvement regarding the management the Fraser River. A few examples are the provincial Wild Salmon Strategy, the federal Pacific Wild Salmon Policy, the Lower Fraser Flood Management Strategy, Invasive Plant Council of BC, provincial and federal species at risk public engagements, the provincial Together for Wildlife strategy, several watershed roundtables in the basin. The degree to which the Canadian Heritage River designation has been considered in these processes is unknown and warrants clarification.
Action 6 Celebrate and promote the Fraser's CHRS designation.	Ongoing	<ul style="list-style-type: none"> • The 1998 Fraser River Canadian Heritage River commemorative plaque at the Fraser River Discovery Centre at New Westminster Quay will be replaced by a new plaque highlighting the importance of the Fraser to the region's Coast Salish peoples, in Halq'eméylem, English and French. A date to install the plaque was set tentatively for September 2021 to align with FraserFest. FRDC regularly recognizes the Fraser's CHRS status at key events, in programs, on its website, and on a permanent gallery exhibit panel. • The Fraser Basin Council promotes the CHRS designation in its communications materials. • FBC's Youth Program undertook the Heritage Rivers interactive story map project supported by CHRS and Parks Canada: See more at https://www.fraserbasin.bc.ca/Heritage_Rivers_Storymaps.html • BC Parks promotes the Fraser River's heritage designation on their website, and other agencies make note of its heritage status.

The Fraser Canadian Heritage River Management Plan (1998)	Degree of Achievement	Comments
<p>Action 7</p> <p>Encourage community and public education programs promoting river stewardship and appreciation</p>		<p>Following are examples of organizations involved in promoting river stewardship, but it is not an exhaustive list. Governments, First Nations, sporting groups, private business, universities, professionals (biologists), tourism and others also promote stewardship and appreciation of the river.</p> <ul style="list-style-type: none"> • Alouette River Watershed Society • BC Freshwater Institute • Burns Bog Conservation Society • Coquitlam River Watershed Society • BC Stewardship Centre • BC Wildlife Federation • Pacific Streamkeepers Federation • Pacific Salmon Foundation • Rivershed Society of BC • Fraser Basin Council • Fraser Headwaters Alliance • Fraser River Sturgeon Conservation Society • Fraser River Discovery Centre • Fraser River Salmon Society • Fraser Valley Conservancy • Fraser Valley Illegal Dumping Alliance • Fraser Valley Watersheds Coalition • Kanaka Education and Environmental • Partnership Society • Langley Environmental Partners Society • Pacific Streamkeepers Federation • Pitt River and Area Watershed Network • Stave Valley Salmonid Enhancement Society • Watershed Watch Salmon Society



*When complete Experience the Fraser system will link 550 kilometres of trails from Hope to Vancouver. Here the trail runs along the Fraser and Matsqui Prairie, with Sumas Mountain to the east.
– Fraser Valley Regional District*

11. Summary, Benefits and Conclusions

Summary: The Fraser River main stem was designated as a Canadian Heritage River in 1998 in recognition of its exceptional natural, cultural and recreational values. This second 10-year monitoring report, covering the years from 2009 to 2020, assesses the degree to which the Fraser River continues to possess the heritage values for which it was originally nominated. Overall, the natural heritage, cultural heritage and recreational values remain vigorous and well founded. Specific examples and general discussion in the chronology of events, and in the heritage values and guideline tables in this report support this assessment.

Along the Fraser River's remarkable 1,375-kilometer course are significant geological features and ancient landforms, from alpine ranges, high plateau and grasslands, forested mountains, deeply etched canyons, to a broad, fertile delta and abundant estuary. Its route slips through diverse landscapes including six of the 10 eco-provinces within British Columbia and seven of 16 unique biogeoclimatic zones. These freshwater, estuarine and marine ecosystems support a superbly rich variety of fish, fauna and flora. Five salmon species and steelhead trout begin and finish their lives in the braided gravel channels and tributaries of the Fraser, along with the giant, prehistoric era white sturgeon. Canada's most productive salmon river, and one of the most significant in the world, the Fraser is fed by thousands of tributaries, draining an astounding one-quarter of the province's land mass. The lower reaches of the river particularly, support millions of shore birds and critical Pacific Flyway migratory stopovers in internationally significant estuaries and wetlands, which, along with its Salmon Strongholds, support tens of millions of juvenile salmon and other species that are part of this region's remarkable ecological diversity.

The human history of the province and the nation, too, echo along its banks. For thousands of years, the Fraser has had a profound influence on the lives of Indigenous Peoples, and on European settlers who arrived more than 200 years ago. A diverse network of First Nation communities and tribal groups with unique cultural traditions, language families and

dialects have lived and thrived along its reaches. This rich cultural heritage continues to thrive today and influences life in every sector in the province.

Post European contact, the Fraser was a route for exploration, commerce and settlement, from 1808 when Simon Fraser sought trade routes for the North West Company, a role it continues today – many sectors rely on the Fraser delta as a major transportation hub from Vancouver to Pacific and American markets. Hamlets, towns and cities gather on the Fraser's route, including more than three million inhabitants, or about two-thirds of B.C.'s population. The Fraser supports a dynamic range of modern economies, from shipping, industry and resource development, fishing, forestry, agriculture, recreation and tourism.

The sheer size, complexity and dynamic nature of the Fraser River makes fully encapsulating the depth and status of its Canadian Heritage River values a challenge, as these are diverse and variable along the length of the river. However, this report contains a variety of examples from the past decade and relevant commentary that provide a thorough assessment of the values described in the CHRS heritage framework, supporting the Fraser's heritage designation.

It should be noted there are opportunities for inclusion or expansion, in particular in recognizing Indigenous Peoples critically important as the First Peoples who live alongside the Fraser River, and their ongoing contributions, knowledge and perspectives that are foundational to the fabric of the province.

It is also imperative to recognize threats to the natural heritage values for which the Fraser River was originally designated and require discussion.

Human activities found all along the main stem but particularly in the more populated lower Fraser, including agriculture, urban growth and resource development, contribute to habitat degradation, fragmentation and loss, pollution and invasive species, disease and fishing by-catch. Climate change affects the Fraser's water flows, increases water temperatures, and leaves the basin's grasslands and forests more vulnerable to wild fires. Warming ocean currents bring other stressors to sea-going salmon, including competing fish species, and changes in prey food. Rising sea levels pose significant threats to the Fraser River estuary and ecosystems as they become increasingly prone to flooding.

These impacts have contributed to:

- **Declining salmon and other fish stocks since the last CHRS decadal report.** While 2010 saw 34.5 million sockeye return to the Fraser, one of the largest in 100 years, those numbers fell to 293,000 in 2020, the lowest sockeye return on the Fraser since records began in 1893. Notably, about one-third of those 2020 sockeye were from the robust Harrison run, which originate in the designated Harrison-Chehalis Salmon Stronghold.
- **Of the 13 wild Fraser River Chinook salmon populations assessed by COSEWIC, 12 were deemed at risk as of 2020.** In January 2018, COSEWIC classified the Thompson-Chilcotin River run steelhead as endangered as their numbers fell by 81% in three generations – these populations are deemed to be in a state of Extreme Conservation Concern.
- **Lower Fraser River white sturgeon numbers have averaged 45,650 individuals yearly since 2001, however, juvenile sturgeon numbers decreased by 63% in one fishery area, and their annual growth rate was one-third less in 2019 than it was in 2002.** This may be due to the decline in the sturgeon's prey food, eulachon, designated as endangered in May 2011 by COSEWIC.
- **A devastating blow came to Fraser salmon in 2018 when 110,000 cubic metres of rock fell into the river at Big Bar, blocking access to salmon headed upstream to spawn.** All levels of government and First Nations have poured their efforts into re-engineering the passage, adding fish ladders and resting pools. This event could potentially disrupt the reproductive cycle of several Upper Fraser salmon runs for generations, however there is reason to be hopeful: a similar disaster in 1914 in the Fraser Canyon was eventually cleared, and the Fraser's salmon runs eventually recovered.

The Fraser's natural values are inherently intertwined with its cultural and recreational values. Declining salmon numbers reduce the availability of harvestable stocks, significantly affecting Indigenous communities, food security and their traditions relating to fish harvest, as well as reduced commercial and recreational fisheries.

Despite these challenges to the Fraser River in the past decade, its natural and cultural heritage and recreational values largely remain robust. Here are a few of the many actions and developments that contribute positively to the natural, cultural and recreational values of the Fraser:

- **By October 2018, the federal government along with the B.C. government had acted on all 75 recommendations of the 2012 Cohen Commission on declining sockeye salmon in the Fraser River, many of which are ongoing programs to update salmon health assessments and fisheries management, habitat protection and restoration.** The BC Salmon Restoration and Innovation Fund, the Coastal Restoration Fund, the Canada Nature Fund for Aquatic Species at Risk and other programs target habitat rehabilitation and other actions stemming from the Cohen report;
- **Fisheries management reviews are underway with Indigenous and commercial fishing communities to reduce vulnerable species by-catch and to improve estuary habitats;**
- **Revision of the federal Fisheries Act in 2018 strengthened important protections for fish and fish habitat and set updated requirements to rebuild depleted fish populations;**



- Ecologically Significant Areas (ESAs) designation is modernized under the revised Fisheries Act, to protect sensitive, highly productive, rare or unique areas;
- Measures are underway in the Lower Fraser to restore critical fish habitats;
- B.C. is developing new Together for Wildlife and Species at Risk management policies;
- Federal and provincial governments pursue species at risk and ecosystem recovery plans;
- First Nations, Cariboo-Chilcotin Ecosystem Restoration Committee, communities and provincial agencies are reviving grassland and forest ecosystems with controlled burns;
- International recognition of key ecosystems continue in B.C., with additional Important Birds Areas and Salmon Strongholds in the lower Fraser;
- The province is gaining control of the mountain pine beetle with targeted pest control and forestry measures, and forests are beginning to recover;
- The Invasive Species Council of B.C. is working with First Nations, the province and communities to implement management plans to prevent, eradicate or control invasive species;
- Many local groups continue outstanding stewardship work;
- Fraser River Discovery Centre exhibits and events that educate the public on the importance of the Fraser as a living, working river to its communities;
- There are expanding opportunities for the public to experience natural and cultural heritage on the Fraser, through existing historic sites, museums and new parks;
- BC's tourism sector continues to grow, including ecotourism, the continued development of the Experience the Fraser Trail, and the burgeoning Indigenous Tourism sector;
- Destination BC supports the development and improvement of accessible tourism services and activities to ensure persons of all abilities can participate in BC's recreational and cultural experiences;

- The Province adopted the *Declaration on the Rights of Indigenous Peoples Act* in 2019, which will enhance efforts to support Indigenous peoples' rights to maintain and strengthen Indigenous institutions, cultures and traditions, to pursue self-determined development and other rights.

11.1 Summary of Benefits as a Heritage River

The Fraser River's designation as a Canadian Heritage River is influential in capturing the public's imagination, drawing them in to learn more about the natural history and character of this magnificent river, and about its impact on the province's residents in the past, today and tomorrow. Benefits that arise from its heritage river designation are numerous, and will deepen and accumulate over time.

A few of those benefits include:

- Ongoing collaborative monitoring and conservation efforts by federal, provincial, First Nations governments and other partners;
- An improved comprehensive understanding and knowledge of the heritage values of the river taken in their entirety by river management bodies;
- Designation draws increased awareness to the Fraser River:
 - The Fraser is cited as a CHRS Heritage River in species management reports, studies and promotional materials used by the federal government, the Province of British Columbia, local governments, the Fraser Basin Council, numerous stewardship and conservation groups, tourism and adventure tourism, and in the media.
 - The annual and ten-year reports required for CHRS designation deepens Parks Canada's and the Province of BC's awareness and knowledge of the Fraser's heritage values, and identifies gaps and opportunities on which to build.
 - The Outdoor Recreation Council, which compiles an endangered B.C. rivers list annually, makes note of the Fraser's status as a Canadian Heritage River as a potential catalyst and motivator for improved environmental practices along the river.



- The Fraser's heritage status increases recognition, attention and engagement in public outreach and educational programs, and improves general public understanding of the Fraser River's exceptional story and values, and benefits to British Columbians and Canadians.
- The Fraser's heritage status and values helps to increase the public's understanding of how Indigenous People's history and culture are intertwined with that of the Fraser.
- The Heritage Designation creates a sense of pride and responsibility among citizens.
- The Fraser's designation as a valued heritage river helps ENGOs draw attention to their conservation works, and helps stimulate support and funding for their river-related projects.
- The CHRS website provides national recognition of the Fraser River, and builds awareness of river conservation and CHRS activities across Canada.
- **CHRS provides funds for a range of works related to heritage rivers:**
 - Funding for stewardship projects such as river events;
 - Heritage Rivers Storymap Project: In 2018, the Fraser Basin Council's Youth Program developed two story maps for the Fraser and Cowichan rivers to highlight their cultural, natural and recreational heritage values as part of the national story map project supported by the Canadian Heritage Rivers System and Parks Canada. The interactive storytelling site highlights the Fraser River's cultural, natural, and recreational heritage values, with 43 cultural, 27 natural and 38 recreational features. The Story Map went online in 2020. Related stories are also at My Climate Story, at bit.ly/3f67yiT
 - CHRS funding supported the installation of the original Fraser River commemorative plaque at the Fraser River Discovery Centre in New Westminster. An updated plaque with a broader acknowledgement of the importance of the Fraser to Indigenous Peoples along the river, described in three languages, will replace the original plaque. The new plaque will be unveiled in 2021, or later if required, pending pandemic guidelines. The CHR commemorative plaque helps to raise public awareness of CHRS program.

11.2 Conclusions

- Collaboration among all levels of government, First Nations communities and Indigenous agencies, and communities is critical to successfully protecting the Fraser River's many natural, cultural and recreational values for generations far into the future. The size and complexity of the Fraser demands such cooperation for the long-term protection of the river's values;
- Indigenous traditional and local knowledge and perspectives are critical to better inform strategies and actions;
- In the spirit of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), Canada's Truth and Reconciliation Commission, and the Province's 2019 *Declaration on the Rights of Indigenous Peoples Act*, there is an opportunity for CHRS and its partners to create fuller, collaborative relationships with Indigenous Peoples to enhance the heritage values of the Fraser River:
 - One such expression could be to create an ongoing, collaborative program over the next decade with Indigenous groups, local communities and others to update and add to the information on the interpretive and commemorative plaques along the Fraser to include and recognize Indigenous history, culture, experience and perspective. This work would honour and acknowledge the profound and inherent place of Indigenous Peoples in the history of the Fraser.
 - Similar efforts could be made for some other communities who have not in the past been recognized: the plaque in Lytton that recognizes Chinese settlers is an example. Such works will benefit all British Columbians, Canadians and our visitors with a deeper awareness, understanding and appreciation of Indigenous culture and settler contributions of the past and today.
- With the effects of rapid climate changes and impacts on ecosystems, monitoring the changes is critical in order to adapt management plans quickly and appropriately. Part of that work could follow the commitments to protect and restore fish habitats, for spawning, rearing, feeding and shelter, along the river's channels, sloughs, wetlands and seaside estuary to preserve the Fraser's abundant fish and other wildlife species;

- Like the river, actions to protect, enhance and improve its natural, cultural and heritage conditions are dynamic and emerging continually – the annual reports are critical platforms by which to track significant developments. It should be noted that community-based actions add to the protection, care and love for this remarkable waterway, but these actions may not always be recorded. Increasing awareness of the CHRS program to a broader audience, including directly toward those groups working to enhance the Fraser’s heritage values, is a way to attract invested parties along the river to contribute to future monitoring reports and to increase awareness of the CHRS program.
- The collaborative management of the river could be improved through a more detailed and updated management plan, one that might also engage and seek input from communities and organizations along the Fraser River. The B.C. Ministry of Environment and Climate Change Strategy will work with the CHRS Board to determine appropriate scheduling for drafting a revised management plan.

This report concludes that the natural, cultural and recreational values of the main stem of the Fraser River remain largely intact. The Fraser River is worthy of continued designation as a nationally significant river within the Canadian Heritage River System.



The Fraser Basin Council sponsored two youth in 2018 to journey down the Fraser River in canoes and rafts, in a sustainable living leadership program hosted by the Rivershed Society of BC. Here, the team enjoys a scenic view and paddle – Brock Endean

Salt and fresh water mingle in the Fraser estuary that provides critical habitat for young salmon before they go to sea
– Raincoast Conservation, Alex Harris





10-year Monitoring Report – 2009 to 2020

The Fraser

A Canadian Heritage River

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Prepared by
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